A STUDY OF ATTITUDES, PARTICIPATION, AND KNOWLEDGE OF FLUE-CURED TOBACCO PRODUCERS CONCERNING THE VIRGINIA COOPERATIVE EXTENSION SERVICE

by

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DEDICATION

This dissertation is dedicated to my wife, Evanion and our daughter, Tiffiny. Evanion's love, understanding and support made the completion of this study possible.
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Chapter 1
INTRODUCTION

Problem Description and Background

The Virginia Cooperative Extension Service is an informal educational organization designed to meet the educational needs of the people it serves. "This is not education in the abstract, but education for action" (Subcommittee on Scope and Responsibility, 1958, p. 3). The Cooperative Extension Service develops educational programs to assist people in solving daily problems encountered in areas related to agriculture and home economics.

Throughout this country local Extension agents, working at the county level, have the resources of the land-grant institutions and the United State Department of Agriculture at their disposal in developing educational programs. The Smith-Lever Act of 1914 created a partnership between the United States Department of Agriculture and the land-grant institutions in conducting Agricultural Extension work. According to United States Congress (1913-1915), the Smith-Lever Act specified that the major functions of the Cooperative Extension Service would be:

| 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. (p. 372)

The Joint United States Department of Agriculture and National Association of State Universities and Land-Grant Colleges Extension Study Committee (1968) stated:
The Smith-Lever Act while giving Extension a very broad clientele [the people of the United States] specified that its programs should be concerned with agriculture and home economics and subjects relating thereto. There can be little question concerning Extension's authority and, indeed, its obligation to serve agriculture. (p. 18)

The Joint United States Department of Agriculture Committee further articulated that it is obvious that the Cooperative Extension Service must serve agriculture regardless of the other activities it may conduct. Moreover, the programs in agriculture must be broad in scope and directed to all segments of agriculture.

As a result of the efforts of the Cooperative Extension Service, agriculture in the United States has become more efficient. However, the Joint United States Department of Agriculture and National Association of State Universities and Land-Grant College Extension Study Committee (1968) indicated that this has made Extension the target of numerous criticisms. It was revealed that some people are of the opinion that the Cooperative Extension Service and research have brought the American farmer to the point where the services of Extension and research are no longer needed. "Critics point out that the county agent cannot keep ahead of all the farmers in his county" (Joint United States Department of Agriculture, National Association of State Universities and Land-Grant Colleges Extension Study Committee, 1968, p. 24).

During the last several decades, the Cooperative Extension Service has expanded its programs to include clients beyond the rural farm sector. According to the United State Department of Agriculture (1948),
the demands from the urban residents should be met if resources were available. The Virginia Joint Legislative Audit and Review Commission (1979) reported that the scope of the Cooperative Extension Service programs had broadened substantially. Additionally, the Virginia Joint Legislative Audit and Review Commission (1979) stated: "Whereas programs once focused almost exclusively on the practical application of new technology, program topics now include cultural, recreational, and leisure time activities" (p. 18).

Since Cooperative Extension work was created in response to a need for educational programs in the field of agriculture, programs relative to agriculture should receive high priority from the local Cooperative Extension staffs. A Report of the Extension Service Budget and Guidelines Task Force (1978) indicated that 39.6 percent of the Virginia Professional Extension staff time was devoted to agriculture and natural resources during the 1978 fiscal year. Furthermore, the report indicated that the Virginia Cooperative Extension Service was using most of its budget for non-agricultural related activities. This, along with several other allegations, led to an investigation of the Virginia Cooperative Extension Service programs by the Virginia Joint Legislative Audit and Review Commission of the Virginia General Assembly.

The Cooperative Extension Service has a responsibility of developing and implementing educational programs to meet the needs of its clients. Gregory (1967) pointed out that the success and future role of the Cooperative Extension Service is dependent upon the image
created in the minds of people. He further reported that the effectiveness of any program is determined by the degree to which the clients feel the programs meet their needs. 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.

Some people believe the Virginia Cooperative Extension Service has expanded its programs too far beyond the farming community to meet the needs of urban, suburban, and other clients of the non-farm sector. For example, the Virginia Joint Legislative Audit and Review Commission (1979) reported that a large number of faculty and field staff responding to a survey indicated that Extension had expanded beyond the traditional areas of agriculture, 4-H, and home economics.

Nolan and Lasley (1979), in a study of Missouri Farmers, said:

There's evidence that the distribution of Extension resources isn't uniform across all categories of farmers. The criticism that Extension programs are directed at "large, successful" farmers is at least partially supported by the data, although not to the extent that some would have us believe. (p. 25)

Warner and Christenson (1981), in a study of the Kentucky Cooperative Extension Service pointed out that:

Extension in Kentucky served a substantial number of small farms. Of those farmers who reported using Extension, 45% farmed less than 100 acres, 33% had from 100 to 259 acres, 13% farmed 260 to 499 acres, and 9% over 500. Nevertheless, even with the majority of clients being small farmers, Extension served a smaller percentage of small farms and a
larger proportion of large farms than was present among the non-users. (p. 26)

Burns (1969), in a study of attitudes toward the Missouri Cooperative Extension Service suggested that there was a linear relationship between personal contact and gross farm sales. "Those with gross sales under $10,000 had a median level of 2.18 and those over $20,000, a level of 4.29" (Burns, 1969, p. 14). This would tend to indicate that small farmers are not utilizing the services of the Cooperative Extension Service to the same degree as large farmers.

"Since knowledge is such an important resource, the failure of the (Virginia) extension service to reach small farmers contributes to the farmers' relative disadvantage" (Orden and Smith, 1978, p. 29). Lewis (1971) suggested that the Cooperative Extension Service should devote more emphasis to innovative methods and techniques that could be used in implementing programs with low socio-economic status adults.

Paul (1970) concluded:

The stratification of farmers within a community means that information for one group may not be pertinent to another group. Yet in spite of these recognized differences, we still focus our extension programs and methods on the "successful" farmers who have risk capital to test ideas. (p. 9)

Orden and Smith (1978) reported similar comments to those of Paul (1970) when they stated that Kadlec concluded the following:

Small farmers have some research needs in common with larger farms, but also need different information concerning labor intensive production systems, growth management strategies, and the adoption of new and appropriate technology. (p. 28).
It was revealed by Nolan and Lasley (1979) that traditionally the Cooperative Extension Service has assumed that its audience is relatively homogenous. In the earlier years of its existence this was a valid assumption; however, Nolan and Lasley (1979) stated:

The last three decades have witnessed a marked change in the social structure of rural Americans. Our concern is that Extension's programming hasn't seen a corresponding adjustment. (p. 25)

Slocum (1969) suggested that specialization is a trend in the occupational structure in the United States. According to Slocum:

In Extension Services this trend is supported by the needs of commercial farmers and other clients for information that can be provided most effectively by subject-matter specialists and sometimes only by them. To meet the burgeoning demand, additional specialized roles have appeared and others may be anticipated (p. 161)

Moreover, this demand has created a need for Extension agents with specialized skills in a given subject matter area at the local level.

The rationale for the shift away from the traditional system of the local agricultural Extension agent who is a generalist, according to Slocum (1969), is due to the growing demand for specialized information. Slocum further said:

Successful operators of commercial farms need specialized information pertaining specifically to their particular types of enterprises. To get it some were by-passing local agricultural agents (who frequently knew less than they did about their specialized problems) and going directly to the research worker--the scientist who was pushing back the frontier of knowledge. (p. 162)

The amount of knowledge Virginia Cooperative Extension Service has regarding the attitudes of farmers toward its programs is minimal.
Gross (1977) stated that Cooperative Extension Service professionals can do a better job when they know how people feel about their programs. The image of the Virginia Cooperative Extension Service in the farming sector of Virginia appears to be a topic that should be investigated.

**STATEMENT OF THE PROBLEM**

There is a general lack of adequate information regarding the attitudes of the public toward the Virginia Cooperative Extension Service in the agricultural community. Therefore, this study determined the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service.

Specifically, this study sought answers to the following research questions:

1. What are the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service flue-cured tobacco program?
2. What are small and large flue-cured tobacco producers' attitudes toward the overall agricultural program of the Virginia Cooperative Extension Service?
3. What are small and large flue-cured tobacco producers' attitudes toward the qualifications of the Virginia Cooperative Extension Service local professional staff?
4. What is the degree of participation in Virginia Cooperative Extension Service programs by small and large flue-cured tobacco producers?

5. Are small and large flue-cured tobacco producers knowledgeable of the functions of the Virginia Cooperative Extension Service?

6. What is the relationship between the amount of knowledge flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service and their attitudes toward the Virginia Cooperative Extension Service?

7. What is the relationship between the degree of participation in the Virginia Cooperative Extension Service programs and the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service?

8. What are the attitudes of young, middle-aged and old flue-cured tobacco producers toward the Virginia Cooperative Extension Service?

IMPORTANCE OF THE STUDY

Flue-cured tobacco producers were selected for this study because of the value of flue-cured tobacco to the Virginia economy. Tobacco is the number one field crop in terms of value. According to the Virginia Crop Reporting Service (1980), the farm value of tobacco was approxi-
mately $153 million in 1979 of which flue-cured tobacco accounted for $127.3 million. Moreover, flue-cured tobacco represented 77 percent of all tobacco grown in Virginia in 1979.

Most of the previous studies conducted which pertained to the Virginia Cooperative Extension Service dealt primarily with the clients outside of the agricultural sector. Perkins (1979) studied the perceptions of city councilmen, Allen (1967) surveyed Boards of Supervisors, Gregory (1967) surveyed garden club members, and Grubb (1966) conducted a study of the perceptions of home management committee members. Additionally, the Virginia Joint Legislative Audit and Review Commission (1979) secured information primarily from city council members, County Boards of Supervisors, and Cooperative Extension Service employees in their audit of the Virginia Cooperative Extension Service.

In a home management committee member study, it was pointed out that research was needed regarding: "What do other groups or clientele know about the Cooperative Extension Service" (Grubb, 1966, p. 69). Allen (1967) stated that the following was needed:

A perception study involving farm families, including the part-time, small, and commercial farmer to determine if any significant differences exist between these groups. (p. 78)

This study was influenced by Grubb and Allen. Furthermore, this study provided valuable information relative to the attitudes of flue-cured tobacco producers toward the Virginia Cooperative Extension Service. As a result of this study, Virginia Cooperative Extension Service employees were made aware of how a selected agricultural clien-
tele viewed Extension in meeting their educational needs. Moreover, this study provided Virginia Cooperative Extension Service staffs with helpful information for developing more responsive programs to meet the needs of their clientele.

LIMITATIONS

This study was limited to flue-cured tobacco producers in ten counties in Virginia. It included counties that were located mainly in East Central and West Central Extension Districts. In addition, one county in Southeast Extension District was included in the study. The aforementioned Extension Districts were selected because they represented the locale where most of the flue-cured tobacco was grown in Virginia. Findings of this study were generalizable only to the producers in the ten counties surveyed.

DEFINITION OF TERMS

Attitude -- The expression of an individual's feelings and beliefs toward objects, ideas, and people. In this study, attitude refers to the feelings and beliefs flue-cured tobacco producers have toward the Virginia Cooperative Extension Service programs and professional staff.
Small flue-cured tobacco producer -- is one who has a tobacco acreage allotment below or equal to the median acreage of nine acres for the respondents in the study.

Large flue-cured tobacco producer -- is one who has a tobacco acreage allotment above the median acreage of nine acres for the respondents in the study.

Knowledge -- is indicative of the facts that flue-cured tobacco producers possess regarding the Virginia Cooperative Extension Service. Also, it is how well they understand the functions of the Virginia Cooperative Extension Service as an informal education organization.

Degree of participation -- is the frequency with which flue-cured tobacco producers come in contact or utilize the services of the Virginia Cooperative Extension Service by attending meetings, listening to radio programs, reading bulletins and newsletters, reading news articles, telephoning the county Extension office, visiting the county Extension office, and farm visits made by the Extension agents.

Extension Agent -- is a professional employed by the Virginia Cooperative Extension Service to plan, implement, and evaluate Extension education programs based on the identified needs of the people in a given county.

Flue-cured tobacco -- one of the chief field crops grown in Virginia. The leaves of flue-cured tobacco are stripped from the stalk and then dried by a given source of heat.
Young tobacco producer -- is a farmer between 19 and 35 years of age.
Middle-aged tobacco producer -- is a farmer between 36 and 55 years of age.
Old tobacco producer -- is a farmer who is 56 years of age or older.

Virginia Cooperative Extension Service Programs -- Educational meetings and activities initiated or coordinated by the local Extension agent.

Cooperative Extension Service -- An educational organization created by the Smith-Lever Act in 1914 with the major purpose of providing informal education to the people of the United States in areas of agriculture, home economics, and related subjects.

ORGANIZATION OF THE STUDY

Chapter 1 includes the background and statement of the problem, research questions to be answered, importance of the study, limitations of the study, and definition of terms.

Chapter 2 presents a review of literature relating to attitudes toward the Cooperative Extension Service, degree of participation in Cooperative Extension Service programs, knowledge clients have regarding the functions of the Cooperative Extension Service, and services provided small and large farmers by the Cooperative Extension Service. In addition, this chapter presents a review of the literature that relates to attitudes and attitude measurement.
Chapter 3 includes a description of the research methodology used in the study, population and sample, research design, instrumentation, data collection, statistical tests used in the study, and procedures for analyzing the data.

Chapter 4 provides an analysis and interpretation of the data.

Chapter 5 presents a summary of the data, findings, conclusions, discussion, and recommendations.

SUMMARY OF CHAPTER

This chapter presented a description of the problem addressed in this study, the importance of the study, limitations of the study, and definition of terms which were frequently used in the study.

There tends to be a general lack of knowledge regarding the attitudes of clients in the agricultural sector towards the Cooperative Extension Service. Therefore, this study was designed to investigate the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service. Additionally, this study assessed the knowledge flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service and their degree of participation in the agency's programs.
Chapter 2

REVIEW OF LITERATURE

INTRODUCTION

This chapter presents an examination of the literature closely related to the attitudes of groups toward the Cooperative Extension Service program and its professional staff. Furthermore, the writer presents a description of the literature related to the degree of participation in the Cooperative Extension Service programs, knowledge clients have regarding the functions of the Cooperative Extension Service, and services provided both small and large farmers by the Cooperative Extension Service. In addition, this chapter presents an overview of the literature related to attitudes and attitude measurement.

ATTITUDES TOWARD THE COOPERATIVE EXTENSION SERVICE

The available literature indicated there were several studies relating to attitudes of selected groups toward the Cooperative Extension Service; however, there were no studies available regarding the attitudes of flue-cured tobacco producers.
Gross (1977) conducted a study of the attitudes of farmers toward the Agricultural Extension Service in Clinton County, Missouri. Gross found that the younger and older farmers had a more positive attitude toward the Cooperative Extension Service than the middle-aged farmers.

Slocum (1969) indicated that many leading farmers in the state of Washington felt that the Cooperative Extension Service could not meet their needs. Slocum continued by saying that a prominent farmer indicated that the Cooperative Extension Service was more suitable for underdeveloped countries.

In a study of dairy farmers in New York State, Awa and Crowder (1978) found that 37.7 percent of the farmers depended upon commercial dealers for information and 35.5 percent depended upon agents of the Cooperative Extension Service. Awa and Crowder also found that the respondents had a desire to talk with another farmer who had tried a new practice before venturing to invest in it. Moreover, the Cooperative Extension Service agent and commercial dealers were viewed as secondary sources to be used only at the stage of decision confirmation. However, Extension agents were considered to be unbiased toward products and practices recommended to farmers. "In general, our findings indicate a tendency for farmers to look to other sources for initial information with the Extension agent assuming an intermediate role" (Awa and Crowder, 1978, p. 20).
Burns (1969), in a study of the attitudes of clientele toward the Cooperative Extension Service in Missouri, revealed that 41 percent of the respondents had favorable attitudes toward monthly newsletters as a source of information. Awa and Crowder (1978) had similar findings in their study of dairy farmers. Awa and Crowder reported that 60.4 percent of the dairy farmers viewed printed media as the most effective method to ascertain information from the Cooperative Extension Service.

According to Burns (1969), 51 percent of the respondents in his attitudinal study viewed the Cooperative Extension Service meetings as a valuable source to receive information. Moreover, Burns' data suggested that the radio programs conducted by the Cooperative Extension Service were considered to be a less valuable source for information. Burns (1969) said:

Radio in general does not appear to receive much more than an "average" rating as a source of Extension information. Nearly seventy percent (68.7) indicated that the radio was a "very unimportant" to "average" source. (p. 25)

Additionally, 25 percent of the respondents in Burns' study felt that the information in general provided by the Cooperative Extension Service was irrelevant. In other words, the farmers were of the opinion that a great deal of the information was old when they received it.

It was pointed out that "to be more effective in helping people help themselves, Extension needs a broad base and highly qualified professional staff at each level of the delivery system" (Reisbeck & Reynolds, 1976, p. 55).
Attitudes Toward the Virginia Cooperative Extension Service

The Virginia Joint Legislative Audit and Review Commission (1979), in a survey of city council members and local Boards of Supervisors, found that respondents had a positive attitude toward Virginia Cooperative Extension Service programs. A questionnaire was used to ask the local government officials to rank the contributions of the Virginia Cooperative Extension Service on a scale of 1 (low) to 4 (high). "The 71 respondents to the survey gave extension an average score of 3.4 on the four-point scale" (Virginia Joint Legislative Audit and Review Commission, 1979, p. 20).

According to the Virginia Joint Legislative Audit and Review Commission (1979), a similar study of local government officials' attitudes toward the Virginia Cooperative Extension Service was conducted as a part of the 1978 Virginia Department of Agriculture and Consumer Services study of rural areas. This study reported:

Ninety-three officials from eight jurisdictions were interviewed and asked to rate the assistance provided by seven sources of information, of which three sources--community colleges, universities, and extension--were based in educational institutions. Extension was rated favorably by 93 percent of the officials, compared to 65 percent for community colleges and 58 percent for universities. (p. 20)

The Virginia Joint Legislative Audit and Review Commission (1979) further concluded:

While most individuals appear to support the concept of extension, recent program expansion has led to some concern, both within the program and among state officials and the general public, about the proper mission of extension. (p. 1)
Not all clientele of the Virginia Cooperative Extension Service, according to the Commission, are satisfied with the manner in which the expansion of programs has occurred. The Virginia Joint Legislative Audit and Review Commission (1979) pointed out that:

Questions have been raised concerning extension "trying to be all things to all people", particularly when expansion seems to weaken more traditional programs where extension has built an impressive 60-year record in Virginia. (p. 18)

The following are some of the activities of the Cooperative Extension Service which the Commission (1979) considered had undergone expansion.

Instructions in Arts and Crafts
Creative and Performing Arts
Health and Rehabilitation
Manpower Development
Mental and Emotional Health
Child Care and Development
Development of Tourism and Industry

The Virginia Joint Legislative Audit and Review Commission (1979) also stated:

Not all extension personnel agree with the changing scope and direction of extension. Concern about the present is, not unexpectedly, most concentrated among faculty members in the College of Agriculture and extension agents working primarily in the agriculture and natural resource area. (p. 32)

Allen (1967), in his study of Virginia County Board of Supervisors reported:
One member said he had heard members question whether the Extension Service was really worth the money. Other members indicated Extension agents have not worked enough toward improving marketing facilities for crops. (p. 50)

In addition, Allen indicated that the Virginia Cooperative Extension Service agents were criticized for devoting a large percentage of their time to certain farmers, particularly those farming in the field of the agent's training or personal interest. Moreover, Allen revealed that the disadvantaged clients were not benefitting from the programs implemented by the Virginia Cooperative Extension Service.

Francis (1969), in a survey of 54 milk producers in Wythe County, Virginia, found that manufactured milk producers ranked the Virginia Cooperative Extension Service twelfth out of twenty possible sources for agricultural information. However, Grade A milk producers ranked the Virginia Cooperative Extension Service as the second most important source of information. Both Grade A and Manufactured milk producers according to Francis (1969), considered farm magazines to be the most desirable source of information. Additionally, Francis reported that the dairy producers rated the newspaper articles and radio programs prepared by the Virginia Cooperative Extension Service as "helpful" or "very helpful."

The literature indicates that the attitudes of groups toward the Virginia Cooperative Extension Service differ substantially. However, there were only a couple of studies available concerning the attitudes of specific agricultural groups toward the Virginia Cooperative Extension Service. This would tend to suggest a need to more exactly deter-
mine the attitudes of agricultural groups toward the Virginia Cooperative Extension Service.

**Attitudes of Different Age Groups Toward the Cooperative Extension Service**

Gross (1977) pointed out that age is a characteristic that the Cooperative Extension Service professionals are concerned with because their audiences are composed of all age groups. In his study of farmers' attitudes toward the Cooperative Extension Service in Missouri, Gross found that the younger farmers (26-35) and the older farmers (56 and over) had attitude scores higher than the middle-aged farmers (36-55). It was Gross' contention that this difference could have been due partially to Extension not serving all age groups equally.

In a study of the attitudes of Extension Council members in Illinois, Oberle (1970) investigated the relationship of age and other personal-social characteristics to high and low attitude scores. It was concluded that none of the personal characteristics were significantly related to the attitude scores of the respondents. Oberle's (1970) findings were different from Gross (1977) who concluded the middle-aged farmers had lower attitudinal scores.

Awa and Crowder (1978), in a study of dairy farmers in Nebraska, indicated that most of their respondents were middle-aged. The authors reported that the farmers had a tendency to rely more on commercial dealers for information than the Extension agents.
Lewis (1971) conducted a study in North Carolina of the personal and situational variables that related to participation of low socio-economic status adults in educational programs. It was reported that "young adults were found to have the greatest level of interest, and as age increased the level of interest decreased" (Lewis, 1971, p. 25). It was the 18 to 39 years of age group that possessed the most interest in participating in educational programs.

Lutz, Frerichs, and Lewis (1968) concluded that farmers who attended workshops were younger than the typical farmer. More than one-third of the farmers were under 35 years of age. Lewis' (1971) findings were congruent with Lutz's et al. conclusions.

The literature indicated that age was a characteristic that should be considered when investigating the attitudes of clients toward the Cooperative Extension Service. However, the literature was inconclusive as to the association between age and attitudes toward the Cooperative Extension Service.

ATTITUDES TOWARD THE COOPERATIVE EXTENSION SERVICE STAFF

The United States Department of Agriculture Evaluation of the Cooperative Extension Service Programs (1980) pointed out that the basic unit of the Cooperative Extension Service is the local Extension office where the Extension agent is housed. Since most of the Cooperative
Extension Service programs are implemented by an Extension agent at the local level, Decker (1979) indicated that the image of the agent may be an aid or barrier to Cooperative Extension Service programs. "An individual's (or group's) image of an agent is essentially the aggregate of his/her (or their) attitudes about the perceptions of the agent" (Decker, 1979, p. 6). In addition, Decker pointed out that the Cooperative Extension Service professionals should be familiar with the attitudes of their clients in order to develop an acceptable image.

According to Diesslin and Scott (1976) the bachelor's degree is still most common among Extension agents at the local level, but the number with master's degrees has increased substantially. Strother (1977) pointed out:

In times gone by, Extension educators lived in a comparatively simple society serving a comparatively simple and clearly defined set of needs. In such a setting the Extension educator could dispense proven remedies to relatively few, relatively homogeneous sets of clientele groups. (p. 5)

Diesslin and Scott (1976) stated: "The increased specialization associated with the commercialization of agriculture has resulted in the need for more highly trained and specialized Extension staff" (p. 141).

The United States Department of Agriculture Evaluation of Cooperative Extension Service Programs (1980) reported the following:

Certain problems now addressed by Extension require more specialization. Many commercial farmers want contact with the county agent but often go directly to the campus specialist for help. County agents continue to perform an important referral function. (p. xii)
Strother (1977) said:

Due to this change in the nature and complexity of the job, there is a growing recognition that the helpful all-things-to-all-people kind of generalist is being replaced by a group of knowledgeable professionals with a full-time commitment to the application of the specialized knowledge and skills to a wide range of society's problems. In an increasingly complex society, the demand for professional quality of work and for high professional standards of performance becomes the reason for our being in business. The delivery of a high level of competence is the principal public justification. (p. 5)

Strother continued by pointing out that the adult educator must be capable of mastering the tools of his trade and at some time utilize those skills in conveying meaning in the most effective manner. "The art of using the right combination of methods and media to accomplish the specific educational goal we have in mind is at least as difficult as the art of the actor or the painter or musician" (Strother, 1977, p. 8).

Oberle's (1970) study of Cooperative Extension Service County Council Members in Illinois revealed that the respondents felt the Cooperative Extension Service staff members needed more education in the social sciences. Fleming (1981) stated: "An Extension Agent needs communication skills, both to develop programs and let the public know about them" (p. 28).

Kearl and Copeland (1959) stated:

The Extension staff of the future will have more specialized personnel at every level. Many counties or geographic areas will have specialists/agents working with one kind of farming, one aspect of marketing--or some other special interest. (p. 46)

Over the years, county agents have become more specialized. In recent years, some agents in agriculture and resource development have been assigned more than one county, and the area concept has developed. In the counties with larger staffs, an agent may be responsible for only a single crop or an area of work. (p. 22)

Diesslin and Scott (1976) concluded that as agriculture becomes more specialized, the Cooperative Extension Service will adapt to it by requiring more advanced professional training.

Breimyer (1976) said:

Because access to knowledge is essential for the traditional independent farmer, the effectiveness of Extension's performance will continue to affect the ability of that farmer and his kind of farming to survive. (p. 199)

The United States Department of Agriculture Evaluation of Cooperative Extension Programs (1980) indicated that a farm background and training in agriculture were required for a Cooperative Extension Service employee for many years; however, the farm background is no longer required in most positions.

DEGREE OF PARTICIPATION IN THE COOPERATIVE EXTENSION SERVICE PROGRAMS

Agriculture has undergone many changes during the last few decades. "Thus, it is important to look at current agricultural Extension usage
patterns to see if they've undergone change" (Nolan and Lasley, 1979, p. 22).

Leagans (1964) stated:

Programs of "free choice participation" are successful only to the extent that they focus on and help meet recognized personal, family, group, or community needs. Since Extension audiences are free to participate or not, programs offered constitute a ballot for casting a vote. When people participate they vote favorably; when they do not participate, they vote unfavorably. They determine their vote on the basis of an estimate of the probable value participation may give them. (p. 89)

Participating in programs conducted by the Cooperative Extension Service, according to Leagans, is on the basis of needs as the people perceive them.

The United States Department of Agriculture Evaluation of Cooperative Extension Programs (1980), in a statement very similar to Leagans, said:

In an informal education agency such as the Cooperative Extension Service where participation is voluntary, unless an activity is believed to be useful, participants do not come back for more. (p. 7)

Burns (1969) suggested that the decision of whether to participate or not participate in programs offered by the Cooperative Extension Service depends upon how the clients perceive the organization.

Decker (1979) concluded:

If your image (and that of your program) is favorable, clientele are likely to: (1) attend programs (in the case of program participants), (2) offer their service to aid in program implementation (volunteer leaders)--Agents with a poor image can expect low participation in their programs. (p. 6).
Prawl and Jorns (1976) in describing a Cooperative Extension Service evaluation of a county program in Kansas stated:

More than half of those responding said Extension should do a better job of publicizing their educational program so many people could take advantage of it. (p. 11)

Coward (1978) revealed similar findings to those of Prawl and Jorns (1976) in a survey to gain a better understanding of why people attend, or do not attend, programs sponsored by the Cooperative Extension Service. Coward indicated that approximately 75 percent of the respondents offered the following reasons for not participating in Cooperative Extension Service programs:

1. I don't know when and where Extension programs are offered in my community (28.3%)
2. I've never seen or heard any publicity on what type of programs are offered by Extension (26.7%)
3. I don't understand what Extension is all about (19.1%) (p. 12)

Moreover, the study revealed that there were two main reasons for client participation in offerings of the Cooperative Extension Service. These were identified as: "Extension is an educational program and the respondents preferred those choices that most reflected that educational intent" (Coward, 1978, p. 13).

Adkins (1981) examined the State legislators' perceptions of the Maryland Cooperative Extension Service. Among his findings were "Extension mass media efforts don't seem to effectively generate legislative involvement or recognition of Extension programs" (p. 8). Adkins
indicated that 54 percent of the respondents had not read an Extension news article, 69 percent had never watched a Cooperative Extension Service television program, and 72 percent had never received a newsletter from the Maryland Cooperative Extension Service; however, Adkins found that nearly 50 percent of the legislators had telephoned a Cooperative Extension Service office, but only a few legislators had visited an office or been contacted by an Extension agent.

In a study of 3,000 farmers in Missouri, Nolan and Lasley (1979) determined the extent and nature of farmers' contact with the Missouri Cooperative Extension Service through the use of the following questions:

1. Frequency of use of bulletins or other printed information designed to help with the farm operation.
2. Frequency of seeking information from the County Extension office.
3. Frequency of attendance at Extension meetings where agricultural information was presented.
4. Frequency of visits of Extension specialists to respondent's farm operations. (p. 22)

Nolan and Lasley indicated that use of Agricultural Extension publications tended to vary according to the age of the operator, the amount of land, and the type of farming operation. They found that 35 percent of the respondents had not read any of the agricultural publications, 33 percent had read publications once or twice, and 32 percent had read agricultural Extension publications more than three times.

In assessing the number of times clients visited the county Extension office during a one-year interval, Nolan and Lasley (1979)
reported that 45 percent had not been to the Cooperative Extension Service office during the past year, 35 percent had visited the office once or twice, and 20 percent had visited the office three or more times.

Additionally, Nolan and Lasley found that the Missouri Cooperative Extension Service meetings were a less frequent source of information for farmers than either publications or visits to the Cooperative Extension Service office. Their study found that 56 percent of the farmers in the study had not attended a meeting conducted by the Cooperative Extension Service during the past year, 30 percent had attended one or two meetings, and only 14 percent had attended three or more meetings during the past year.

According to Nolan and Lasley (1979):

The characteristics most strongly related to attendance at meetings was farm size--larger farmers reported a higher frequency of attendance than smaller farmers. For example, 35% of the large farmers attended 3 or more meetings as compared with 6% of the small farmers. At the other extreme, only 29% of the large farmers attended no meetings versus 71% of the small farmers. (p. 24)

Nolan and Lasley found that farm visits by Extension specialists was the least source of contact with farmers. Specifically, their study found that 77 percent of the farmers reporting indicated they had not been visited by an Extension specialist during the past year. However, 16 percent of the farmers indicated they had been visited once or twice, and only 7 percent had been visited three or more times. "Those visited most often were the larger farmers" (Nolan and Lasley, 1979, p. 25).
Gross (1977) conducted a study with farmers to determine if a relationship existed between the attitude scores and type and frequency of contact with the Missouri Cooperative Extension Service. "As might be expected, the more frequent the contact with Extension, the higher the attitude score" (Gross, 1977, p. 17). In addition, Gross (1977) concluded:

Slightly higher scores were made by farmers reporting meetings, mass media, and mail as the type of contact. Attitude scores for farmers reporting office visits and telephone contact were lower. (p. 18)

Gross suggested that a possible explanation for the higher attitude scores for the meetings, mass media, and mail contacts might have been due to farmers being confident that the information would be available. However, it was Gross's belief that with an office visit or telephone call the staff member is often out of the office and the desired information is not readily acquired. This, according to Gross, could have accounted for the lower attitude scores.

Robinson (1981) investigated the relationships between selected production practices and the contact burley tobacco producers had with the Tennessee Cooperative Extension Service. Robinson concluded that the burley tobacco producers who were using recommended production practices reported more contacts with agents of the Tennessee Extension Service than the producers who were not using recommended production practices.

Lutz et al. (1968), in a study of Nebraska farmers who participated in an indepth workshop, revealed the following:
Nearly half of all Nebraska farmers (48.6 percent) sell less than $10,000 worth of products per year. However, less than one-fourth of the workshop participants (23.2 percent) were in this category. Commercial farmers with sales greater than $10,000 make up 51.4 percent of the farmers in the state; however, nearly 76 percent of the workshop participants were in this category. Farmers with sales over $40,000 were nearly twice as common (11.9 percent) in the workshop group as among the farm population as a whole. (pp. 110-111)

Warner and Christenson (1981) conducted a survey of registered voters in Kentucky. They found that one-fourth of the respondents or a member of their family had utilized or requested the services of an Extension agent during the past year.

Clients participate in programs of the Cooperative Extension Service when the programs are based on their perceived needs. According to the literature, free choice participation programs are successful only when they meet the public needs.

**KNOWLEDGE CLIENTS HAVE REGARDING THE FUNCTIONS OF THE COOPERATIVE EXTENSION SERVICE**

There are many definitions for the term knowledge. However, the following definition offered by Russell influenced the definition that was used for this study:

> He may . . . say that what is known consists, first of certain matters of fact and certain principles of inference, neither of which stands in need of extraneous evidence, and secondly, of all that can be ascertained by applying the principle of inference to the matters of fact are those given in perception and memory, while the principles of inference are those of deductive and inductive logic. (p. 155)
In this study, facts regarding the Virginia Cooperative Extension Service programs and activities were used to measure the knowledge flue-cured tobacco producers have of the Virginia Cooperative Extension Service. Boice (1968) in a study of knowledge of Extension lay leaders and members in New York said:

In using "facts" as a basis for measuring knowledge, the knowledge test is designed to obtain measurement of what the members report to be correct—their knowledge of what are the facts including: that which is known by the respondent and is true; that which is known and is false; and that which is not known. (p. 12)

Allen (1967) stated:

Extension agents need to do a more effective job informing the people about their accomplishments, therefore, a reevaluation of the present methods of communicating to the public the purpose and operational functions of the organization is in order. All channels of communication need to be utilized to create in the minds of all people a better understanding of the Cooperative Extension Service. (p. 76)

The Joint United States Department of Agriculture Extension Committee (1968) reported that in serving the poor and other groups, the Cooperative Extension Service is concerned with providing the motivation needed to encourage participation by groups who have not been motivated to utilize the services offered by the agency. "Lack of motivation, in many instances, has been due to a lack of knowledge about the opportunity to participate" (Joint U.S. Dept. of Agriculture Extension Committee, 1968, p. 14).

Lawson (1959), who studied commercial cotton farmers in California, concluded that only a small percentage of the commercial cotton farmers
fully understood the organization of the California Agricultural Extension Service. Grubb (1966) reported similar conclusions to Lawson in a study of home management members. Grubb found that home management committee members did not understand the relationship of the Virginia Cooperative Extension Service with other agencies and organizations. Grubb stated: "Extension agents need to create among clientele and others a better understanding of the Cooperative Extension Service and the relationship it has with other agencies and organizations" (p. 68).

Douglah and Dopp (1966) conducted a study of the perceptions that businessmen (including agribusinessmen) have of the Wisconsin Cooperative Extension Service. They found that 45 percent of the respondents were not aware of services available from the University of Wisconsin Extension Specialist. Moreover, 50 percent of the businessmen did know that the local staff of the Cooperative Extension Service had access to the resources of the university.

Gregory (1967) indicated that more than one-third of the Virginia garden club members surveyed believed the suppression of forest fires to be a responsibility of the Virginia Cooperative Extension Service. According to Gregory (1967), "Extension is not effective in its public relations and image building as the total population possesses only limited knowledge of its activities and programs" (p. 63).

Prawl and Jorn (1976) found that 61 percent of the persons randomly selected and interviewed by telephone had heard of the Cooperative Extension Service; however, 96 percent of the persons in the same locale
responding to a mail questionnaire indicated they had heard of the Cooperative Extension Service. Prawl and Jorn (1976) said:

We thought many people had the impression that Extension works only, or at least primarily, with farmers. However, an overwhelming 82% of those questioned by telephone felt Extension tries to meet the needs of both urban and rural citizens. Ten percent said farmers were given preference while eight percent said they didn't know. (p. 14)

Coward (1978) concluded:

The challenge seems to be creating a better understanding of Extension. Extension must publicize its product! We must make the public aware of the resources available through extension. (p. 13)

Coward pointed out that no educator wanted to invest an enormous amount of time planning and implementing a community program and later discover that the public is not aware of the agency's purpose and function.

SERVICES PROVIDED SMALL AND LARGE FARMERS

BY THE COOPERATIVE EXTENSION SERVICE

The structure of agriculture has changed over the years. The total number of farms, according to the United States Department of Agriculture Evaluation report (1980), declined from approximately 3.0 million in 1969 to 2.7 million in 1977. However, farms have become larger. The United States Department of Agriculture Evaluation of Cooperative Extension Programs (1980) pointed out:

Small farms (gross sales below 20,000 dollars) constituted 79.9 percent of the farms in 1969, and 65.4 percent in 1974 as some small farm operators have left farming and others have increased their sales. The number of large size commercial farms has increased. (p. 44)
The United States Department of Agriculture Evaluation report went on to say that although the number of farms has decreased there are a number of new and often young people entering the farming business. "Some have neither a farm background nor training and are in special need for educational assistance" (United States Department of Agriculture, 1980, p. 44).

According to Nolan and Lasley (1979):

If current U.S. trends continue, a relatively few large commercial farm operations will produce a high proportion of the nation's farm output, and a parallel system of smaller operations which, while contributing relatively little to "production" will constitute the majority of farms. (p. 21)

The United States Department of Agriculture Evaluation of Cooperative Extension Programs (1980) suggested:

Because the Extension system is centralized and its objectives are general, it is not easy to agree on the most appropriate clientele mix. A longstanding, if implied, objective of Extension has been to improve the efficiency of Agriculture. Another objective gaining in importance is simply helping individuals who need help the most. If the former is emphasized, Extension would work primarily with commercial farmers who contribute the most to agricultural production. If the latter is emphasized, small, limited resource farmers and disadvantaged people would receive greater attention (p. xii)

Paul (1970) concluded that "Increased complexity in agriculture, greater specialization, and more stress on economics and competition are bringing about changes that affect extension" (p. 7). Paul went on to say that a couple or two decades ago the farm size and investment varied
little from one farm to the next. The problem that most farmers encountered were similar and lack the diversity of today's problems.

Warner and Christenson (1981) pointed out that the Cooperative Extension Service clientele has changed over the years when they said:

In response, State Extension Services have tried to alter their programs and reach audiences with specialized needs such as small farm operators, racial minorities, the elderly, rural nonfarm residents, and displaced homemakers. Thus, Extension has found itself pulled in two directions to reach out to groups of individuals with specialized needs and, at the same time, continue to serve traditional farm and rural audiences. (pp. 22-28)

Oberle's (1970) study of the Cooperative Extension Service Council members indicated that more than 90 percent of the Council members felt the Illinois Cooperative Extension Service programs were not geared more to the larger farmer than to the smaller. However, the majority of the respondents were operators of large farms. Slocum (1969) revealed that agricultural agents in most states usually work with the more prosperous and better educated farmers. Slocum went on to say that only a small number of poor farmers utilize the services offered by the Cooperative Extension Service.

It has been suggested that "Extension is not relating itself to the total socio-economic picture as it establishes policy and program objectives for the future" (Burns, 1969, p. 3). Warner and Christenson (1981), in a study of the Kentucky Cooperative Extension Service, reported:

In recent years, criticism of Extension has been that it doesn't adequately serve small farmers. In Kentucky, a lower proportion of small farmers were
users than was indicated among non-users. However, it is inaccurate to conclude that Extension isn't serving small farmers. In fact, nearly two-thirds of the users reported farming less than 180 acres. Therefore, one must conclude that while Extension is helping large commercial farms, it is also working with a considerably larger number of small farm operations. (p. 27)

Orden and Smith (1978) stated: "In theory, extension programs are freely available to everyone; however, the extension service is frequently criticized for failing to work with small farmers, particularly those with few resources" (p. 29). Furthermore, Orden and Smith indicated that the Cooperative Extension Service in the past has worked with the receptive farmers on the basis that the information and knowledge would eventually filter down to the other farmers. "By focusing on innovators, the large hard core group is overlooked" (Paul, 1970, p. 8).

Ragland (1963), as cited by Orden and Smith (1978), believes:

Extension does not work with farmers with limited resources for several reasons, including the fact that "there has not been much status in working with poor people", the desire of the agents to "feel a sense of personal worth from seeing dramatic results", and the need for the agents to "maintain a relatively high status in the community," and in the opinion of the County Court which authorizes and partly funds the local Extension office. (p. 29)

The United States Department of Agriculture Evaluation of the Cooperative Extension Service (1980) indicated that the agriculture and natural resources program of the Cooperative Extension Service reached approximately two-thirds of the agricultural producers by means of direct contact in 1978. "The program reached a larger percentage of the commercial-sized farming operations than the small-sized farms" (United
In addition, it was reported that Extension agents devoted approximately 55 percent of their time to the agricultural sector; however, 34 percent of Extension agents' work was with larger farmers (with more than $20,000 sales) and 21 percent with small farmers.

Paul (1970) said: "A major 'beef' of the lower- and middle-economic farmer is the dearth of coordinated operational research data applicable to him. He has questions that are not being answered" (p. 9). Moreover, Paul pointed out that due to the variation of the farmers in a given community the information provided to one farmer may not be relevant to another farmer.

Nolan and Lasley (1979) supported Paul (1970) when they argued as follows:

Expertise should be marshaled to adequately address the problems of large and small producers. To date, this knowledge has clearly been slanted toward the former. In a similar vein, the administrators of State Extension organizations should develop broadened systems of evaluative criteria that would encourage local specialists to assess their situation and make programmatic adjustments. (p. 26)

The farmer's acceptance of the information available from the Cooperative Extension Service, as pointed out by Paul (1970), will depend on its usefulness to his operation and available resources.

Allen (1967) in a study of Boards of Supervisors, found that the respondents felt Extension agents had a tendency to work more with larger farmers than the smaller farmers. "Agents need to work more with smaller farmers and continue his present work with large farmers"
According to Perkins (1978), the Virginia Cooperative Extension Service priorities should be on agricultural related groups and lower income adult groups. The United States Department of Agriculture Evaluation of Cooperative Extension Programs (1980) provided an adequate summary of the Cooperative Extension Service work with small and large farmers when it revealed that the medium and large farmers have more contact with the Cooperative Extension Service than the small farmers; moreover, it has only been recently that the Cooperative Extension Service has made a concerted effort to develop and implement programs for small farmers.

ATTITUDE DEFINED

The literature contained numerous definitions for attitudes. Clearly there exists, according to Fishbein and Ajzen (1975), several viewpoints concerning the attitude concept and this has generated a multitude of definitions of attitudes. This situation would tend to suggest a need to review some of the definitions offered by the literature.

Chisman (1976) stated the following:

Psychologists generally define attitudes as evaluative tendencies and often describe an individual's attitude by saying he or she tends to like or dislike, approve or disprove, of certain objects.

(p. xii)

"A reasonable assumption is that having a certain attitude towards an object will predispose its possessor to behave in a certain way toward
that object" (Marlowe, 1971, p. 360). Also, it was Marlowe's contention that if you know what the attitude is, you can predict one's behavior. However, Marlowe further revealed that the relationship between attitude and behavior is not a perfect one.

Allport (1968), one of the leading authorities in the field of attitudes, offered the following definition:

A mental and neural 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)

Dawes (1972) supported Allport by stating:

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. Moreover, they would generally agree that attitude involves some evaluative component—that is, affect is for or against, preparedness is to accept or to reject. (p. 16)

"Attitudes can be described as a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein & Ajzen, 1975, p. 6). The authors continued to say that attitude is usually viewed as a hidden variable that is assumed to guide or influence behavior. Additionally, Fishbein and Ajzen revealed that attitude refers to a person's favorable or unfavorable evaluation of an object.

Horrocks (1964) established the following definition:

An attitude is an expression, by word or deed, of an individual's reaction toward or feeling about a person, a thing, or a situation. It represents the subjective sum of his fears, inclinations, wishes, prejudices, preconceived notions, ideas, and con-
victions. Attitudes result from the impact of the environment, past and present, acting upon the personality of an individual. (p. 678)

Horrocks further concluded that attitudes are representative of an individual's personality, and that attitudes are learned rather than inherited. Rokeach (1975) differing from Horrocks, argued that an attitude is an organization of beliefs that affects one's response toward a given object or situation.

Krech, Crutchfield, and Ballachey (1962) defined attitude in the following manner:

An enduring system of three components centering about a single object: the beliefs about the object—the cognitive component; the affect connected with the object—the feeling component; and the disposition to take action with respect to the object—the action tendency component. (p. 146)

As depicted, there are many definitions for the concept of attitudes. However, "it is generally agreed that they consist of thoughts, feelings, and action tendencies toward objects and events in the environment" (Marlowe, 1971, p. 329). Hutt, Isaacson, and Blum (1966) developed the following definition that was used for the frame of reference of this study:

By attitudes, we mean 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. (p. 401)

Hutt and associates continued by saying that people tend to approach and interact with objects toward which they have favorable attitudes and avoid objects for which they have unfavorable attitudes. This would
tend to suggest that persons with unfavorable attitudes toward the Virginia Cooperative Extension Service would fail to utilize the services offered by the agency.

ATTITUDE MEASUREMENT

Dawes (1972) indicated that attitudes are more easily measured than defined. Chisman (1976) stated:

Because attitudes are defined as tendencies to like or dislike objects and because psychologists believe that an individual's expressions of evaluation are generally consistent with his attitudes, the simplest way to determine what attitude an individual has toward an object would seemingly be to ask him to express his feelings about it. (p. 37)

Beggs and Lewis (1975) indicated that attitude instruments measure an individual's attitude toward a given object or situation.

Because attitudes are subjective and undoubtedly change very rapidly, the preparation of a paper and pencil instrument that measures attitude is difficult and often tedious. (p. 78)

Horrocks (1964) explained that the problem with the measurement of attitudes is that the investigator cannot measure attitudes directly, but only through behavior believed to be indicative of the attitudes that underlie it. Marlowe (1971) agreed with Horrocks when he said: "Attitudes explain the way an individual thinks, feels, and acts, but they can be measured only indirectly" (p. 331).

Ebel (1972) suggested that attitudes could be measured by observers through the use of rating scales. However, the difficulties of finding qualified observers and identifying suitable incidents to observe,
according to Ebel, tend to make measurement based on direct observation unattractive.

Horrocks (1964) further explained:

Thus, attitudes are typically measured by having an examinee express or react to opinions, choose between contrasting statements of stimulus objects, or react overtly when presented with various other standard test situations. (p. 678)

Attitude Scaling

Horrocks (1964) credited Allport and Hartman with one of the earliest attempts to measure attitudes. Ebel (1972) indicated that the instrument used to measure attitudes is referred to as attitude scales. It was Ebel's contention that many scales have been constructed to measure attitudes, but only the Thurstone and Likert scales are widely used.

Thurstone Scales

The Thurstone scales, according to Fishbein and Ajzen (1975) involve the collection of a large pool of statements related to some attitude object. The statements are given to a group of judges, representative of the population under study. Fishbein and Ajzen (1975) said:

Instead of being asked to agree or disagree with these times, the judges are required to indicate the amount of favorableness or unfavorableness toward the attitude object implied by agreement with the given item. More specifically, the judges sort each item into one of eleven categories that they are to consider at equal intervals along the evaluation dimension, ranging from "unfavorable" through
"neutral" to "favorable" toward the attitude object.
(p. 68)

Downie (1967) indicated that the main problem with the Thurstone-type scale is the vast amount of time required to construct it. Marlowe (1971) reiterated this point when he said: "recently it has been found that all this effort doesn't make the Thurstone scale that much better than the others, so it is used less often now than formerly" (p. 368).

Likert-type Scale

Likert-type scales are often referred to as summated rating scales. These scales include a set of items which are approximately equal in attitude or value loading. Isaac and Michael (1979) stated:

The subject responds with varying degrees of intensity on a scale ranging between extremes such as agree-disagree, like-dislikes, or accept-reject. The scores of the position responses for each of the separate scales are summed, or summed and averaged, to yield an individual's attitude score. (p. 100)

When compared to the Thurstone scale, the Likert-type scale is not difficult to construct. "Studies have shown correlation between the results obtained by both types of scales, measuring the same attitude to be high" (Downie, 1967, p. 406). Moreover, no judges are required to construct the scale. As a result, according to Downie, Likert scales are used more frequently than the Thurstone-type scales.

Jackson and Messick (1978) reported that items are the elements used to develop attitudinal scales. Numerous types of items have been used by researchers when assessing attitudes. However, "the most widely
In this study, the investigator used a Likert-type scale and opinion statements to assess the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service. "The use of opinion statements is tantamount to asking the respondent for a structured description of his verbal attitude" (Jackson and Messick, 1978, p. 733).

By assessing the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service, the agency obtained data useful in developing educational programs more relevant to the needs of the agricultural community. Additionally, the agency became more aware of how its programs are viewed in the agricultural sector.

SUMMARY OF CHAPTER

This chapter was designed to provide a review of the available literature pertaining to attitudes toward the Cooperative Extension Service programs and its professional staff, the degree of participation in the Cooperative Extension Service, knowledge clients have regarding the functions of the Cooperative Extension Service, and the services provided small and large farmers by the Cooperative Extension Service. In addition, this chapter presented an overview of the literature relative to attitudes and attitude measurement.
The literature indicated that several studies had been conducted concerning the attitudes of client groups toward the Cooperative Extension Service. However, there were no studies available concerning the attitudes of flue-cured tobacco producers toward the Cooperative Extension Service.

According to the literature, the attitudes of clients toward the Cooperative Extension Service are diverse. Several studies indicated that clients felt the Cooperative Extension Service could not meet their needs. However, other studies tended to suggest that the Cooperative Extension Service was viewed as a helpful organization. In general, farmers felt that information provided via printed media was useful. But, the radio programs presented by the Cooperative Extension Service were viewed as a less useful source of information.

The image of the Extension agent could be an aid or a barrier to programs offered by the Cooperative Extension Service. The increased specialization associated with the commercialization of agriculture has resulted in the need for more highly trained Extension agents. Since agriculture has become more specialized, the professional Extension staff must acquire more advanced professional training.

Participation in the Cooperative Extension Service programs, according to the literature, is based on whether the programs meet the needs of the clients. In addition, participation in programs conducted by the Cooperative Extension Service for farmers as clientele depends in part on their perceptions of the organization. Moreover, it was found that the Cooperative Extension Service meetings were a less frequent
source of information for farmers than publications or visits to the Extension office.

The literature suggested that clients were not highly knowledgeable of the Cooperative Extension Service. A large segment of the public was not aware of the services offered by the agency. Also, it was revealed that the Cooperative Extension Service needed to become more viable in its efforts to inform the public of its programs.

The structure of agriculture in the United States has changed during the last few decades. As a result, there are a few large commercial farmers producing the greatest portion of the nation's farm output. In 1974, approximately 80 percent of the farmers were classified as small farmers; however, the Cooperative Extension Service has been accused of not addressing the needs of the small farmers. The United States Department of Agriculture indicated that because of the Cooperative Extension Service objectives, which are general, it has not been easy to determine an appropriate clientele mix.

The literature offered several definitions for attitudes. However, the definition adapted for this study defined attitudes as the beliefs, feelings and action tendencies of an individual toward objects, ideas, and people. The instrument used to measure attitudes is referred to as attitude scales. The two most commonly used scales are Thurstone and Likert. The Likert scale was selected for this study.
Chapter 3

RESEARCH METHODOLOGY

This chapter describes the methodology for completing this study. Specifically, this chapter presents a description of the population and sample, research design, instrumentation, procedure for collecting data, and statistical analysis for analyzing the data.

POPULATION AND SAMPLE

Population

The population for this study was the 6,937 flue-cured tobacco producers in ten counties of Virginia. The counties included in this study are depicted in the shaded area of the Virginia Cooperative Extension Service map (Appendix A). The counties were selected because they represented the ten largest flue-cured tobacco producing counties in the state. According to the Virginia Crop Reporting Service (1980), 91 percent of the 52,000 acres of flue-cured tobacco harvested in Virginia was produced in the counties included in this study. Table 1 shows a summary of the number of acres of flue-cured tobacco harvested in 1979 for each county in the study.

The counties included in this study are contiguous and similar in their agricultural structure. Field crops and livestock were the main sources of farm income in these counties. The counties were located mainly in southside and central Virginia.
TABLE 1

Number of Acres of Flue-cured Tobacco
Harvested by County

<table>
<thead>
<tr>
<th>County</th>
<th>Number of Acres of Tobacco Harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunswick</td>
<td>3,470</td>
</tr>
<tr>
<td>Campbell</td>
<td>1,380</td>
</tr>
<tr>
<td>Charlotte</td>
<td>2,500</td>
</tr>
<tr>
<td>Dinwiddie</td>
<td>2,000</td>
</tr>
<tr>
<td>Franklin</td>
<td>1,840</td>
</tr>
<tr>
<td>Halifax</td>
<td>11,100</td>
</tr>
<tr>
<td>Lunenburg</td>
<td>3,140</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>6,890</td>
</tr>
<tr>
<td>Patrick</td>
<td>1,330</td>
</tr>
<tr>
<td>Pittsylvania</td>
<td>13,700</td>
</tr>
<tr>
<td>TOTAL</td>
<td>47,350</td>
</tr>
</tbody>
</table>
A mailing list of the 6,937 flue-cured tobacco producers was secured by requesting the names and addresses of the producers from the local Extension agent in each of the counties surveyed.

Sampling

The size of the population for this study dictated that a sample be drawn. Because the study included flue-cured tobacco producers from ten counties, the producers were stratified by county.

Ary, Jacobs, and Razavich (1979) said: "When the population consists of a number of subgroups or strata that may differ in the characteristic being studied, it is often desirable to use a form of sampling called stratified sampling" (p. 133).

Ary et al. (1979) also suggested:

One may either take equal numbers from each stratum or select in proportion to the size of the stratum in the population. This latter procedure is known as proportional stratified, that is the stratum is represented in the sample, in exact proportion to its frequency in the total population. (p. 133)

Stratified sampling, according to Ary et al., ensures that each stratum of the population is adequately represented in the sample.

Krejcie and Morgan (1970) suggested that a minimum sample size of 364 was appropriate for a population of 6,937. Downie and Heath (1959) indicated that the larger the sample the more confidence we could have in our results. Therefore, a sample size of 400 was selected for this study. A randomly selected proportional stratified sample was used to determine the number of flue-cured tobacco producers to be included in
the sample from each county. A summary of the composition of the sample for this study is included in Table 2.

After the sample was selected, the producers were grouped according to the median flue-cured tobacco acreage of the producers included in the sample. The producers with a tobacco acreage allotment of 9 acres or less were classified as small flue-cured tobacco producers. Those producers with 10 or more acres of flue-cured tobacco were identified as large flue-cured tobacco producers. Those producers having between 9 and 10 acres of flue-cured tobacco were rounded to fit the appropriate category.

RESEARCH DESIGN

A descriptive research design was utilized in this study. Ary et al. (1979) pointed out that descriptive research studies are concerned with determining the nature of a situation that exists at the time of the study. Furthermore, it was noted that descriptive research methods may be used for hypothesis testing.

Best (1977) provided the following elaboration of descriptive research: "It is concerned with conditions or relationships that exist, opinions that are going on, effects that are evident, or trends that are developing" (p. 116).

Specifically, a survey was used for this descriptive study. According to Ary et al. (1979):
TABLE 2

Composition of Tobacco Producers in Population and Sample by County

<table>
<thead>
<tr>
<th>County</th>
<th>No. in Population</th>
<th>No. in Sample</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunswick</td>
<td>408</td>
<td>24</td>
<td>6.0</td>
</tr>
<tr>
<td>Campbell</td>
<td>500</td>
<td>28</td>
<td>7.0</td>
</tr>
<tr>
<td>Charlotte</td>
<td>253</td>
<td>16</td>
<td>4.0</td>
</tr>
<tr>
<td>Dinwiddie</td>
<td>350</td>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>Franklin</td>
<td>419</td>
<td>24</td>
<td>6.0</td>
</tr>
<tr>
<td>Halifax</td>
<td>1650</td>
<td>96</td>
<td>24.0</td>
</tr>
<tr>
<td>Lunenburg</td>
<td>295</td>
<td>16</td>
<td>4.0</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>1002</td>
<td>56</td>
<td>14.0</td>
</tr>
<tr>
<td>Patrick</td>
<td>400</td>
<td>24</td>
<td>6.0</td>
</tr>
<tr>
<td>Pittsylvania</td>
<td>1660</td>
<td>96</td>
<td>24.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>6937</strong></td>
<td><strong>400</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Surveys can be used not only for describing existing conditions but also for comparing these conditions with predetermined criteria or for evaluating the effectiveness of programs. Surveys can also be used to study relationships or test hypotheses. (p. 133)

Kerlinger (1973) pointed out that:

Although the approach and techniques of survey research can be used on any set of objects that can be well defined, survey research focuses on people, vital facts of people, and their beliefs, opinions, attitudes, motivations, and behavior. (p. 411)

**INSTRUMENTATION**

Ary et al. (1979) reported that questionnaires are identified as structured or unstructured. "A structured questionnaire contains the questions and alternative answers to them" (Ary et al., 1979, p. 175). Borg (1963) reported: "open-form questions yield many unusable replies because of inadequate information or misinterpretation of the questions by the subjects" (p. 206). The instrument used in this study was basically a structured questionnaire.

**Construction of the Instrument**

The instrument for this study consisted of four parts. They were identified in the following manner:
Part 1 -- Background information

Part 2 -- Amount of knowledge flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service.

Part 3 -- Degree of participation in the Virginia Cooperative Extension Service programs.

Part 4 -- Opinions were used to determine the attitudes of flue-cured tobacco producers toward the Virginia Cooperative Extension Service's overall agricultural program, the flue-cured tobacco program and qualifications of the local professional staff.

Attitudes toward the overall agricultural program were measured by using items 1 through 16 of the opinion section of the instrument, attitudes toward the flue-cured tobacco program were measured with items 17 through 24, and attitudes toward the qualifications of the local professional staff were measured by using items 25 through 35. (Note Appendix G).

Knowledge Section

The knowledge flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service was measured by true-false items. The knowledge items represented both true and false statements. A value of 1 was assigned to the correct option and 0 was
assigned to the incorrect option. A total score was derived for each respondent by summing the total number of correct statements circled.

Degree of Participation

Degree of participation was based on the frequency flue-cured tobacco producers utilized the services of the Virginia Cooperative Extension Service. Producers were asked to indicate the number of actual participations in the Virginia Cooperative Extension Service programs during the past 12 months. Participation was based on the frequency with which the respondents came in contact with the Virginia Cooperative Extension Service by attending meetings, listening to radio programs, reading bulletins and newsletters, reading news articles, telephoning the county office, visiting the county office, and farm visits made by the Extension agent to provide information.

A total participation score for each respondent was derived by summing the number of contacts with the Virginia Cooperative Extension Service during the past year.

Attitude Section

A Likert-type scale was used to assess the attitudes of the flue-cured tobacco producers toward the Virginia Cooperative Extension Service programs and professional staff. Kerlinger (1973) indicated that a summated rating scale was the most desirable in behavioral research. Tuckman (1978) stated that a:
Likert scale is a five point scale in which the interval between each point on the scale is assumed to be equal. Since the analyses of data from Likert scales are usually based on summated scores across a number of items, the equal-interval assumption is workable. (p. 179)

Best (1977) pointed out that:

The Likert scaling technique assigns a scale value to each of the responses. Thus, the instrument yields a total score for each respondent, and discussion of each individual item, while possible, is not necessary. (p. 171)

Respondents were asked to respond on a five-point rating scale by circling the response that represented their feelings regarding each opinion statement. A positive attitude represented a value of 5 and a negative attitude represented a value of 1. The respondents selected from the following options:

SA--Strongly agree
A--Agree
U--Undecided
D--Disagree
SD--Strongly disagree

Both positive and negative attitudinal statements were included in the questionnaire. The negative statements were recorded to facilitate the scoring process. Furthermore, a total attitude score was computed for each tobacco producer included in the study.

Steps in Constructing the Instrument

After reviewing the available literature and consulting with the professionals of the Virginia Cooperative Extension Service, construction of the instrument was based on (1) development of an item
pool, (2) rough draft of the questionnaire, (3) evaluation of the questionnaire items by a panel of experts, (4) pilot testing, (5) determining content validity, (5) assessing reliability of the instrument, and (7) final draft of the questionnaire.

The panel of experts consisted of a group of professionals of the Virginia Cooperative Extension Service who were knowledgeable of the agricultural programs being conducted by the agency (See Appendix B). The panel of experts was responsible for evaluating the instrument items. The experts were advised to make appropriate comments and recommendations concerning the instrument items (See Appendix C). In addition, the panel was asked to rate the 35 opinion statements on a scale of one through eleven (See Appendix D). A 1 was used for extremely favorable statements, 6 was used for neutral statements and 11 for rejects. Based on the ratings of the items and suggestions from the panel of experts, items were revised or eliminated.

Pilot Testing

After the instrument was revised, it was pilot tested with 20 flue-cured tobacco producers in Henry County (See Appendix E). Producers in the pilot test group were not a part of the sample selected for the study, but possessed similar characteristics. Furthermore, the producers were not in one of the counties included in the final study.
Content Validity

The content validity of the instrument was determined by the panel of experts. Oppenheim (1966) pointed out that it was appropriate for a panel of experts to determine the content validity of a questionnaire.

Reliability

After pilot testing the instrument, the reliability of the instrument was determined by the use of SPSS, Subprogram--Reliability. "In general, the concept of reliability refers to how accurate, on the average, the estimate of the true score is in a population of objects to be measured" (Hull & Nie, 1979, p. 74).

The Cronbach Alpha method of reliability was used to assess the reliability of the instrument for this study. Beggs and Lewis (1975) supported this procedure when they 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)

A copy of the final instrument constructed for this study is in Appendix G. An Alpha reliability coefficient of .53 was determined for the items measuring knowledge, a .69 Alpha coefficient was computed for the participation items, and an Alpha coefficient of .90 was found for the opinion items.
DATA COLLECTION PROCEDURE

Flue-cured tobacco producers were mailed a survey instrument package. The package contained a letter of transmittal (see Appendix F) which stressed the importance of the study, the purpose of the study, and the confidentiality of the information provided. In addition, the package contained a stamped, self-addressed return envelope and the survey instrument (see Appendix G).

The instrument was coded for follow-up purposes. Two weeks after mailing the original questionnaire, a postcard (see Appendix H) was forwarded to nonrespondents to encourage them to return the instrument. After mailing a second copy of the questionnaire, a 10 percent random sample of the nonrespondents were contacted by telephone to obtain their opinions about the Virginia Cooperative Extension Service. The data were used to determine if differences existed between respondents and nonrespondents.

STATISTICAL ANALYSIS

Data collected from the instrument were transferred to computer cards and analyzed via the Statistical Package for the Social Sciences (SPSS) at the Virginia Polytechnic Institute and State University computer center. "Statistical Package for the Social Sciences (SPSS) is an integrated system of computer programs developed for the analysis of Social Science data" (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975, p. 1).
Several statistical techniques were used to analyze the data. The statistical tests used in the study were independent t-test, Pearson Product-Moment Correlation, and One-Way Analysis of Variance. In addition, frequencies, percentages, means, and standard deviations were used in this study.

The background information was analyzed using frequencies and percentages. The amount of knowledge small and large flue-cured tobacco producers had regarding Virginia Cooperative Extension Service and degree of participation in the Virginia Cooperative Extension Service programs were analyzed using means and standard deviations. A total score for knowledge and degree of participation were computed for each respondent.

A Likert scale was used to measure the attitudes of the small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service agricultural programs, and the staff. The attitude statements were summed in order to compute a mean score for each respondent.

HYPOTHESES

The following null hypotheses were developed for this study:

Hypothesis 1 -- There is no difference in the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service flue-cured tobacco program.
Hypothesis 2 -- There is no difference in the attitudes small and large flue-cured tobacco producers have toward the overall agricultural program of the Virginia Cooperative Extension Service.

Hypothesis 3 -- There is no difference in the attitudes small and large flue-cured tobacco producers have toward the qualifications of the Virginia Cooperative Extension Service local professional staff.

Hypothesis 4 -- There is no difference in the degree of participation in Virginia Cooperative Extension Service programs by small and large flue-cured tobacco producers.

Hypothesis 5 -- There is no difference in the amount of knowledge small and large flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service.

Hypothesis 6 -- There is no relationship between the amount of knowledge flue-cured tobacco producers have regarding the Virginia Cooperative Extension Service and their attitudes toward the Virginia Cooperative Extension Service.

Hypothesis 7 -- There is no relationship between the degree of participation in the Virginia Cooperative Extension Service programs and the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service.

Hypothesis 8 -- There is no difference in the attitudes of young, middle-aged and old flue-cured tobacco producers toward the Virginia Cooperative Extension Service.
Hypotheses 1 through 5 were analyzed using the independent t-test. The independent t-test is designed to compare the means of two groups that were selected independently. Hypotheses 6 and 7 were tested using Pearson Product-Moment Correlation. "When, as is often the case, we must relate one score to another, we use the correlation coefficient" (Tyler, 1963, p. 18). Tyler also pointed out that the Pearson Product-Moment coefficient is the most widely used index for correlations. Hypothesis 8 was tested using One-Way Analysis of Variance.

SUMMARY OF CHAPTER

Chapter 3 presented a description of the methodology used to conduct the study. A stratified random sample of small and large flue-cured tobacco producers in ten counties of Virginia was selected for this study.

A descriptive research design was utilized in this study. A survey instrument was developed specifically for this study. Appropriate statistics were selected to analyze the data.
Chapter 4

PRESENTATION AND ANALYSIS OF DATA

This study was designed to determine the attitudes, degree of participation and knowledge of small and large flue-cured tobacco producers concerning the Virginia Cooperative Extension Service. It is the intent of this chapter to describe the sample and present an analysis of the data collected from the sample.

DESCRIPTION OF THE SAMPLE

The stratified sample for this study consisted of the 400 flue-cured tobacco producers who were selected from the top ten flue-cured tobacco producing counties in Virginia. The instrument was completed and returned by 63 percent of the flue-cured tobacco producers surveyed. Table 3 indicates the number and percent of usable returned instruments by county.

Ten percent of the nonrespondents were randomly selected and interviewed by telephone. The interviews were conducted to determine if the findings of the study could be generalized to the population. An analysis of the telephone nonrespondents and mail questionnaire respondents, using an independent t-test, indicated that there were no statistical differences between the two groups.

The biographical information collected was reported to provide a description of the flue-cured tobacco producers included in the study.
<table>
<thead>
<tr>
<th>County</th>
<th>Number in Sample</th>
<th>Number Returned</th>
<th>Percent of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunswick</td>
<td>24</td>
<td>14</td>
<td>3.50</td>
</tr>
<tr>
<td>Campbell</td>
<td>28</td>
<td>19</td>
<td>4.75</td>
</tr>
<tr>
<td>Charlotte</td>
<td>16</td>
<td>7</td>
<td>1.75</td>
</tr>
<tr>
<td>Dinwiddie</td>
<td>20</td>
<td>13</td>
<td>3.25</td>
</tr>
<tr>
<td>Franklin</td>
<td>24</td>
<td>17</td>
<td>4.25</td>
</tr>
<tr>
<td>Halifax</td>
<td>96</td>
<td>64</td>
<td>16.00</td>
</tr>
<tr>
<td>Lunenburg</td>
<td>16</td>
<td>11</td>
<td>2.75</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>56</td>
<td>29</td>
<td>7.25</td>
</tr>
<tr>
<td>Patrick</td>
<td>24</td>
<td>12</td>
<td>3.00</td>
</tr>
<tr>
<td>Pittsylvania</td>
<td>96</td>
<td>66</td>
<td>16.50</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>400</strong></td>
<td><strong>252</strong></td>
<td><strong>63.00</strong></td>
</tr>
</tbody>
</table>
The biographical data included years of farming, gross farm income, flue-cured tobacco poundage quota, acres of tobacco, main source of annual income, main source of farm income, educational level, age and race.

Years of Farming

The number of years of farming for the respondents ranged from one year to 75 years. The majority of the producers (57.5 percent) had been farmers more than 25 years. The modal group was 36 to 50 years, with 79 producers (31.3 percent). Forty producers had been farming 10 years or less (15.9 percent), but only 10 producers had more than 50 years of farming experience. A summary of the data is displayed in Table 4.

Gross Farm Income

As indicated in Table 5, less than 50 percent of the producers (46.0 percent) reported an annual farm income of less than $20,000. The majority of the producers (54.0 percent) revealed a gross farm income of more than $20,000 per year.

Flue-cured Tobacco Poundage Quota

Table 6 shows a breakdown of the quota allotments for flue-cured tobacco producers. The most frequently selected category was 588 to 5,000 pounds with 63 producers (25.0 percent). More than 48 percent of the producers reported a quota allotment of 10,000 pounds or less.
TABLE 4

Number and Percentage of Producers
by Years of Farming

<table>
<thead>
<tr>
<th>Years Farming</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 10</td>
<td>40</td>
<td>15.9</td>
</tr>
<tr>
<td>11 to 25</td>
<td>67</td>
<td>26.6</td>
</tr>
<tr>
<td>26 to 35</td>
<td>56</td>
<td>22.2</td>
</tr>
<tr>
<td>36 to 50</td>
<td>79</td>
<td>31.3</td>
</tr>
<tr>
<td>51 and above</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
</tr>
</tbody>
</table>
### TABLE 5

Number and Percentage of Producers
by Gross Farm Income

<table>
<thead>
<tr>
<th>Gross Farm Income</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000</td>
<td>116</td>
<td>46.0</td>
</tr>
<tr>
<td>More than $20,000</td>
<td>136</td>
<td>54.0</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 6

Number and Percentage of Producers by Flue-cured Tobacco Poundage Quota

<table>
<thead>
<tr>
<th>Poundage Quota</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>588 to 5,000</td>
<td>63</td>
<td>25.0</td>
</tr>
<tr>
<td>5,001 to 10,000</td>
<td>59</td>
<td>23.4</td>
</tr>
<tr>
<td>10,001 to 20,000</td>
<td>60</td>
<td>23.8</td>
</tr>
<tr>
<td>20,001 to 40,000</td>
<td>29</td>
<td>11.5</td>
</tr>
<tr>
<td>40,001 to 100,000</td>
<td>26</td>
<td>10.3</td>
</tr>
<tr>
<td>100,001 and over</td>
<td>15</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>252</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Approximately 16 percent indicated a quota allotment of more than 40,000 pounds. However, the majority of the producers (72.2 percent) reported a quota allotment of less than 22,000 pounds.

Acres

The data for the number of acres of Tobacco in Table 7 indicate that slightly more than half of the producers (51.2 percent) were in the 1 to 9 acres category. Only 123 producers (48.8 percent) reported a tobacco acreage allotment of 10 acres or more. The respondents in the 1 to 9 acres category were classified as small flue-cured tobacco producers and the ones growing 10 acres or more were classified as large flue-cured tobacco producers.

Main Source of Annual Income

The number and percent of producers by main source of annual income are displayed in Table 8. The majority of the producers (71.4 percent) reported the farm as being their main source of annual income. Only 72 producers (28.6 percent) indicated that their main source of annual income was from a non-farm source.

Flue-cured Tobacco as a Main Source of Farm Income

The data regarding flue-cured tobacco as a main source of farm income in Table 9 show that flue-cured tobacco was identified by the majority of producers (78.2 percent) as their main source of farm
TABLE 7

Number and Percentage of Producers by Acres of Flue-cured Tobacco Grown

<table>
<thead>
<tr>
<th>Acres of Flue-cured Tobacco</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 9 (small producer)</td>
<td>129</td>
<td>51.2</td>
</tr>
<tr>
<td>10 or more (large producer)</td>
<td>123</td>
<td>48.8</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 8

Number and Percentage of Producers by Main Source of Annual Income

<table>
<thead>
<tr>
<th>Source of Annual Income</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm</td>
<td>180</td>
<td>71.4</td>
</tr>
<tr>
<td>Non-Farm</td>
<td>72</td>
<td>28.6</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 9

Number and Percentage of Producers with Flue-cured Tobacco as a Main Source of Farm Income

<table>
<thead>
<tr>
<th>Flue-cured Tobacco As a Main Source of Farm Income</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>197</td>
<td>78.2</td>
</tr>
<tr>
<td>No</td>
<td>55</td>
<td>21.8</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
</tr>
</tbody>
</table>
income. Less than 25 percent of the producers reported that flue-cured tobacco was not their main source of farm income.

**Educational Level**

In Table 10, data are cited regarding the educational level of the respondents with high school being the most frequently identified category. More than half of the producers (55.6 percent) reported some high school training. Less than one-third of the producers (30.6 percent) were in the 0-8 years category while nearly 14 percent had some education beyond the high school level.

**Age**

The number and percent of producers by years of age are presented in Table 11. The number of middle-aged producers (41.7 percent) and old producers (41.3 percent) were almost evenly divided. The majority of the producers (83.0 percent) were more than 35 years of age. Less than 20 percent of the respondents were classified as young producers.

**Race**

The data for racial identity cited in Table 12 show that less than 25 percent of the producers were black. Nearly 80 percent of the 252 respondents were white.
TABLE 10

Number and Percentage of Producers
by Educational Level

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary (0 - 8 years)</td>
<td>77</td>
<td>30.6</td>
</tr>
<tr>
<td>High School (9 - 12 years)</td>
<td>140</td>
<td>55.6</td>
</tr>
<tr>
<td>Some College (13 or more years)</td>
<td>35</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.1*</td>
</tr>
</tbody>
</table>

*100.1 due to rounding.
## TABLE 11

Number and Percentage of Producers by Age

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Producers (19 to 35 years)</td>
<td>43</td>
<td>17.1</td>
</tr>
<tr>
<td>Middle-aged Producers (36 to 55 years)</td>
<td>105</td>
<td>41.7</td>
</tr>
<tr>
<td>Old Producers (56 years and older)</td>
<td>104</td>
<td>41.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>252</td>
<td>100.1*</td>
</tr>
</tbody>
</table>

*100.1 due to rounding
TABLE 12

Number and Percentage of Producers by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Number of Producers</th>
<th>Percent of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>52</td>
<td>20.6</td>
</tr>
<tr>
<td>White</td>
<td>200</td>
<td>79.4</td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>100.0</td>
</tr>
</tbody>
</table>
DATA ANALYSIS

The data were statistically analyzed by the use of an independent t-test, Pearson Product-Moment Correlation, and One-Way Analysis of Variance. Eight null hypotheses were used as a guide for testing, organizing, and reporting the data. The hypotheses were tested by summing the scores for the items in the various sections of the instrument. Means, standard deviations, and appropriate statistics were presented for each hypothesis. Hypothesis statements were tested at the .05 level of significance.

Attitudes toward the Virginia Cooperative Extension Service were categorized as favorable or unfavorable. A Likert scale rating of 1 indicated an unfavorable attitude and rating of 5 indicated a favorable attitude. A total attitude score was computed for each respondent in the study by summing the ratings of all attitudinal statements.

Degree of participation was based on the frequency with which flue-cured tobacco producers come in contact with the Virginia Cooperative Extension Service. A total participation score for each respondent was derived by summing the number of contacts with the Virginia Cooperative Extension Service during the past year.

The knowledge flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service was measured by 12 true-false items. A value of 1 was assigned to the correct option and 0 was assigned to the incorrect option. A total score was computed
for each respondent by summing the total number of correct items selected.

**Null Hypothesis 1:**

There is no difference in the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service flue-cured tobacco program.

Items 17 through 24 in the opinion section of the instrument were used to measure the attitude of the respondents toward the flue-cured tobacco program. The mean attitude scores and t-value for small and large flue-cured tobacco producers are reported in Table 13 with the highest favorable score possible being 40. The mean attitude score for the small flue-cured tobacco producers was 28.79, and the mean attitude score for the large flue-cured tobacco producers was 29.95.

The t-test value determined was 2.59 which was statistically significant at the .01 level. As a result, the null hypothesis of no difference between the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service flue-cured tobacco program was rejected at the .05 level.

**Null Hypothesis 2:**

There is no difference in the attitudes small and large flue-cured tobacco producers have toward the overall agricultural program of the Virginia Cooperative Extension Service.
TABLE 13

Mean Score, Standard Deviation, and t-Value for Small and Large Flue-cured Tobacco Producers' Attitudes Toward the Virginia Cooperative Extension Service Flue-cured Tobacco Program

(n = 252)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>t-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Tobacco Producer</td>
<td>28.79&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.25</td>
<td>2.59</td>
<td>0.010</td>
</tr>
<tr>
<td>Large Tobacco Producer</td>
<td>29.95&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Possible range of 8 to 40
Items 1 through 16 in the opinion section of the instrument were used to measure the attitudes of the producers toward the overall agricultural program of the Virginia Cooperative Extension Service. The mean attitude score and t-value for small and large flue-cured tobacco producers are shown in Table 14. The small flue-cured tobacco producers had a mean attitude score of 60.50 which was lower than the mean attitude score of 65.09 for the large flue-cured tobacco producers.

The t-value (4.97) obtained was statistically significant at the .001 level. Therefore, the null hypothesis of no difference between the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service overall agricultural program was rejected at the .05 level.

**Null Hypothesis 3:**

There is no difference in the attitudes small and large flue-cured tobacco producers have toward the qualifications of the Virginia Cooperative Extension Service local professional staff.

Attitudes of the small and large flue-cured tobacco producers toward the qualifications of the professional staff were measured by items 25 through 35 in the opinion section of the instrument. Results of the t-test analysis of hypothesis 3 are displayed in Table 15. The mean attitude score for both small and large producers of flue-cured tobacco were almost equal. The small flue-cured tobacco producers' mean attitude score was 40.54, while the large flue-cured tobacco producers' mean score was 40.95.
TABLE 14

Mean Score, Standard Deviation, and t-Value for Small and Large Flue-cured Tobacco Producers' Attitudes Toward the Overall Agricultural Program of the Virginia Cooperative Extension Service

\( (n = 252) \)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>t-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Tobacco Producer</td>
<td>60.50(^a)</td>
<td>6.67</td>
<td>4.97</td>
<td>0.000</td>
</tr>
<tr>
<td>Large Tobacco Producer</td>
<td>65.09(^a)</td>
<td>7.54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)Possible range of 16 to 80
### TABLE 15

Mean Score, Standard Deviation, and t-Value for Small and Large Flue-cured Tobacco Producers' Attitudes Toward the Virginia Cooperative Extension Service Professional Staff

(n = 252)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>t-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Tobacco Producer</td>
<td>40.54a</td>
<td>5.05</td>
<td>0.64</td>
<td>0.520</td>
</tr>
<tr>
<td>Large Tobacco Producer</td>
<td>40.95a</td>
<td>4.99</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*aPossible range of 11 to 55*
The t-test value of 0.64 was not significant at the .05 level. Because of the lack of statistical significance, the hypothesis of no difference in the attitudes of small and large flue-cured tobacco producers toward the qualifications of the professional staff of the Virginia Cooperative Extension Service was not rejected.

Null Hypothesis 4:

There is no difference in the degree of participation in Virginia Cooperative Extension Service programs by small and large flue-cured tobacco producers.

The t-test analysis presented in Table 16 indicates that the large flue-cured tobacco producers had a higher degree of participation in the Virginia Cooperative Extension Service programs than the small flue-cured tobacco producers. The small flue-cured tobacco producers' mean participation score was 41.31 while a mean participation score of 52.13 was calculated for the large producers.

The t-test value of 1.98 was statistically significant at the .05 level. This led to the rejection of the hypothesis statement of no difference between the participation in the Virginia Cooperative Extension Service programs by small and large flue-cured tobacco producers.
TABLE 16

Mean Score, Standard Deviation, and t-Value for Degree of Participation in the Virginia Cooperative Extension Service Programs by Small and Large Flue-cured Tobacco Producers

(n = 252)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>t-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Tobacco Producer</td>
<td>41.31a</td>
<td>37.60</td>
<td>1.98</td>
<td>0.049</td>
</tr>
<tr>
<td>Large Tobacco Producer</td>
<td>52.13a</td>
<td>48.61</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

aPossible range of 0 to 99
Null Hypothesis 5:
There is no difference in the amount of knowledge small and large flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service.

A summary of the t-test analysis for hypothesis 5 is shown in Table 17. There was little difference in the amount of knowledge small and large flue-cured tobacco producers possessed regarding the functions of the Virginia Cooperative Extension Service. This was supported by a mean knowledge score of 10.34 for small flue-cured tobacco producers, and a slightly higher mean knowledge score of 10.65 for the large producers.

The t-test value derived for the null hypothesis was 1.52 which was not statistically significant at the .05 level. The t-value supports the hypothesis statement of no difference between the knowledge of small and large flue-cured tobacco producers regarding the functions of the Virginia Cooperative Extension Service. Consequently, the null hypothesis was not rejected.

Null Hypothesis 6:
There is no relationship between the amount of knowledge flue-cured tobacco producers have regarding the Virginia Cooperative Extension Service and their attitudes toward the Virginia Cooperative Extension Service.

The Pearson Product-Moment Correlation analysis, as presented in Table 18, shows a low positive relationship between the amount of know-
TABLE 17

Mean Score, Standard Deviation, and t-Value for the Amount of Knowledge Small and Large Flue-cured Tobacco Producers Have Regarding the Functions of the Virginia Cooperative Extension Service

(n = 252)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>t-Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Tobacco</td>
<td>10.34a</td>
<td>1.52</td>
<td>1.52</td>
<td>0.129</td>
</tr>
<tr>
<td>Producer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Tobacco</td>
<td>10.65a</td>
<td>1.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Possible range of 1 to 12
TABLE 18

Correlation Coefficients Between Producers' Knowledge and Participation and Their Attitudes Toward Virginia Cooperative Extension Service

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>r</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producers' Knowledge of Virginia Cooperative Extension Service</td>
<td>252</td>
<td>.20</td>
<td>0.0032</td>
</tr>
<tr>
<td>Participation in Virginia Cooperative Extension Service Programs</td>
<td>252</td>
<td>.30</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
ledge flue-cured tobacco producers possess regarding the Virginia Cooperative Extension Service and their attitudes toward the Virginia Cooperative Extension Service. A correlation coefficient of .20 was found. The correlation between the two variables was positive and statistically significant at the .05 level. This led to a rejection of the null hypothesis of no relationship between producers' knowledge of the Virginia Cooperative Extension Service and their attitudes toward the Virginia Cooperative Extension Service.

Null Hypothesis 7:

There is no relationship between the degree of participation in the Virginia Cooperative Extension Service programs and the attitude flue-cured tobacco producers have toward the Virginia Cooperative Extension Service.

A positive correlation, as shown in Table 18, was found between flue-cured tobacco producers' participation in the Virginia Cooperative Extension Service programs and their attitudes toward the Virginia Cooperative Extension Service. The correlation coefficient of .30 between producers' participation in the Virginia Cooperative Extension Service programs and their attitudes toward the Virginia Cooperative Extension Service was not high, but statistically significant beyond the .001 level. Therefore, the null hypothesis of no relationship between the two variables was rejected at the .05 level.
Null Hypothesis 8:

There is no difference in the attitudes of young, middle-aged, and old flue-cured tobacco producers toward the Virginia Cooperative Extension Service.

The data in Table 19 displays the results of the Analysis of Variance test for hypothesis 8. The mean attitude scores for the young and old flue-cured tobacco producers were almost identical. The young flue-cured tobacco producers had the highest mean (130.71) while the old producers mean attitude score of 130.32 was slightly lower. The mean attitude score of 128.08 for the middle-aged producers was the lowest of the three groups. The highest possible attitude score was 175.

The Analysis of Variance test yielded a F-Ratio of .962 which was not statistically significant at the .05 level. Because of the lack of statistical significance, the null hypothesis of no difference between the attitudes of young, middle-aged, and old producers toward the Virginia Cooperative Extension Service was not rejected.

SUMMARY OF CHAPTER

This chapter presented a description of the sample and an analysis of the data collected. The sample for this study consisted of 400 flue-cured tobacco producers. Of the 400 producers sampled, 252 (63 percent) returned instruments. The data were statistically analyzed
**TABLE 19**

Mean Score, Standard Deviation, and F-Ratio of Producers' Attitudes Toward the Virginia Cooperative Extension Service as Related to Age

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>F-Ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Producer</td>
<td>43</td>
<td>130.71a</td>
<td>10.72</td>
<td>0.962</td>
<td>0.3835</td>
</tr>
<tr>
<td>Middle-aged Producer</td>
<td>105</td>
<td>128.08a</td>
<td>12.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old Producer</td>
<td>104</td>
<td>130.32a</td>
<td>14.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>129.45</td>
<td>13.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Possible range of 35 to 175*
by the use of an independent t-test, Pearson Product-Moment Correlation and One-Way Analysis of Variance.

Eight null hypotheses were used as a guide for testing, organizing and reporting the data. The hypotheses were tested by summing the scores for the items in various sections of the instrument. Of the eight null hypotheses, five were rejected at the .05 level of significance. The remaining three hypotheses were not rejected because of a lack of statistical significance.
Chapter 5

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

INTRODUCTION

Chapter 5 presents a summary of the study, findings, discussion, and recommendations.

SUMMARY OF THE STUDY

Problem of the Study

This study was designed to determine the attitudes, degree of participation, and knowledge of small and large flue-cured tobacco producers concerning the Virginia Cooperative Extension Service. In addition, this study investigated the attitudes of the flue-cured tobacco producers toward the Virginia Cooperative Extension Service as related to knowledge, degree of participation, and age of the producers.

Investigation Procedures

The population for this study consisted of 6,937 flue-cured tobacco producers from the ten largest flue-cured tobacco producing counties in Virginia. Flue-cured tobacco producers were stratified by county. A proportional stratified random sample was used to select the 400 flue-cured tobacco producers surveyed in this study. Of the 400 producers sampled, 252 producers (63 percent) returned the survey instrument.

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For this study, the instrument used was a structured questionnaire. The instrument was designed to collect biographical information, to measure the knowledge flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service, to determine their degree of participation in the Virginia Cooperative Extension Service and to measure the attitudes of flue-cured tobacco producers toward the Virginia Cooperative Extension Service. In measuring attitudes, the instrument was designed to assess attitudes toward the overall agricultural program, attitudes toward the flue-cured tobacco program, and attitudes toward the local professional staff of the Virginia Cooperative Extension Service. A Likert-type scale was used to measure the attitudes of the flue-cured tobacco producers.

A panel of experts was used to evaluate the instrument. In addition, the panel was instrumental in improving the validity of the instrument. The instrument was pilot tested with 20 flue-cured tobacco producers in Henry County, Virginia. Producers in the pilot test group were not a part of the sample selected for the study, but possessed similar characteristics. After pilot testing the instrument, the Cronbach Alpha procedure was used to assess reliability of the instrument. The reliability of the knowledge items was .53; for the participation items of the instrument the reliability was .69; and the opinion items which were used to measure attitudes had a reliability of .90.

A survey instrument package was mailed to the 400 flue-cured tobacco producers selected for the study. The package contained a
letter of transmittal which explained the importance of the study, the purpose of the study, and the confidentiality of the information provided. In addition, a stamped self-addressed return envelope and a survey instrument were included in the package. A postcard was used to follow-up the instrument two weeks after it was mailed. After mailing a second copy of the instrument, a 10 percent sample of the nonrespondents were contacted by telephone. The data were used to assess the differences between respondents and nonrespondents. The data indicated that there was no statistically significant difference between respondents and nonrespondents, consequently the results could be generalized to the population.

Data collected from the instrument were transferred to computer cards and analyzed via the Statistical Package for the Social Sciences (SPSS) at the Virginia Polytechnic Institute and State University Computer Center. The statistical tests used to analyze the data were independent t-tests, Pearson Product-Moment Correlation, and One-Way Analysis of Variance. In addition, frequencies, percentages, means, and standard deviations were used in this study. Eight null hypotheses were used as a guide for reporting the data.

SUMMARY OF FINDINGS

The summary of findings will be presented according to the biographical information collected and based on the null hypotheses resulting from the eight research questions developed for this study.
The biographical information revealed that a large proportion of the flue-cured tobacco producers in the study (57.4 percent) had been farming more than 25 years. More than half of the respondents (54 percent) reported a gross farm income of $20,000 or more.

According to the data, 48.4 percent of the producers had a flue-cured tobacco quota allotment of 10,000 pounds or less. It was found that approximately 51 percent of the respondents produced nine or less acres of tobacco. The 129 producers in the nine acres category were classified as small producers while the remaining 123 respondents in the 10 acres or more category were considered to be large flue-cured tobacco producers. Nearly three-fourths of the producers (71.4 percent) reported the farm as being their main source of annual income. This was similar to the 197 producers (78.2 percent) identifying flue-cured tobacco as their main source of farm income.

The educational level for the producers varied somewhat, but the majority of the producers (55.6 percent) had completed some high school training. Nearly 14.0 percent of the producers had some education beyond the high school level.

The data indicated that the majority of the producers (83.0 percent) were more than 35 years of age and thus classified as middle-aged or old flue-cured tobacco producers. The racial data collected revealed that nearly 80 percent of the respondents were white while slightly more than twenty percent were black.
The eight null hypotheses were tested by summing the scores for items in the various sections of the instrument. A significance level of .05 was used to test the hypothesis statements.

**Null Hypothesis 1**

There is no difference in the attitudes of small and large flue-cured tobacco producers toward the Virginia Cooperative Extension Service flue-cured tobacco program.

An independent t-test was used to test the first hypothesis statement. Eight attitudinal statements were used to compute the total attitude score for the producers with the highest possible score being 40. The large flue-cured tobacco producers' mean attitude score (29.95) was slightly higher than the mean attitude score (28.79) found for the small flue-cured tobacco producers. The t-test value of 2.59 was statistically significant at the .05 level. The null hypothesis of no difference between the attitudes of the two groups was rejected. The large producers had a more positive attitude than the small producers toward the Virginia Cooperative Extension Service flue-cured tobacco program.

**Null Hypothesis 2**

There is no difference in the attitudes small and large flue-cured tobacco producers have toward the overall agricultural program of the Virginia Cooperative Extension Service.
Hypothesis statement two was tested by an independent t-test. Sixteen attitudinal statements were used to compute the total attitude score for producers with the range being 16 to 80. Inspection of the means indicated that the large flue-cured tobacco producers' mean (65.09) was considerably higher than the mean (60.50) for the small flue-cured tobacco producers. Statistical analysis of the means \( t = 4.97 \) revealed a significant difference and the null hypothesis statement was rejected at .05 level. It was found that both groups possessed positive attitudes toward the agency's overall agricultural program. However, the large flue-cured tobacco producers rated the overall agricultural program of the Virginia Cooperative Extension Service slightly more favorably than the small producers.

**Null Hypothesis 3**

There is no difference in the attitudes small and large flue-cured tobacco producers have toward the qualifications of the Virginia Cooperative Extension Service local professional staff.

The third hypothesis was tested with an independent t-test. The highest possible attitude score was 55. The mean attitude score found for the small (40.54) and large (40.95) flue-cured tobacco producers indicated that both groups shared similar opinions of the Virginia Cooperative Extension Service local professional staff. Statistical significance between the means of the groups was not found at the .05 level, therefore, the null hypothesis was not rejected. Both small and
large flue-cured tobacco producers indicated a more positive than negative attitude toward the qualifications of the Virginia Cooperative Extension Service local professional staff.

Null Hypothesis 4

There is no difference in the degree of participation in Virginia Cooperative Extension Service programs by small and large flue-cured tobacco producers.

Degree of participation was based on the frequency with which flue-cured tobacco producers come in contact with the Virginia Cooperative Extension Service. The total participation score for each respondent was calculated by summing the number of contacts with the Virginia Cooperative Extension Service during the past 12 months. The mean participation score (52.13) found for the large flue-cured tobacco producers was substantially higher than mean participation score (41.31) found for the small flue-cured tobacco producers. The independent t-test analysis ($t = 1.98$) revealed statistical difference between the two groups. The null hypothesis was rejected at the .05 level of significance. Large flue-cured tobacco producers had more contact with the Virginia Cooperative Extension Service than the small flue-cured tobacco producers. This finding supports the findings of Warner and Christenson (1981) and the United States Department of Agriculture (1980).
Null Hypothesis 5

There is no difference in the amount of knowledge small and large flue-cured tobacco producers have regarding the functions of the Virginia Cooperative Extension Service.

Flue-cured tobacco producers' knowledge of the functions of the Virginia Cooperative Extension Service was measured by 12 true-false items. A value of 1 was assigned to the correct option and 0 was assigned to the incorrect option. A total score was computed for each respondent by summing the total number of correct responses.

There was only a slight difference between the amount of knowledge small and large flue-cured tobacco producers possessed regarding the functions of the Virginia Cooperative Extension Service. The t-test analysis between the small producers' mean score (10.34) and the large producers' mean score (10.65) revealed a lack of statistical significance. Therefore, the null hypothesis was not rejected. Based on the mean knowledge scores, both small and large flue-cured tobacco producers were knowledgeable of the functions of the Virginia Cooperative Extension Service. This finding differed from Gregory (1967) who concluded that garden club members possessed only limited knowledge of the Virginia Cooperative Extension Service.

Null Hypothesis 6

There is no relationship between the amount of knowledge flue-cured tobacco producers have regarding the Virginia Cooperative Extension
Service and their attitudes toward the Virginia Cooperative Extension Service.

A low positive relationship was found between the amount of knowledge flue-cured tobacco producers have regarding the Virginia Cooperative Extension Service and their attitudes toward the Virginia Cooperative Extension Service. A Pearson Product-Moment coefficient of .20 was computed for the two variables. The correlation between knowledge and attitudes was statistically significant at the .05 level. As a result, the null hypothesis was rejected. The data suggested that the higher the producer's knowledge score the more positive their attitudes were toward the Virginia Cooperative Extension Service.

Null Hypothesis 7

There is no relationship between the degree of participation in the Virginia Cooperative Extension Service programs and the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service.

The Pearson Product-Moment Correlation revealed that a low positive relationship existed between producers' participation in the Virginia Cooperative Extension Service programs and their attitudes toward the Virginia Cooperative Extension Service. A correlation coefficient of .30 was found between the two variables. The relationship between participation and attitude was statistically significant at the .05 level. The null hypothesis was rejected. According to the findings, the producers who frequently participated in the Virginia Cooperative
Extension Service had a more positive attitude toward the Virginia Cooperative Extension Service. Gross (1977) reported similar findings in his study of the Missouri Cooperative Extension Service.

**Null Hypothesis 8**

There is no difference in the attitudes of young, middle-aged and old flue-cured tobacco producers toward the Virginia Cooperative Extension Service.

One-Way Analysis of Variance was used to test the final hypothesis statement. A total attitude score was computed for each producer by summing the rating of the 35 attitudinal statements. Statistical significance among the three age groups was not found. Therefore, the null hypothesis was not rejected. The young flue-cured tobacco producers had the highest mean (130.71) of all three groups. The old producers' mean score (130.32) was slightly lower than the young producers. The middle-aged producers were found to have the lowest mean (128.08). This concurs with the findings of Gross (1977). The mean attitude scores indicated that all three age groups had a more positive than negative attitude toward the Virginia Cooperative Extension Service. Age did not influence producers' attitudes toward the Virginia Cooperative Extension Service.
The conclusions reached in this study are a result of the analysis and interpretation of the data provided by the flue-cured tobacco producers in ten counties of Virginia. Specifically, the following conclusions are based on the findings of the study.

1. The size of the flue-cured tobacco producers' acreage allotment had a significant influence on their attitudes toward the Virginia Cooperative Extension Service flue-cured tobacco program, the overall agricultural program, and degree of participation in the Virginia Cooperative Extension Program.

2. The size of the flue-cured tobacco producers' acreage allotment did not have an influence on their attitudes toward the local professional staff and their knowledge of the functions of the Virginia Cooperative Extension Service.

3. Large flue-cured tobacco producers' attitudes were more positive than the small flue-cured tobacco producers' attitudes toward the Virginia Cooperative Extension Service flue-cured tobacco program.

4. Small flue-cured tobacco producers had a less positive attitude than the large flue-cured tobacco producers toward the overall agricultural program of the Virginia Cooperative Extension Service.

5. Both small and large flue-cured tobacco producers possessed positive attitudes toward the qualifications of the Virginia Cooperative Extension Service local professional staff.
6. Large flue-cured tobacco producers participated in more programs of the Virginia Cooperative Extension Service than the small flue-cured tobacco producers.

7. Both small and large flue-cured tobacco producers were knowledgeable of the functions of the Virginia Cooperative Extension Service.

8. Producers' knowledge of the Virginia Cooperative Extension Service functions was positively related to their attitudes toward the Virginia Cooperative Extension Service.

9. Producers' participation in programs of the Virginia Cooperative Extension Service was positively related to their attitudes toward the Virginia Cooperative Extension Service.

10. Age did not influence the attitudes of flue-cured tobacco producers toward the Virginia Cooperative Extension Service.

11. The flue-cured tobacco producers had positive attitudes toward the Virginia Cooperative Extension Service.

DISCUSSION

Based on the findings and conclusions of this study flue-cured tobacco producers generally have a positive attitude toward the Virginia Cooperative Extension Service. Moreover, they are knowledgeable of the functions of the Virginia Cooperative Extension Service and are utilizing the services of the agency to some degree. This would tend to
suggest that the Virginia Cooperative Extension Service's programs reflect the changing needs of its agricultural clients.

One interesting finding of this study was that the attitude, participation, and knowledge scores for the small flue-cured tobacco producers were lower than the large flue-cured tobacco producers' scores. In most cases, the scores were significantly lower. This would tend to suggest that the Virginia Cooperative Extension Service should more closely evaluate its effectiveness in meeting the needs of the small farmer.

According to the literature, programs of the Cooperative Extension Service do not adequately meet the needs of the small farmer. It is believed that the agency's programs are more geared to the large commercial farmers. This is not necessarily the situation in Virginia because the small flue-cured tobacco producers have positive attitudes toward the Virginia Cooperative Extension Service programs and local staff. However, the small flue-cured tobacco producers' lower attitude and participation scores would indicate some concern on behalf of the group.

RECOMMENDATIONS

The following recommendations are based on the findings and conclusions for this study:

1. The Virginia Cooperative Extension Service should place more emphasis on methods of delivery which meet the needs of the small flue-cured tobacco producers.
2. The findings of this study should be made available to employees of the Virginia Cooperative Extension Service who are in key leadership positions.

3. The results of this study should be shared with appropriate Extension agents of the Virginia Cooperative Extension Service.

4. The Virginia Cooperative Extension Service administration should continue to follow existing employment procedures when employing Extension agents in order to continue to maintain the favorable attitudes of clients.

RECOMMENDATIONS FOR FURTHER STUDY

The following topics are recommended for further study:

1. Further research is needed to determine the factors associated with the attitudes of small farmers toward the Virginia Cooperative Extension Service.

2. Further research is needed to determine the factors influencing the lack of participation of small farmers in programs offered by the Virginia Cooperative Extension Service.

3. Similar studies should be conducted to assess the attitudes toward the Virginia Cooperative Extension Service programs in Family Resources, Community Resource Development, and 4-H.
4. Similar studies should be conducted in other states to assess the attitudes toward the Cooperative Extension Service programs in agriculture.

SUMMARY OF CHAPTER

This chapter presented an overview of the study and a description of the investigative procedures used for the study. In addition, the chapter included a summary of the findings, 11 conclusions, a brief discussion, and eight recommendations.
BIBLIOGRAPHY


APPENDICES
APPENDIX A

MAP SHOWING THE COUNTIES INCLUDED IN THE STUDY
Counties included in the study are shown in the shaded area.
APPENDIX B

LIST OF THE PANEL OF EXPERTS
PANEL OF EXPERTS

Mr. Edward Allen, Extension Leader
Miss Heidi Ford, Extension Leader
Dr. James F. Johnson, Extension Leader
Dr. C. Clark Jones, District Chairman
Dr. James Jones, Extension Specialist, Agronomy
Dr. Wayne Keffer, District Chairman
Dr. Charles R. Perkins, District Chairman
Dr. A. Travis Poole, Jr., Extension Leader
Dr. Clinton V. Turner, District Chairman
APPENDIX C

LETTER TO THE PANEL OF EXPERTS
TO: Panel of Experts  
FROM: Lorenza W. Lyons  
      Graduate Student, Agricultural Education  

Dear Panel Member:

I would like to thank you for agreeing to serve on a panel of experts to assist in evaluating the enclosed instrument. The instrument will be used in a study of attitudes, participation, and knowledge of flue-cured tobacco producers concerning the Virginia cooperative Extension Service.

This is a very crucial phase of the construction process of the instrument. As a panel member, your assistance is needed as follows:

1. Read all questions for clarity.
2. Revise or make suggestions for revising vague questions.
3. If the directions provided are confusing, please indicate.
4. Delete any questions you feel are not pertinent to the study.

Please write your comments or suggestions on the enclosed instrument.

In addition to the assistance provided above, I would also like for you to rate the attitudinal statements in the opinion section of the questionnaire. Please note that I have attached a second copy of the opinion section of the instrument for this purpose. The statements range from very positive attitudes toward the Virginia Cooperative Extension Service to very negative attitudes toward the Virginia Cooperative Extension Service.

There are 11 columns beside each statement. By circling one of the columns, you will scale the statements somewhere between very positive and very negative. Respond to each statement in only one column. If you feel the statement implies a very positive attitude toward the Virginia Cooperative Extension Service, you should circle column 1. If you feel the statement implies a slightly negative attitude toward Extension, you should circle column 7. The 11 numbers beside each statement reflects the following rating scale:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>8</th>
<th>9</th>
<th>10</th>
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<td>very positive</td>
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<td>neutral</td>
<td>slightly negative</td>
<td>negative</td>
<td>very reject</td>
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<tr>
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<td>positive</td>
<td>negative</td>
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</tbody>
</table>

After completing the tasks identified in this letter, please return the instrument and rating sheets to me by December 17, 1981. For your convenience, I have enclosed a self-addressed, stamped envelope. If you have any questions, I can be reached at 703-563-2763.

Again, thanks for your assistance in this matter.
APPENDIX D

RATING OF THE OPINION SECTION OF THE INSTRUMENT
RATING SCALE

Respond to each statement by circling one of the 11 columns to the right of each statement. See attached letter for details.

1  2  3  4  5  6  7  8  9  10  11
very positive  slightly positive  neutral  slightly negative  negative  very negative

1. Extension bulletins are very helpful to farmers.  1 2 3 4 5 6 7 8 9 10 11
2. Extension meetings and activities are not scheduled at times when most farmers can attend.  1 2 3 4 5 6 7 8 9 10 11
3. Extension Newsletters keep me informed of things I need to know.  1 2 3 4 5 6 7 8 9 10 11
4. Extension programs have not helped farmers to become more efficient.  1 2 3 4 5 6 7 8 9 10 11
5. Extension radio programs provide useful information.  1 2 3 4 5 6 7 8 9 10 11
6. Extension agents do not readily advise farmers of the changes and new developments in agriculture.  1 2 3 4 5 6 7 8 9 10 11
7. I can usually reach an Extension agent when I need one.  1 2 3 4 5 6 7 8 9 10 11
8. Extension agents do not respond immediately to requests for information.  1 2 3 4 5 6 7 8 9 10 11
9. Extension agents conduct meetings on topics that are helpful.  1 2 3 4 5 6 7 8 9 10 11
10. Extension meetings are held in locations where it is convenient for me to attend.  1 2 3 4 5 6 7 8 9 10 11
11. Farmers have an opportunity to assist Extension agents in determining programs.  1 2 3 4 5 6 7 8 9 10 11
12. Extension meetings are geared more for large commercial farmers.  1 2 3 4 5 6 7 8 9 10 11
13. Extension programs are widely publicized.  1 2 3 4 5 6 7 8 9 10 11
14. Most of the information from the Extension Office is old by the time it reaches the farmer.  1 2 3 4 5 6 7 8 9 10 11
15. Information from the Extension Office is easy to understand.  1 2 3 4 5 6 7 8 9 10 11
16. I can obtain information from other agencies as readily as from the Extension Service.  1 2 3 4 5 6 7 8 9 10 11
17. The Extension Office provides information that is helpful in controlling tobacco insects.  1 2 3 4 5 6 7 8 9 10 11
18. Extension agents do not use computers when working with flue-cured tobacco farmers.  1 2 3 4 5 6 7 8 9 10 11
19. The Extension Office provides information that is extremely helpful in preparing flue-cured tobacco plant beds. 1 2 3 4 5 6 7 8 9 10 11

20. The Extension Office needs to provide more practical information to flue-cured tobacco farmers. 1 2 3 4 5 6 7 8 9 10 11

21. The Extension flue-cured tobacco variety information is very helpful. 1 2 3 4 5 6 7 8 9 10 11

22. The County Extension flue-cured tobacco programs and activities are not held at a time when the information is needed the most. 1 2 3 4 5 6 7 8 9 10 11

23. I can obtain useful information from the Extension Office for controlling tobacco diseases. 1 2 3 4 5 6 7 8 9 10 11

24. The information from the Extension Office on flue-cured tobacco fertilization is not very helpful. 1 2 3 4 5 6 7 8 9 10 11

25. Extension agents are qualified to conduct programs in agriculture. 1 2 3 4 5 6 7 8 9 10 11

26. Extension agents should be trained as specialists in the major agricultural crops grown in the county. 1 2 3 4 5 6 7 8 9 10 11

27. Extension agents present information to farmers in an understandable manner. 1 2 3 4 5 6 7 8 9 10 11

28. My farming operation is too specialized to seek assistance from the local Extension agents. 1 2 3 4 5 6 7 8 9 10 11

29. Extension agents are not qualified to conduct programs and activities to help commercial farmers. 1 2 3 4 5 6 7 8 9 10 11

30. I respect the County Extension agent's judgment. 1 2 3 4 5 6 7 8 9 10 11

31. I see the Extension agent as a leader in agriculture. 1 2 3 4 5 6 7 8 9 10 11

32. Sometimes Extension agents provide farmers with the wrong information. 1 2 3 4 5 6 7 8 9 10 11

33. Extension agents do not work enough with farmers. 1 2 3 4 5 6 7 8 9 10 11

34. Extension agents are really prepared for their position. 1 2 3 4 5 6 7 8 9 10 11

35. Extension agents have not worked with farmers in improving marketing facilities for crops. 1 2 3 4 5 6 7 8 9 10 11
APPENDIX E

LETTER AND INSTRUMENT TO PILOT GROUP
TO: FLUE-CURED TOBACCO PRODUCERS  
RE: PILOT TESTING OF SURVEY INSTRUMENT

Dear Producer:

You have been selected as one of the few flue-cured tobacco producers in your county to help tobacco growers of Virginia. As a former flue-cured tobacco producer, I am conducting a survey of the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service. This study is designed to determine flue-cured tobacco producers' opinions and beliefs about the Extension program in their county. Also, this study will determine how frequently flue-cured tobacco producers participate in the county Extension programs.

This is the first study of this nature to be conducted in Virginia. The information received from the study will be used to assist the county Extension agents in planning programs that will be more helpful to flue-cured tobacco farmers in Virginia.

Your assistance is needed to improve the enclosed questionnaire before it is mailed to selected flue-cured tobacco producers in other counties. Please complete the enclosed questionnaire and return it in the enclosed pre-addressed, stamped envelope before January 4, 1982. If you do not understand a question, please make a note of it on the questionnaire. If the instructions are not clear for completing the questionnaire, please indicate this on the questionnaire. Also, I would welcome any comments or suggestions you may have regarding the questionnaire.

It is important that you answer each question that is listed on the questionnaire. The answers you provide as an individual will not be shared with anyone. I am only concerned with the results of the total survey so your answers will be kept in the strictest confidence. In addition, your name is not needed on the questionnaire. However, the questionnaire has been coded for follow-up purposes only.

As a reward for completing the questionnaire, I have enclosed a stick of big red chewing gum. This is my way of saying thanks for your cooperation and assistance. I look forward to your immediate reply.

Sincerely,

Lorenza W. Lyons  
Graduate Student
FLUE-CURED TOBACCO PRODUCERS SURVEY

Background Information

Directions: Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number. The information you provide as an individual will be kept in strict confidence.

1. How many years have you been farming? 

2. Is your annual gross farm income Less than $20,000 or more than $20,000? 

3. What is your tobacco poundage quota? 

4. How many acres of tobacco do you grow? 

5. Do you receive the majority of your annual income from a farm or non-farm activity? 

6. Is flue-cured tobacco your main source of farm income? Yes No 

7. What is your highest grade (education) completed? 

8. What is your age? 

9. What is your race? Black White American Indian Hispanic Oriental 

Directions: The following are statements about the Cooperative Extension Service. Please circle T for all True statements and F for all False statements listed in this section. Please answer all questions.

The main purpose of the county Extension office is to develop programs that will help farmers and other residents solve problems. 

The county Extension Service is mainly a soil-testing service. 

The county Extension Service is mainly for farmers. 

The county Extension Service provides information to small farmers as well as large commercial farmers. 

Farmers cannot assist the county Extension staff in planning the yearly Extension program. 

There are Extension Specialists at Virginia State University who assist the county Extension staff with agricultural programs. 

The county Extension Service is mainly for 4-H boys and girls. 

The county Extension Service works only with farmers. 

The county Extension Service offers programs in the area of agriculture, home economics, community resource development, and 4-H.

Participation in Extension Programs and Activities

Directions: Please check (✓) the blank for each question that is the closest representation of your actual contact with the county Extension Service during the last 12 months, or write in the correct number.

1. How many times were you visited by the county Extension agent during the last 12 months? 

2. How many Extension television programs did you watch during the last 12 months? 

3. How many times did you visit the county Extension office for agricultural information during the last 12 months? 

4. How many Extension meetings did you attend during the last 12 months? 

5. How many Extension bulletins or pamphlets did you read during the last 12 months?
6. How many Extension radio programs did you listen to during the last 12 months?
   _ None _ One _ Two _ Three _ Four _ Five _ Other (write in number)

7. How many times did you telephone the Extension office for information during the last 12 months?
   _ None _ One _ Two _ Three _ Four _ Five _ Other (write in number)

8. How many Extension newspaper articles did you read during the last 12 months?
   _ None _ One _ Two _ Three _ Four _ Five _ Other (write in number)

9. How many Extension newsletters did you read during the last 12 months?
   _ None _ One _ Two _ Three _ Four _ Five _ Other (write in number)

Directions: The following statements are designed to obtain your opinions regarding the county Extension Service program and the county Extension agents. As opinions, they are neither right nor wrong. Please indicate your opinions by circling the response for each statement that represents your true feelings or beliefs. For each statement you will have five possible choices:

SA = Strongly Agree  A = Agree  U = Undecided  D = Disagree  SD = Strongly Disagree

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

Note-- In the above example, the person agrees with the statement.

1. Extension bulletins are very helpful to farmers.  
2. Extension meetings and activities are not scheduled at times when most farmers can attend.  
3. Extension newsletters keep me informed of things I need to know.  
4. Extension programs have not helped farmers to become more efficient.  
5. Extension radio programs provide useful information.  
6. Extension agents do not readily advise farmers of the changes and new developments in agriculture.  
7. I can usually reach an Extension agent when I need one.  
8. Extension agents do not respond immediately to requests for information.  
9. Extension agents conduct meetings on topics that are helpful.  
10. Extension meetings are held in locations where it is not convenient for me to attend.  
11. Farmers have an opportunity to assist Extension agents in determining programs.  
12. Extension meetings are geared more for large commercial farmers.  
13. Extension programs are widely publicized.  
14. Most of the information from the Extension office is old by the time it reaches the farmers.  
15. Information from the Extension office is easy to understand.  
16. I can obtain information from other agencies as readily as from the Extension Service.  
17. The Extension office provides information that is helpful in controlling tobacco insects.  
18. Extension agents do not use computers when working with flue-cured tobacco farmers.  
19. The Extension office provides information that is extremely helpful in preparing flue-cured tobacco plant beds.  
20. The Extension office needs to provide more practical information to flue-cured tobacco farmers.  
21. The Extension flue-cured tobacco variety information is very helpful.  
22. The county Extension flue-cured tobacco programs and activities are not held during the season when the information is needed the most.  
23. I can obtain useful information from the Extension office for controlling tobacco diseases.  
24. The information from the Extension office on flue-cured tobacco fertilization is not very helpful.  
25. Extension agents are qualified to conduct programs in agriculture.  
26. Extension agents are specialists in the major agricultural crops grown in the county.  
27. Extension agents present information to farmers in an understandable manner.  
28. My farming operation is too specialized to seek assistance from local Extension agents.  
29. Extension agents are not qualified to conduct programs and activities to help commercial farmers.  
30. I respect the county Extension agent's judgment.  
31. I see the Extension agent as a leader in agriculture.  
32. Sometimes Extension agents provide farmers with the wrong information.  
33. Extension agents do not work enough with farmers.  
34. Extension agents are well prepared for their positions.  
35. Extension agents have not worked with farmers in improving marketing facilities for crops.
APPENDIX F

LETTER OF TRANSMITTAL FOR SURVEY INSTRUMENT
January 13, 1982

To: Flue-cured Tobacco Producers

Dear Producer:

You have been selected as one of the few flue-cured tobacco producers in your county to participate in a study to help tobacco growers of Virginia. As a former flue-cured tobacco producer, I am conducting a study of the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service. This study is designed to determine flue-cured tobacco producers' opinions and beliefs about the Extension program in their county. Also, this study will determine how frequently flue-cured tobacco producers participate in the county extension programs.

This is the first study of this nature to be conducted in Virginia. The information received from this study will be used to assist the county extension agents in planning programs that will be more helpful to flue-cured tobacco farmers in Virginia.

Please complete the enclosed questionnaire and return it by January 22, 1982 in the enclosed pre-addressed, stamped envelope. The directions for completing the questionnaire are listed in each section of the questionnaire. Please answer all questions. The answers you provide as an individual will not be shared with anyone. I am only concerned with the results of the total study so your answer will be kept in the strictest confidence. In addition, your name is not needed on the questionnaire. However, the questionnaire has been coded for follow-up purposes only.

As a reward for completing the questionnaire, I have enclosed a stick of big red chewing gum. This is my way, as a graduate student at Virginia Tech, of saying thanks for your cooperation and assistance. I look forward to your immediate reply.

Sincerely,

Lorenza W. Lyons
Graduate Student

LWL/r
enclosure
APPENDIX G

FINAL INSTRUMENT FOR THE STUDY
**FLUE-CURED TOBACCO PRODUCERS SURVEY**

**Background Information**

**Directions:** Please provide the information requested by placing a checkmark (✓) in the appropriate blank, or by writing in the appropriate number. The information you provide as an individual will be kept in strict confidence.

1. How many years have you been farming? ______

2. Is your annual gross farm income ______ Less than $20,000 ______ or more than $20,000? ______

3. What is your tobacco budweight quota? ______

4. How many acres of tobacco do you grow? ______

5. Do you receive the majority of your annual income from a non-farm or non-farm activity? ______

6. Is flue-cured tobacco your main source of farm income? ______ Yes ______ No ______

7. What is your highest grade (education) completed? ______

8. What is your age? ______

9. What is your racial identity? ______ Black ______ White ______ American Indian ______ Hispanic ______ Oriental ______

**Directions:** The following are statements about the Cooperative Extension Service. Please circle T for all true statements and F for all false statements listed in this section.

Please answer all questions.

<table>
<thead>
<tr>
<th><strong>True</strong></th>
<th><strong>False</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>F</td>
</tr>
</tbody>
</table>

1. The main purpose of the county Extension office is to develop programs that will help farmers and other residents solve problems ______

2. Most of the services the county Extension office provides for farmers are also available from the Soil Conservation Service and Forestry Service ______

3. The services provided by the county Extension office are supported by county tax dollars ______

4. The county Extension Service is mainly a soil-testing service ______

5. There are Extension Specialists at Virginia Tech and at the research stations who work with Extension agents in solving farm problems ______

6. The county Extension Service is not concerned with education ______

7. The county Extension Service provides information to small farmers as well as large commercial farmers ______

8. Farmers cannot assist the county Extension staff in planning the yearly Extension program ______

9. There are Extension Specialists at Virginia State University who assist the county Extension staff with agricultural programs ______

10. The county Extension Service is mainly for 4-H boys and girls ______

11. The county Extension Service works only with farmers ______

12. The county Extension Service offers programs in the area of agriculture, home economics, community resource development, and 4-H ______

**Participation in Extension Programs and Activities**

**Directions:** Please check the blank for each question that is the closest representation of your actual contact with the county Extension Service during the last 12 months, or write in the correct number.

1. How many times were you visited by the county Extension agent during the last 12 months? ______

2. How many Extension television programs did you watch during the last 12 months? ______

3. How many times did you visit the county Extension office for agricultural information during the last 12 months? ______

4. How many Extension meetings did you attend during the last 12 months? ______

5. How many Extension bulletins or pamphlets did you read during the last 12 months? ______
6. How many Extension radio programs did you listen to during the last 12 months?
   - None
   - One
   - Two
   - Three
   - Four
   - Five
   - Other (write in number)

7. How many times did you telephone the Extension office for information during the last 12 months?
   - None
   - One
   - Two
   - Three
   - Four
   - Five
   - Other (write in number)

8. How many Extension newspaper articles did you read during the last 12 months?
   - None
   - One
   - Two
   - Three
   - Four
   - Five
   - Other (write in number)

9. How many Extension newsletters did you read during the last 12 months?
   - None
   - One
   - Two
   - Three
   - Four
   - Five
   - Other (write in number)

### Opinion Section

Directions: The following statements are designed to obtain your opinions regarding the county Extension Service program and the county Extension agents. As opinions, they are neither right nor wrong. Please indicate your opinions by circling the response for each statement that represents your true feelings or beliefs. For each statement you will have five possible choices:

SA = Strongly Agree  A = Agree  U = Undecided  D = Disagree  SD = Strongly Disagree

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

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

1. Extension bulletins are very helpful to farmers.
   - SA
   - A
   - U
   - D
   - SD

2. Extension meetings and activities are not scheduled at times when most farmers can attend.
   - SA
   - A
   - U
   - D
   - SD

3. Extension newsletters keep me informed of things I need to know.
   - SA
   - A
   - U
   - D
   - SD

4. Extension programs have not helped farmers to become more efficient.
   - SA
   - A
   - U
   - D
   - SD

5. Extension radio programs provide useful information.
   - SA
   - A
   - U
   - D
   - SD

6. Extension agents do not readily advise farmers of the changes and new developments in agriculture.
   - SA
   - A
   - U
   - D
   - SD

7. I can usually reach an Extension agent when I need one.
   - SA
   - A
   - U
   - D
   - SD

8. Extension agents do not respond immediately to requests for information.
   - SA
   - A
   - U
   - D
   - SD

9. Extension agents conduct meetings on topics that are helpful.
   - SA
   - A
   - U
   - D
   - SD

10. Extension meetings are held in locations where it is not convenient for me to attend.
    - SA
    - A
    - U
    - D
    - SD

11. Farmers have an opportunity to assist Extension agents in determining programs.
    - SA
    - A
    - U
    - D
    - SD

12. Extension meetings are geared more for large commercial farmers.
    - SA
    - A
    - U
    - D
    - SD

13. Extension programs are widely publicized.
    - SA
    - A
    - U
    - D
    - SD

14. Most of the information from the Extension office is old by the time it reaches the farmer.
    - SA
    - A
    - U
    - D
    - SD

15. Information from the Extension office is easy to understand.
    - SA
    - A
    - U
    - D
    - SD

16. I can obtain information from other agencies as readily as from the Extension Service.
    - SA
    - A
    - U
    - D
    - SD

17. The Extension office provides information that is helpful in controlling tobacco insects.
    - SA
    - A
    - U
    - D
    - SD

18. Extension agents do not use computers when working with flue-cured tobacco farmers.
    - SA
    - A
    - U
    - D
    - SD

19. The Extension office provides information that is extremely helpful in preparing flue-cured tobacco plant beds.
    - SA
    - A
    - U
    - D
    - SD

20. The Extension office needs to provide more practical information to flue-cured tobacco farmers.
    - SA
    - A
    - U
    - D
    - SD

21. The Extension flue-cured tobacco variety information is very helpful.
    - SA
    - A
    - U
    - D
    - SD

22. The county Extension flue-cured tobacco programs and activities are not held during the season when the information is needed the most.
    - SA
    - A
    - U
    - D
    - SD

23. I can obtain useful information from the Extension office for controlling tobacco diseases.
    - SA
    - A
    - U
    - D
    - SD

24. The information from the Extension office on flue-cured tobacco fertilization is not very helpful.
    - SA
    - A
    - U
    - D
    - SD

25. Extension agents are qualified to conduct programs in agriculture.
    - SA
    - A
    - U
    - D
    - SD

26. Extension agents are specialists in the major agricultural crops grown in the county.
    - SA
    - A
    - U
    - D
    - SD

27. Extension agents present information to farmers in an understandable manner.
    - SA
    - A
    - U
    - D
    - SD

28. My farming operation is too specialized to seek assistance from local Extension agents.
    - SA
    - A
    - U
    - D
    - SD

29. Extension agents are not qualified to conduct programs and activities to help commercial farmers.
    - SA
    - A
    - U
    - D
    - SD

30. I respect the county Extension agent's judgment.
    - SA
    - A
    - U
    - D
    - SD

31. I see the Extension agent as a leader in agriculture.
    - SA
    - A
    - U
    - D
    - SD

32. Sometimes Extension agents provide farmers with the wrong information.
    - SA
    - A
    - U
    - D
    - SD

33. Extension agents do not work enough with farmers.
    - SA
    - A
    - U
    - D
    - SD

34. Extension agents are well prepared for their positions.
    - SA
    - A
    - U
    - D
    - SD

35. Extension agents have not worked with farmers in improving marketing facilities for crops.
    - SA
    - A
    - U
    - D
    - SD
APPENDIX H

FOLLOW-UP POSTCARD TO NONRESPONDENTS
January 25, 1982

To: Flue-Cured Tobacco Producers

Dear Producer:

Several days ago you received a questionnaire from Virginia Tech seeking your opinions and beliefs about the Virginia Cooperative Extension Service Program in your county. Since you were selected as one of a small number of flue-cured tobacco producers to participate in this study to help other tobacco growers of Virginia, it is important that you complete and return your copy of the questionnaire. If you have not returned your questionnaire, please take a few minutes to do so today.

Your cooperation in this matter will be greatly appreciated. I look forward to your immediate reply.

Sincerely,

Lorenza Lyons
Graduate Student
APPENDIX I

SECOND LETTER TO NONRESPONDENTS
To: Flue-cured Tobacco Producers

Dear Producer:

You have been selected as one of the few flue-cured tobacco producers in your county to participate in a study to help tobacco growers of Virginia. As a former flue-cured tobacco producer, I am conducting a study of the attitudes flue-cured tobacco producers have toward the Virginia Cooperative Extension Service. This study is designed to determine flue-cured tobacco producers' opinions and beliefs about the Extension program in their county. Also, this study will determine how frequently flue-cured tobacco producers participate in the county extension programs.

This is the first study of this nature to be conducted in Virginia. The information received from this study will be used to assist the county extension agents in planning programs that will be more helpful to flue-cured tobacco farmers in Virginia.

Please complete the enclosed questionnaire and return it by February 15, 1982 in the enclosed pre-addressed, stamped envelope. The directions for completing the questionnaire are listed in each section of the questionnaire. Please answer all questions. The answers you provide as an individual will not be shared with anyone. I am only concerned with the results of the total study so your answer will be kept in the strictest confidence. In addition, your name is not needed on the questionnaire. However, the questionnaire has been coded for follow-up purposes only.

Your cooperation in this matter will be greatly appreciated. I look forward to your immediate reply.

Sincerely,

Lorenza W. Lyons
Graduate Student

February 8, 1982
APPENDIX J

MEAN SCORE, STANDARD DEVIATION, AND t-VALUE FOR PRODUCERS' ATTITUDES TOWARD THE VIRGINIA COOPERATIVE EXTENSION SERVICE FLUE-CURED TOBACCO PROGRAM BY COUNTY
Mean Score, Standard Deviation and F-Ratio of Producers' Attitudes Toward the Virginia Cooperative Extension Service Flue-cured Tobacco Program by County

<table>
<thead>
<tr>
<th>County</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>F-Ratio</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunswick</td>
<td>14</td>
<td>32.07a</td>
<td>3.40</td>
<td>2.61</td>
<td>0.0050</td>
</tr>
<tr>
<td>Patrick</td>
<td>12</td>
<td>30.91a</td>
<td>3.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charlotte</td>
<td>7</td>
<td>29.50a</td>
<td>2.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinwiddie</td>
<td>13</td>
<td>29.38a</td>
<td>4.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Franklin</td>
<td>17</td>
<td>28.17a</td>
<td>1.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Halifax</td>
<td>64</td>
<td>29.38a</td>
<td>3.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunenburg</td>
<td>11</td>
<td>30.90a</td>
<td>3.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>29</td>
<td>27.35a</td>
<td>3.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campbell</td>
<td>19</td>
<td>30.38a</td>
<td>3.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pittsylvania</td>
<td>66</td>
<td>29.18a</td>
<td>3.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>252</td>
<td>29.37</td>
<td>3.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significantly different at the .05 level

^Possible range of 8 to 40
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The two page vita has been removed from the scanned document. Page 2 of 2
This study was designed to investigate the attitudes, degree of participation, and knowledge of both small and large flue-cured tobacco producers regarding the Virginia Cooperative Extension Service.

The population for this study consisted of the 6,937 flue-cured tobacco producers from the ten largest flue-cured tobacco producing counties in Virginia. A randomly selected proportional stratified sample was used to select the 400 producers included in the study. Producers in the sample were later grouped, as small or large producers, based on the median tobacco acreage of the producers in the sample which was 9 acres.

A four-part survey instrument was used to collect data. The mailed instrument was returned by 252 producers (63 percent). Statistical techniques used to analyze the data were frequencies, percentages, independent t-test, Pearson Product-Moment Correlation, and One-Way Analysis of Variance. Eight null hypothesis statements were established and tested for statistical significance.

The major conclusions reached in this study were: (1) Large flue-cured tobacco producers' attitudes were more positive than the small flue-cured tobacco producers' attitudes toward the Virginia
Cooperative Extension Service flue-cured tobacco program. (2) Small flue-cured tobacco producers had a less positive attitude than the large flue-cured tobacco producers toward the overall agricultural program of the Virginia Cooperative Extension Service. (3) Both small and large flue-cured tobacco producers possessed positive attitudes toward the qualifications of the Virginia Cooperative Extension Service local professional staff. (4) Large flue-cured tobacco producers participated in more programs of the Virginia Cooperative Extension Service than the small flue-cured tobacco producers. (5) Both small and large flue-cured tobacco producers were knowledgeable of the functions of the Virginia Cooperative Extension Service. (6) Producers' knowledge of the Virginia Cooperative Extension Service functions was positively related to their attitudes toward the Virginia Cooperative Extension Service. The data suggested that flue-cured tobacco producers had positive attitudes toward the Virginia Cooperative Extension Service.