

THE IDENTIFICATION OF OPINION LEADERS
AMONG OKLAHOMA COOPERATIVE EXTENSION
AGRICULTURE EDUCATORS

By

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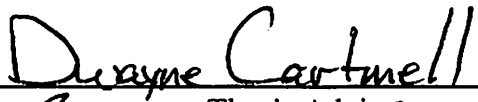
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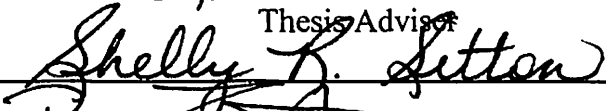
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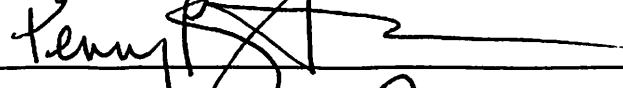
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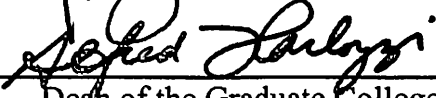
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"Being powerful is like being a lady. If you have to tell people you are, you aren't." ~Margaret Thatcher

Thank you to all the wonderful people in my life who encouraged me throughout this process. This work would not have been possible without your expertise, help, honesty, and friendship. I will eternally be indebted for your assistance.

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CHAPTER I

INTRODUCTION

Background and Setting

The Smith-Lever Act of 1914 established the Cooperative Extension Service. Prior to the act, farmers sought so much help from individual researchers at land-grant institutions that scientists often complained they didn't have enough time to perform their required duties (McDowell, 2001). The Cooperative Extension Service has filled this void of providing information to the farmer by serving as the link between research institutions and the public.

For more than 75 years, the Oklahoma Cooperative Extension Service has served as a resource center for Oklahoma citizens. Oklahoma State University has used the Extension Service to disseminate research and information to consumers through a wide variety of programs, activities, and events.

The Smith-Lever Act's purpose remains to "aid diffusion among the people of the United States useful and practical information ... and to encourage the application of the same" (McDowell, 2001, p. 7). Rogers (1995) identifies agriculture Extension agents as change agents. According to Rogers, "a change agent is an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency" (1995, 27). Change agents help people with the adoption of new technologies and ideas.

Opinion leaders communicate between innovators and the general public. Rogers (1995) states that opinion leaders are not innovators, but they are generally more

innovative than their followers. Thus, it is the opinion leader's job to communicate between the two groups.

Problem Statement

There has been no research conducted to identify opinion leaders among Oklahoma Cooperative Extension Service agriculture educators. To effectively use the change agent strategy for the diffusion of innovation, educators within OCES regarded as opinion leaders need to be identified.

Purpose of the Study

The purpose of this study is to determine the opinion leaders among Oklahoma Cooperative Extension agriculture agents. This study will work to develop a profile, determine innovativeness, describe social participation, and describe the cosmopolitaness of OCES agriculture educators. It will also develop a profile of opinion leaders among OCES agriculture educators.

Objectives of the Study

The following objectives served as guidelines for the study:

1. Develop a profile of OCES agriculture agents.
2. Determine innovativeness of OCES agriculture agents.
3. Describe social participation of OCES agriculture agents.
4. Describe cosmopolitaness of OCES agriculture agents.
5. Develop a profile of opinion leaders among OCES agriculture agents.

Population

The study consisted of those Oklahoma Cooperative Extension Service agriculture agents working in the OCES during May 2004. Through the use of the OSU Division of Agricultural Sciences and Natural Resources Personnel Directory (2003), 66 agents were identified as working on the county level at the time this study was conducted.

Significance of the Study

This study is important because it focuses on Extension's role in the mission of Oklahoma State University and the organization's ability to adjust to change. OSU was designed with three focus areas: teaching, research, and extension. Ideally, all three are dependent upon the others.

Assumptions

The following assumptions were made regarding this study:

1. The instruments used in this study would elicit accurate responses from all participants.
2. Study participants would honestly answer questions to the best of their ability.

Limitations of the Study

The author recognizes the following limitations:

1. The identification of agriculture agents is subject to error because of the subjectiveness of judgment given by agents when asked whom they would have sought for advice regarding a certain agricultural area.
2. The inability of an agent to recall the exact date he/she adopted a particular practice limits the study in determining the innovativeness of an agent.
3. The inability of an agent to recall the exact number of meetings and programs attended within the last two years limits the study determining the cosmopolitaness of an agent.

Definition of Terms/Operational Definitions

Adoption- A decision to continue full use of an innovation (Rogers, 1995).

Adoption process- The mental process through which an individual passes from first hearing about an innovation to final adoption. The five stages in the adoption process are: awareness, interest, evaluation, trial, and adoption (Rogers, 1995).

Cosmopolitaness- The degree to which an individual's orientation is external to a particular social system (Rogers, 1995).

DASNR- Abbreviation for Division of Agricultural Sciences and Natural Resources at Oklahoma State University.

Innovation- An idea perceived as new by the individual (Rogers, 1995).

Innovativeness- The degree to which an individual is earlier in adopting new ideas than other members of the social system (Rogers, 1995).

OCES- Abbreviation for Oklahoma Cooperative Extension Service.

Opinion leader- An individual who communicates between innovators and the general public. Opinion leaders are not innovators, but they are generally more innovative than their followers (Rogers, 1995).

Social system- A population of individuals who are functionally differentiated and engaged in collective problem solving (Rogers, 1995).

CHAPTER II

REVIEW OF SELECTED LITERATURE

This chapter reviews literature pertaining to the cooperative extension service, diffusion of innovation, opinion leadership theory, and change agent theory. Specifically, elements needed for the diffusion of innovations, innovation adopter categories, characteristics of opinion leaders, and change agent identification methods will be discussed. In addition, this chapter will focus on how the Cooperative Extension Service perceives and adjusts to change.

This review focuses on articles found in refereed and non-refereed journals, published texts, master's theses, and doctoral dissertations.

Background/Setting

The purpose of Cooperative Extension is to help “people improve their lives through an educational process that uses scientific information to address issues and needs” (USDA, 1993 as cited by Maher, 1997, p. 2).

As cited by Maher (1997, p.1), Representative Vernon J. Ehlers (1996) once said, “One of the best mechanisms that we have experienced in this nation for transfer of knowledge from basic science to the workplace is one that has worked well for a century, the Cooperative Extension Service at agricultural land-grant universities.”

Maher (1997) noted changing demographics among the rural community and an increased demand by the urban sector of the population as important factors facing

today's Cooperative Extension Service. While Extension has worked well in the past, times are changing. Like every other organization, Extension must refocus and face the challenges of an ever-changing society (Maher, 1997).

The Oklahoma Cooperative Extension Service is currently undergoing a restructuring process. However, land-grant institutions working to improve Extension are not a new concept. In 1989, a research study conducted by Thompson at the University of California-Davis revealed that 26 percent of all agricultural deans felt Cooperative Extension needed to operate on a multi-county or regional level. According to Thompson (1989), the deans did concede that "Cooperative Extension has been very responsive. On short notice, they have been willing to retool to help farmers" (p. 5).

Thompson's (1989) study identified seven points regarding the structure of Cooperative Extension: (a) a need for more specialization and higher-level subject-competency in Extension; (b) a need for Cooperative Extension to operate more on a regional level; (c) a need for Cooperative Extension to make greater use of an agricultural systems approach in research; (d) a need for more involvement in research by Extension personnel; (e) a need for Cooperative Extension to be closely integrated into colleges of agriculture; (f) a need for more use of technology in both information transfer and computer use; and (g) a greater need for more multidisciplinary work.

The purpose of Cooperative Extension hasn't changed since it's inception in 1914. However, methods supporting this purpose have changed and will continue to change. Thus, the OCES must be prepared to deal with change in the future.

Information Dissemination

The dissemination of information is one key component to the Cooperative Extension Service's purpose. Technology has changed how information is disseminated but the purpose still remains the same.

In 2001, the University of Kentucky sponsored a study to see if Kentucky citizens were satisfied with the programs and services offered by the Kentucky Cooperative Extension Service. Rennekamp (2001) found that the mean score for overall citizen satisfaction with Extension was 4.6 on a five-point Likert scale with five being "very satisfied." Using data collected from questionnaires and small group discussions, Rennekamp (2001) also outlined the following key points to help Extension stay abreast of its changing audiences: (a) continue to emphasize local program development; (b) explore new options for program delivery; (c) build on a history of success; (d) capitalize on a reputation of objectivity; (e) maintain friendly and courteous service; (f) increase awareness of Extension; (g) reach out to new audiences; and (h) use technology to meet customer needs.

In 1928, the Iowa State Agricultural Experiment Station released hybrid corn to farmers (Stephenson, 2003). The Extension Service and/or commercial seed companies promoted the hybrid seed, which offered yield advantage over traditional varieties of corn. By 1940, hybrid corn was planted by most Iowa corn growers (Ruttan, 1996).

Ryan of Iowa State University received funding in 1941 to examine the spread of hybrid corn. He presumed more knowledge and a clearer understanding of the diffusion process of hybrid corn would help disseminate other innovations developed by the Iowa State Agricultural Experiment Station (Ruttan, 1996). The resulting study by Ryan and

Goss (1943) showed that a small number of farmers initially planted the hybrid corn. From these initial few, the innovation diffused to others. The study also found that neighbors were the most influential source of information on this new innovation. When farmers interacted with other farmers who had planted the hybrid corn, they planted (adopted) it, too (Stephenson, 2003).

Their findings implied that if innovative farmers were targeted to adopt innovations other farmers would soon follow, speeding up the adoption of new agricultural practices. The idea was simple and compelling, and it provided the basis for a model of agricultural development the Extension Service continues to use today (Stephenson, 2003).

Theoretical Framework

The theoretical framework for this study was diffusion of innovation as outlined by Everett Rogers in his book *Diffusion of Innovations* (1995).

Opinion Leaders

According to Freeland (1993), “The key for successful organizational communication today is to influence the peer opinion leaders” (p.93). In his opinion, managers should implement three steps to enlist the aid of peer opinion leaders:

1. Identify the peer opinion leaders.
2. Develop a strategy for the effective use of the peer opinion leader.
3. Use testimonial statements, print communications and employee meetings for peer opinion leader to be heard (Freeland, 1993).

Employee research offers a major opportunity to integrate peer opinion leaders into the early stages of communication planning. These surveys and focus groups among employees allow downward communication within an organization. By using employee research, signals are sent into the ranks of the organization about whatever management is considering. Peer opinion leaders, in turn, reinforce these signals to create support among the employees. (Freeland, 1993).

According to Freeland (1993), communications within the organization will have a positive impact. Communication driven by peer opinion leaders also offers these intangible values:

1. The probability that employees will be sold on an idea is increased since the communication is believable.
2. Management and non-management employees develop a trust in each other because they are working toward the same goals.
3. Positive momentum develops throughout the entire organization. There is less frustration and constructive change occurs more readily (Freeland, 1993).

In short, Freeland (1993) said that virtually any behavior worth modeling can be influenced by peer opinion leaders. Peer-opinion leaders "... ensure maximum positive impact of communication" (Freeland, 1993, pg. 93).

People tend to congregate toward opinion leaders because they are trusted members of society, and opinion leaders represent the norms of an organization (Leonard-Barton, 1985). However, opinion leaders are not always classified as innovators. "Opinion leaders are innovative only if their organizations' norms favor change" (Kanter, 1988, p. 182).

The ability of opinion leaders to influence decision-making may be related to the development of group norms. Opinion leaders can be seen as repositories of organizational “know-how” and this research implies that they are able to influence decision-making (Harkola, 1995, p.8).

Harkola (1995) also concluded opinion leaders may have a major impact on their local environment as well.

Characteristics of Opinion Leadership

Opinion leaders convince other members of the population to adopt new innovations. While they may not be considered the most innovative, their peers hold them in high esteem.

According to Rogers (1995), the following are key characteristics of opinion leaders:

1. Opinion leaders have greater exposure to mass media than non-opinion leaders.
2. Opinion leaders are more cosmopolite than non-opinion leaders.
3. Opinion leaders have greater change agent contact than non-opinion leaders.
4. Opinion leaders have greater social participation than non-opinion leaders.
5. Opinion leaders have higher socioeconomic status than their followers.

Methods of Opinion Leadership Identification

Rogers (1995) identifies four main methods of identification for opinion leaders: sociometric, informant’s ratings, self-designating, and observation. Deciding which method to use when identifying leaders is usually based on convenience. Because all methods have a positive correlation to each other, all four are considered to be about equally valid (Rogers, 1995).

Sociometric Method

The sociometric method asks respondents whom they would seek for information on a given topic (Weimann, 1994). The members who are chosen the greatest number of times are then identified as opinion leaders.

One advantage of the sociometric method is that is easy to administer and very adaptable. A disadvantage is that it requires a large number of respondents to locate a small number of opinion leaders (Rogers, 1995).

Self-designating Method

“The self-designating method consists of asking respondents a series of questions to determine the degree to which they perceive themselves to be influential” (Weimann, 1994, p. 33). It is noted as a highly valid measure of opinion leadership (Rogers, 1995).

This method works well when questioning a random sample of the population (Rogers, 1995). However, one disadvantage is that “this method is dependent upon whether the respondents can accurately identify and report their self-images” (Liston, 2002, p. 15).

Key-informant Rating Method

Another method of opinion leadership identification is the key-informant method. According to Weimann (1994), key informants are especially knowledgeable about the communication and social ties in their group. Rogers (1995) noted the key informant method as a cost and time saving method when compared to the sociometric method. Disadvantages, however, are that informants must be extremely familiar with the group they are asked to evaluate (Rogers, 1995) and willing to participate in the survey.

Observation Method

The observation method requires an investigator to observe and record communication behavior within a group or social system (Rogers, 1995). Weimann (1994) noted the directness of this method as an advantage. Because the researcher does not have to rely on indirect measures, the method has a high validity.

History of Human Technological Innovation

According to a research article by Keith Smith in the *Organization for Economic Co-operation and Development* proceedings for 2001, the system approach to innovation is a complex collective phenomenon. He argues that the interactions between institutions and industry, in both education and knowledge creation functions have been fundamental in shaping innovation capabilities and economic performance.

Easterlin (1981, as cited by Smith, 2001) presented an argument on the link between education and economic growth. Easterlin went beyond the idea that economic growth is an extension of production, and followed the thinking of Landes (1980, as cited by Smith, 2001) in viewing it in terms of the creation and use of knowledge:

The heart of the whole process of industrialization and economic development is intellectual: it consists in the acquisition and application of a corpus of knowledge concerning techniques that, ways of doing things (Landes, 1980 cited in Smith, pg. 7).

Easterlin (1981, as cited by Smith, 2001) went beyond seeing technology and knowledge as determinants of growth. He saw knowledge creation as itself requiring explanation and went on to argue that education (particularly mass basic education) was a necessary condition for development.

According to Smith (2001), Easterlin's (1981) emphasis on human capabilities has been followed and developed in modern research on innovation:

Basic to all innovation analysis is the idea that innovation and the development of new technologies occur through the activities of skilled personnel, researchers, engineers, and managers. Innovation is a social process, involving not only new technologies (such as new items or equipment), but also new forms of knowledge, skills, and competences. Competence is embodied in the collective experience and activities of the people who produce and implement a new technology; it relates not only to research results, but also to matters of organization, problem-solving, marketing, and so on (Easterlin as cited in Smith, 2001, p. 8).

New technologies have their main economic effect through the diffusion, or spread, of the technology. "Just as innovation is a social process, so is diffusion; it relies on channels of communication, through which knowledge, skills, and competences can spread" (Smith, 2001, p.8).

The physical movement of skilled personnel is one of the most important channels of communication (Smith, 2001). In a combined study by Levin, Klevorick, Nelson, and Winter (1987, as cited by Smith, 2001) on the flow of technological knowledge, they examined a range of potential channels of information flow: licenses, patent disclosures, etc. The movement of personnel—specifically, the hiring of employees in research and design away from innovating firms—was closely linked with other forms of information flow involving interpersonal communication (technical meetings, informational conversation, etc.).

Personnel mobility is widely emphasized within the historical literature on the spread of industrialization. While there exists continuing debate about the specific role of scientific understanding in the Industrial Revolution, there is agreement that early industrial technologies depended heavily on human skills, particularly the skills of the machine operators. This was definitely the case with such technologies as iron-making or early chemical production where the timing of the production processes was crucial (Smith, 2001).

A good example of industrial technology—or the lack thereof—takes place in the early United States. According to Smith (2001), Jeremy (1981) examined several cases where Americans quickly acquired British machinery in the early 1780s, even though the export of the machinery was illegal, and then were unable to operate it (Smith, 2001). A complete spinning machine was acquired in 1783, but no one was able to assemble it within four years of its arrival, let alone operate it (Smith, 2001).

The problem with the lack of human skill was understood by the new American government. Alexander Hamilton, Secretary of the Treasury, and his assistant, Tench Coxe, organized a campaign to recruit skilled workers and engineers from Britain to the newly formed America (Smith, 2001).

Jeremy's (1981) study showed that the barriers to technology transfer "between Britain and America were largely overcome by the activities of recruiting agents, the readiness of workers to ignore the law in pursuit of better prospects in America, and the fact that the new technologies were embodied in the artisan" (Jeremy as cited by Smith, 2001, p. 9). According to Smith (2001), Jeremy's (1981) study revealed that the artisan himself was the dominant technology carrier during the Industrial Revolution.

The study of European industrialization shows a similar theme. Mathias explored the diffusion of technologies from Britain to throughout Europe from the early 18th century and showed that the movement of skilled workers was central to the diffusion of the techniques of the early industrial process. Burland (1989, as cited by Smith, 2001) showed that British textile machinery firms organized a skilled labor supply for their western Europe customer. Geographical mobility was required of the skilled British workers. More recently, according to Smith (2001), John R. Harris (1998) showed that technological diffusion in the 19th century occurred as a result of what would today be called industrial espionage, and that personnel mobility was a main component of such diffusion.

No reason exists to think that these processes have diminished in importance. Parker (1971) stated that "... apart from some striking cases of imitation, the diffusion of technology in the modern world has been largely limited by technologies not unfamiliar to St. Paul or Mohammed" (as cited by Smith, 2001, p. 9).

Diffusion of Innovation

Rogers (1995) defined diffusion as the "process by which an innovation is communicated through certain channels over time among the members of a social system" (p.5). He continued by saying that "diffusion is a special type of communication concerned with the spread of messages that are perceived as new ideas" (p.5). Rogers identified four main elements in the diffusion of new ideas: innovation, communication channels, time, and a social system (Rogers, 1995).

Innovation

“An idea or practice perceived as new by an individual,” is how Rogers (1995, p.11) defined innovation. In reality, the “newness” of an innovation does not matter; however, its perceived newness by an individual is key. According to Liston (2002), “newness may be expressed in terms of knowledge, persuasion, or a decision to adopt” (p.8).

There are five key characteristics used to describe innovations. Because each new idea is perceived differently, these characteristics help illustrate the different rates of adoption (Rogers 1995). Rogers (1995) identified (a) relative advantage, (b) consistency, (c) complexity, (d) triability, and (e) observability as requirements for innovation adoption.

The relative advantage of an idea refers to how much better the new idea is perceived to be over the old one. Actual advantage plays no role, however. The more advantageous an idea appears, the quicker it will be adopted (Rogers 1995).

Consistency is also required for an innovation to be adopted. The new innovation must remain consistent with already established norms, values, and needs. If the innovation is not compatible, it cannot be adopted (Rogers, 1995).

Rogers (1995) cites complexity as the third major characteristic of an innovation. The simpler an idea or innovation is to understand, the better its chances for adoption.

Triability, or the ability to experiment with the innovation, is also important. Triable innovations present less uncertainty for the user and are more likely to be adopted (Rogers, 1995).

Observability is the final characteristic of an innovation. The more results an individual can see from an innovation, the more likely and quickly he/she is to adopt it (Rogers, 1995).

Innovation Adopter Categories

According to Rogers (1995), the population can be divided into five groups in regard to innovation adoption. Actual innovators comprise 2.5 percent of the population. These individuals are the first to have the latest technologies and generally have a substantial amount of money. Although innovators are not viewed as opinion leaders by other members of society, they do take on a “gatekeeping role in the flow of new ideas into a system” (Rogers, 1995, p. 264). Innovators are also categorized as cosmopolites.

In Rogers’ model, early adopters make up 13.5 percent of the total population. While more localite than innovators, early adopters generally have the highest degree of opinion leadership (Rogers, 1995). Potential adopters of innovations seek the advice of early adopters. This category is also sought by change agents to help speed the diffusion process (Rogers, 1995).

The early majority consists of 34 percent of the population. This category generally adopts an innovation just before the average member of society. Early majority members frequently interact with their peers; however, they rarely hold opinion leadership positions (Rogers, 1995).

As the name implies, the late majority of the population adopt an innovation just after the average member of society. This category is made up of 34 percent of the population. Often times, innovations are adopted out of economic necessity or peer pressure (Rogers, 1995).

Laggards make up the remaining 16 percent of the population. Laggards tend to be suspicious of both innovations and change agents. Laggards are the most localite of the categories. They like to be sure that an innovation will not fail before they consider adoption (Rogers, 1995). Figure 1 illustrates Rogers' innovation adopter categories.

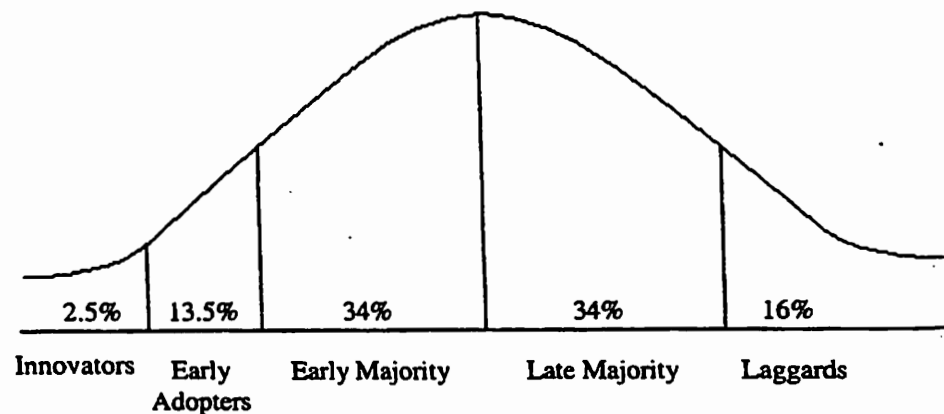


Figure 1. Rogers' (1995) innovation adopter categories.

Communication Channels

Rogers (1995) defines a channel as “the means by which a message gets from the source to the receiver” (p. 194). Channels can be categorized as either interpersonal (mass media) or originating from local or cosmopolite sources.

It is important to note that “mass media channels are relatively more important at the knowledge stage and interpersonal channels are relatively more important at the persuasion stage in the innovation-decision process” (Rogers, 1995).

Time

According to Rogers (1995), the innovation-diffusion process begins when an individual gains knowledge of an innovation, forms an attitude toward that innovation, makes a decision to adopt or reject the innovation, implements and uses the idea, and obtains confirmation for his/her decision. Figure 2 illustrates the innovation-diffusion process.

Knowledge --- Persuasion --- Decision --- Implementation --- Confirmation

Figure 2. Innovation-diffusion process.

Social System

A social system is a group of related units all working to solve the same problems (Rogers, 1995). Diffusion occurs in all social systems; however, the rate of adoption within each system varies greatly.

When discussing the importance of social groups in the diffusion of innovation process, Lionberger and Gwin (1982) identified five key points. Members of a social system associate more with each other than with non-members and have feelings of belonging. Members know each other better and trust fellow members more than outsiders. Members tend to share standards, thoughts, and beliefs, and expect other members to conform to them. Members have ways of bringing pressure on persons who don't conform. Finally, group members help each other, (Lionberger & Gwin, 1982).

Contributions, Challenges, and Criticisms of Diffusion Research

An exhaustive search found Everett Rogers to be the expert on diffusion of innovation theory. However, no theory or theorist stands unopposed. The following section is devoted to the four short-comings Rogers himself identifies in his diffusion of innovation theory.

Pro-Innovation Bias

According to Rogers (1995), the pro-innovation bias states that an innovation should be adopted by all members of a society or social system and that the innovation should not be re-invented or rejected. It is also important to note that the pro-innovation bias is implied, rather than directly stated in diffusion publications. “The bias leads diffusion researchers to ignore the study of ignorance about innovations, to overlook re-invention, and to fail to study antidiffusion programs designed to prevent the diffusion of ‘bad’ innovations” (Rogers, 1995, p.100).

Individual-blame Bias

Individual-blame bias causes research to side with change agents that promote innovations instead of individuals who are potential adopters (Rogers, 1995). According to Rogers (1995), how a problem is defined often determines how it is solved and the effectiveness of the solution. “A frequent error is to overstress individual-blame in defining a social problem,” (Rogers, 1995, p.115).

Recall Problem

Another main criticism of diffusion research is the ability of respondents to recall the exact time they adopted an innovation (Rogers, 1995). Rogers states “Diffusion is a process that occurs over time, so there is no way to avoid including time when one

studies diffusion” (p.122). Respondents are asked to look back in time and try to reconstruct when they adopted an innovation. Often times, a respondents’ ability to do this is not completely accurate (Rogers, 1995).

Equality

Equality is the fourth main criticism of the diffusion of innovation theory. According to Rogers (1995), “When the issue of equality has been investigated, we often find that the diffusion of innovations widens the socioeconomic gap between the higher and the lower status segments of a system” (p. 125). In other words, socioeconomic gaps are widened by the spread of new ideas.

Chapter Summary

This chapter provided an overview of literature concerning the diffusion of innovation, the opinion leadership theory, and change agent theory.

The Cooperative Extension Service has been serving the needs of U. S. citizens for more than 75 years. Extension is a form of public service, which brings university research to the general population. In essence, Extension is designed to assist “people who are not registered in degree programs and counted as part of the university student body” (McDowell, 2001, p. 21).

While the needs of the population and the way information is accessed are changing at record rates, the mission of Cooperative Extension has remained the same ... to help people. To compete in today’s fast-paced information society, Extension must adapt to meet the needs of its citizens (Cartmell, Orr & Kelemen, 2004).

As evident by the literature review, citizens have an overall positive perception and satisfaction with Cooperative Extension. It can be concluded that citizens like face-to-face contact with Extension personnel and feel Extension field staff do a good job of presenting technical information. However, if Extension is going to survive in the 21st century, it must continue to adapt to change and remain on the cutting edge of both the scientific and information community.

CHAPTER III

METHODOLOGY

This chapter describes the methods and procedures used to conduct this study. It contains a description of the research design and population. The instrument used was a written, faxed, descriptive survey. The process for accomplishing the objectives of the study through administration and statistical analysis of the survey are presented as well.

Institutional Review Board

Prior to conducting research, permission was granted from the Oklahoma State University Office of University Research and the Institutional Review Board (IRB) to conduct this study (Appendix A). These two entities review all research involving human subjects to guarantee the protection of the participants' rights and welfare. The Institutional Review Board assigned AG0429 as the study's application number.

Purpose of the Study

The purpose of this study is to determine the opinion leaders among Oklahoma Cooperative Extension agriculture agents. This study will work to develop a profile, determine innovativeness, describe social participation, and describe the cosmopolitaness of OCES agriculture educators. It will also develop a profile of opinion leaders among OCES agriculture educators.

Objectives of the Study

The following objectives served as guidelines for the study:

1. Develop a profile of OCES agriculture agents.
2. Determine innovativeness of agriculture agents.
3. Describe social participation of agriculture agents.
4. Describe cosmopolitaness of agriculture agents.
5. Develop a profile of opinion leaders among agriculture agents.

Population

The study consisted of those Oklahoma Cooperative Extension Service agriculture agents working in the OCES during May 2004. Through the use of the OSU Division of Agricultural Sciences and Natural Resources Personnel Directory (2003), 66 agents were identified as working on the county level at the time this study was conducted. The response rate for this census study was 72.7 percent.

Research Design

The research for this study was a descriptive survey of the population. According to Leedy & Ormand (1985), descriptive research describes those conditions which actually exist. Descriptive research goes beyond gathering and collecting data by interpreting meaning in the data. Ary, Jacobs and Razavieh (1996) noted that descriptive research involves description, not manipulation of variables. Inferential statistics were used in reporting the results as this was a census study.

Instrumentation

The instrument for this study was developed and used by Johnson (1960) and adapted by Liston (2002). Because of a difference in the population being surveyed, a change in terminology was needed. This instrument was modified by adding the term Oklahoma Cooperative Extension agriculture educator in the place of agricultural education teacher or instructor. The instrument (Appendix B) was divided into sections and below is an explanation of the modifications made within each section of the survey for the study.

Sociometric Section

The categories used to determine if respondents would seek information from other OCES agriculture agents were expanded and updated from Liston's (2002) study. The researcher, thesis committee, and a panel of experts examined various aspects of both Extension and agricultural education to identify areas where an Extension educator might seek advice.

Cosmopolitaness Section

Regional print agricultural publications were selected for this section of the survey. The researcher, thesis committee, and a panel of experts selected the publications to list on the survey. The formatting of the study adhered to Liston's (2002) study.

Sources of Information Section

Minor content changes were made to Section C of the instrument. The changes reflected references to resources available to Extension educators, such as fact sheets and district specialists. No other content changes were made.

Innovativeness Section

Not all of the innovations selected by Liston (2002) were relevant for Cooperative Extension educators. To ensure the innovations pertained to Cooperative Extension, the researcher, thesis committee, and a panel of experts compiled a list of relevant innovation practices. Practices in a variety of areas were selected based on relevance and the list used by Liston (2002).

Social Participation Section

The section addressed the social participation of OCES agriculture educators. The organizations the educators participated in were divided into two sections: community and professional. This followed the changes made in the Liston (2002) study. All other information was identical to the original survey.

Demographics Section

The last section of the survey included demographic questions. Dillman (1999) suggested demographic questions should be included at the end because these questions cause respondents to lose “connectedness” to the study. Therefore, demographic questions were the last section. Questions regarding available technology, Internet access, and how OCES agriculture agents prefer to receive information were added to this section.

Data Collection Procedures

Previous Studies

Johnson (1969) collected data on agricultural education teachers at a statewide agriculture teachers’ meeting in South Carolina during the 1959-1960 school year.

Teachers not in attendance were later contacted. District supervisors were given instructions regarding the Q-sort (Appendix C) and completed their portion of the study at the same time the teachers did.

Liston (2002) collected data on Oklahoma agriculture instructors in the Shawnee Personal Improvement district. Teachers were individually contacted and met with Liston to personally complete the survey. Central District Program Specialist G. T. Moody completed the Q-sort section of the study.

Present Study

After reviewing multiple data collection methods and the logistics of each, it was decided that a faxed survey would be the best method of data collection for this particular audience taking into account available technology, location, and ease of returning the instrument.

A panel of experts (Appendix D) reviewed the instrument for content and face validity as suggested by Tuckman (1978). The panel included three faculty members at Oklahoma State University in the Department of Agricultural Education, Communications, and 4-H Youth Development, the assistant director of 4-H Youth Development, and the director of the 4-H Foundation. The selection of the panel of experts was based on knowledge of Extension, agriculture Extension agents, and research methods. The panel found the questionnaire to be valid for this study. Instrument revisions were made based upon the recommendations of the panel.

The instrument was pilot tested using OCES area specialists because their position duties make them similar to agriculture Extension educators. The researcher had difficulty getting responses from the area specialists, therefore, reliability was determined

by comparing the surveys of early and late respondents. Reliability was assessed by the participants' ability to consistently answer the questions without confusion. Since there were no scaled items on the instrument, it was unnecessary to run a statistical analysis such as a Chronbach's Alpha (Dillman, 2003).

When the survey was faxed to each OCES agriculture agent, a letter explaining the intent of the research was faxed as well (Appendix E). The instrument was randomly number-coded so each respondent would remain anonymous.

Originally, the study was designed to use the key-informant, self-designating, and the sociometric methods for the identification of opinion leaders. However, the key-informant information could not be obtained, and the self-designating method served as the primary identification method of opinion leaders. Since the key-informant information was not available for this research, the study differs from Liston's (2002) study because correlations between the three identification methods could not be completed.

Analysis of Data

To analyze the data collected from this research, the Statistical Package for Social Sciences (SPSS) 11.0 was used. The data were recorded in Microsoft Excel and then converted to the SPSS software for analysis. Data from the instrument were both descriptive and correlative.

Self-designating Formula

As discussed in Chapter II, the self-designating method "consists of asking respondents a series of questions to determine the degree to which they perceive

themselves to be influential” (Weimann, 1994, p. 33). Section A of the survey asked respondents to mark either a “yes” or “no” after each question. A score of two was awarded for each “yes” while a score of one was awarded for each “no” answer. After all questions were completed, the scores of each individual respondent were tallied.

Cosmopolitaness

According to Rogers (1995), cosmopolitaness is the degree to which an individual’s orientation is external to a particular social system. Section B of the survey asked respondents to mark how often they read each publication listed. Their choices included (a) read regularly, (b) seldom read, (c) receive but do not read, and (d) do not receive. Read regularly received a ranking of four; seldom read received a ranking of three; received but do not read received a ranking of two; do not received was given a ranking of one. The scores for each publication were averaged to find the cosmopolitaness for each publication.

Innovativeness

Just as in the studies conducted by Johnson (1968) and Liston (2002), the innovativeness of the population was calculated using the formula developed by Christiansen (1965). To determine the innovativeness of OCES agriculture educators, a date for each practice was determined. All dates were determined based on historical readings of the topics and conversations with panel of experts members and others familiar with the Oklahoma Cooperative Extension Service. The dates for innovations included the following:

1. Biotechnology units: 1970
2. Instructional partnerships: 1970

3. E-mail: 1988
4. PowerPoint: 1987
5. County newsletter: 1970
6. Grant writing: 1995
7. Advisory council: 1970
8. County Web site: 1994
9. Ag in the Classroom: 1987
10. Special needs students: 1970
11. 4-H officer elections: 1970
12. Community service projects: 1970
13. Officer training program/retreat: 1970

The formula used was developed by Christiansen (1965) and took into account the date that a particular innovation was adopted, the number of innovations actually adopted by an individual agent, and the maximum number of years any educator had been with Extension. If an educator had not adopted an innovation or adopted but did not provide a date, a date of 2004 was awarded with no credit for innovation adoption.

The date each innovation could have been adopted was subtracted from the date recorded by the OCES educator or the date given by the researcher for each innovation. The calculations for all innovations were added together and divided by the actual number of innovations adopted by each individual. This number for each educator was then multiplied by an equalization factor. An equalization factor was used so that young educators would not be penalized for working fewer years. The equalization factor

divided 33, the maximum number of years any one educator had worked in Extension, by the number of years an individual educator had worked.

$$IS = \frac{Tla + Tlp \times 33}{Na \quad Ye}$$

IS = Innovativeness Score

Tla = Time Lag (year recorded by educator – 1st year for innovation adoption)

Tlp = Time Lag Penalty (2004 – 1st year for innovation adoption)

Na = Number of innovations adopted

33 = Maximum number of years taught by any one educator

Ye = Years in Extension by the individual educator

For example, an educator who had been with Extension for six years adopted two innovations in 1998. The first years the innovations could have been adopted were in 1970 and 1980. There were three other innovations the educator could have adopted but had not. The earliest dates those innovations could have been adopted was 1970, 1985, and 1999. The maximum number of years any educator worked in Extension according to the survey was 33 years.

Step 1: Calculate the time lag

$$1998 - 1970 = 28$$

$$1998 - 1980 = 18$$

$$28 \text{ years} + 18 \text{ years} = 46$$

Step 2: Calculate the time lag penalty

$$2004 - 1970 = 34$$

$$2004 - 1985 = 19$$

$$2004 - 1999 = 5$$

$$34 + 19 + 5 = 58$$

Step 3: Add together time lag and time lag penalty

$$46 + 58 = 104$$

Step 4: Divide by the number of innovations adopted

$$\frac{104}{2} = 52$$

Step 5: Multiply by the equalization factor

$$52 \times \frac{33}{5} = 343.2 = IS$$

Social Participation

Social participation was determined using the Chapin Scale of Social Participation (Chapin, 1937). The scale was not used to compare Extension agriculture educators with other professions, scales, or existing norms. However, it was used to describe the social participation of OCES agriculture educators.

In Section E of the survey respondents were asked to list the community organizations in which they were currently involved in Section 1 and the professional organizations in Section 2. They were also asked to record their (a) attendance, (b) financial contribution, (c) committee membership, (d) number of offices held, and (e) number of hour contributed monthly in each section. The final score was found by counting each membership as one, each attended as two, each contributed as three, each committee membership as four, and each office held as five.

Chapter Summary

This chapter described the methods and procedures used to conduct this study. It contains a description of the research design and population. The instrument used was a written, faxed, descriptive survey. The process for accomplishing the objectives of the study through administration and statistical analysis of the survey was presented as well.

A total of 48 of the 66 acting OCES agriculture educators completed the survey. Data were analyzed using the Statistical Package for Social Sciences (SPSS) 11.0. Findings are presented and explained in Chapter IV.

Population

The study consisted of those Oklahoma Cooperative Extension Service agriculture agents working in the OCES during May 2004. Through the use of the OSU Division of Agricultural Sciences and Natural Resources Personnel Directory (2003), 66 agents were identified as working on the county level at the time the study was conducted. The response rate for this census was 72.7 percent.

Findings

Findings for each objective are presented in this chapter. The findings are placed in order by objective number.

Demographic Characteristics of OCES Agriculture Educators

Objective one sought to develop a profile of OCES agriculture educators. Currently, all 66 Cooperative Extension agriculture educators are male. Therefore, the 48 respondents to the survey were male.

The average age of the educators was 42.5 years. As a whole, the OCES agriculture educators had been in Extension an average of 16.6 years. The average years an educator had been in his county averaged 10.8. Survey respondents had completed an average of 17.23 college credit hours since they began as Extension agriculture educators. On average, respondents began in agriculture Extension in 1990. Respondents had served an average of 10.5 years at their present location.

A scale was used to determine the highest degree achieved: 1 = Bachelor's Degree (B.S.), 2 = Bachelor's Degree plus hours toward a Master's Degree (B.S.+), 3 = Master's Degree (M.S.), and 4 = Master's Degree plus hours toward a Ph.D. (M.S.+).

The average amount of their own money the respondents spent on personal development during the past two years was \$500-\$1,000. The scale used to determine the amount of money spent is as follows: 1 = \$0-\$50, 2 = \$50-\$100, 3 = \$100-\$250, 4 = \$301-\$400, 5 = \$500-\$1,000, 6 = \$1,000-\$1,500, 7 = \$1,500-\$2,000, 8 = \$2,000-\$2,500, 9 = \$3,000-\$3,500, 10 = \$3,500-\$4,000, 11 = \$4,000-\$4,500, 12 = \$4,500-\$5,000, 13 = above \$5,000.

A highlight of the demographic characteristics for the respondents is illustrated in Table 1.

Table 1.

Demographic Characteristics of OCES Agriculture Educators

Characteristics	Population (N = 48)
Gender	100 percent male
Age	42.5
Year began in agriculture Extension	1990
Number of years in Extension	16.6
Number of years in county	10.8
Number of years in present location	10.5
College credit hours earned since beginning in agriculture Extension	17.2
Amount of schooling completed	2.8
Degrees earned	2.6
Amount of personal money invested in professional growth	\$500-\$1,000

Innovativeness of Educators

Objective two was to determine the innovativeness of Extension agriculture educators. The scale developed by Christiansen (1965) and used by Liston (2002) was used to calculate the innovativeness of each educator.

Just as in the studies conducted by Johnson (1969) and Liston (2002), the innovativeness of the population was calculated using the formula developed by Christiansen (1965). To determine the innovativeness of OCES agriculture educators, a date for each practice was determined. All dates were determined based on historical readings of the topics. The innovativeness calculation is outlined in detail in Chapter III.

Each educator's score is ranked according to innovativeness. Thus, the lower the score, the higher the degree of innovativeness. Ranks and scores for each educator are listed in Table 2. Each educator was randomly assigned a number code to ensure anonymity.

Table 2.

Innovativeness Scores and Rankings

Rank	Educator Code	Score	Rank	Educator Code	Score
1	10	16.41	25	50	83.34
2	21	18.29	26	39	83.64
3	2	20.88	27	32	96.52
4	51	21.28	28	24	105.60
5	13	23.68	29	4	106.31
6	52	23.91	30	8	117.00
7	62	25.61	31	60	122.85

8	37	26.84	32	63	132.50
9	31	28.05	33	14	167.93
10	3	30.66	34	11	178.20
11	58	36.15	35	15	197.44
12	30	37.59	36	6	209.81
13	26	39.45	37	22	210.54
14	57	43.44	38	66	222.75
15	46	44.75	39	12	241.30
16	36	44.88	40	16	253.0
17	41	49.92	41	25	253.28
18	27	50.33	42	19	279.59
19	29	54.86	43	23	399.80
20	65	61.50	44	18	419.60
21	20	64.92	45	43	434.50
22	61	68.95	46	44	523.05
23	54	72.90	47	56	534.60
24	7	79.75	48	53	717.20

With an innovativeness score of 16.41, educator 10 was identified as the most innovative OCES agriculture agent. Educators 21, 2, 51, and 13 rounded out the top five most innovative educators with scores ranging from 18.29-23.68. Educator 53 was the least innovative OCES agriculture educator with an innovativeness score of 717.20.

Educators 18, 43, 44, and 56 were ranked 44th-47th with scores ranging from 419.60-534.60.

Social Participation of OCES Agriculture Educators

The third objective was to describe the social participation of OCES agriculture Extension educators. Social participation was determined using the Chapin Scale of Social Participation (1937). One point was given for each organization membership held by the educator. Two points were awarded for attending meetings for each organization. Three points were given for financial contributions made to each organization. Four points were given for each committee membership, and five points were awarded for each office held. Table 3 outlines civic social participation among OCES agriculture agents, while Table 4 illustrates OCES agriculture agents' professional social participation.

Table 3.

Civic Social Participation of OCES Agriculture Educators

Social Characteristics	Means
Organizations	1.895
Attendance	3.104
Financial Contribution	4.208
Committee Membership	3.416
Offices Held	4.479
Total Points	17.312

Table 4.

Professional Social Participation of OCES Agriculture Educators

Social Characteristics	Means
Organizations	1.69
Attendance	2.88
Financial Contribution	3.50
Committee Membership	3.33
Offices Held	3.65
Total Points	14.83

The respondents were involved in an average of 1.90 social organizations and 1.69 professional organizations. Extension agriculture educators were involved in an average of 1.79 organizations.

OCES agriculture agents averaged being members of 3.42 committees, while they had committee memberships in an average of 3.33 professional organizations.

Respondents averaged a total of 3.37 committee memberships.

OCES educators held an average of 4.479 offices in social organizations and 3.645 in professional. The average for the total of offices held in both categories is 4.062.

Cosmopolitaness of OCES Agriculture Educators

According to Rogers (1995), the cosmopolitaness of an individual can be determined by observing the individual's exposure to the media, contact with others, and the types of information he/she seeks.

Print Media Exposure

In Table 5, publications within the written, faxed survey were divided into four categories: research journal, newsletter, magazine, or tabloid. Scores were calculated by giving a score of four if the educator did not receive the publication; a score of three if the educator received but did not read the publication; a score of two if they seldom read the publication; and a score of 1 if they read the publication regularly.

Table 5.

Publications Read by OCES Agriculture Educators

Publication	Means
Research Journal	2.94
Newsletter	1.61
Magazine	2.27
Tabloid	2.36

Newsletters, with a score of 1.61, are most often read by OCES agriculture educators. Research journals, which had the highest score (2.94), are read the least by Extension educators.

Sources of Information

Table 6 shows information sources used by OCES agriculture agents. As in Liston's (2002) study, a rank of one was given for impersonal sources sought and a rank of two was given for personal sources. The mean for the population was 1.92, meaning that Extension agriculture educators prefer personal sources to impersonal. For sources outside Cooperative Extension a code of one was assigned. Sources within Cooperative

Extension were assigned a code of two. The average for respondents was 1.13 meaning respondents more often sources with the Cooperative Extension Service. When asked about using sources far-a-field (assigned a score of one) or choosing sources close-at-hand (assigned a score of two), the mean for educators was 1.02. Sources that required a cash outlay received a rank of one, and sources that did not received a rank of two. The average score for Extension educators was 1.83. Finally, sources that required a lot of personal time were awarded a rank of one and sources that do not require a lot of personal time were given a rank of two. The mean score for the population was 1.23.

Table 6 illustrates the sources of information for OCES agriculture educators.

Table 6.

Sources of Information Sought by OCES Agriculture Educators

Type of Source	Mean (N = 48)
Impersonal Sources	1.92
Personal Sources	
Outside Cooperative Extension	1.13
Within Cooperative Extension	
Far A Field	1.02
Close At Hand	
Require Cash Outlay	1.83
Do Not Require Cash Outlay	
Require a Lot of Personal Time	1.23
Do Not Require a Lot of Personal Time	

Identification of Opinion Leaders

The fifth objective was to develop a profile of opinion leaders among Oklahoma Cooperative Extension agriculture educators. The sociometric methods and self-designating methods were used to determine the opinion leaders.

Sociometric Method

OCEC agriculture educators were asked to identify the fellow agriculture educators they would seek for information regarding agricultural education. Weimann (1994) identified this type of information gathering as the sociometric method.

To compare the methods, ranks were given to each Extension agriculture educator according to the frequency each was named by a fellow educator as a source of advice or information. Table 7 shows the ranks of each educator along with the number of times each was named.

There were two areas that appeared 60 or more times on the sociogram (area specialists and none). Educator number 22 received the next highest rank with five mentions. It is important to note that some of the data for this section could not be reported. The respondents were allowed to fill in names in this section instead of mark a predetermined answer. Some of the names could not be identified; therefore, all of the data could not be reported. Survey respondents were asked from which Extension agent in their district would they seek advice and information. Due to the open-ended nature of the question, some respondents listed area specialists instead of county agriculture agents.

Table 7.

Sociometric Method Ranks and Frequency Numbers

Rank	Educator Code	Frequency	Rank	Educator Code	Frequency
1	None	63	6	58	2
2	Area Specialists	76	6	36	2
3	22	5	6	37	2
4	57	4	6	21	2
4	7	4	7	63	1
5	51	3	7	44	1
5	26	3	7	45	1
5	8	3	7	17	1
5	20	3	7	31	1
6	30	2	7	40	1
6	41	2	7	38	1
6	12	2			

Self-designating Method

Rogers (1957, 1995), Johnson (1969), and Liston (2002) all used the self-designating method to determine opinion leaders. The method uses six questions to assess if an individual views themselves as an opinion leader.

Table 8 shows how OCES agriculture educators view themselves as opinion leaders. The lowest score represents the highest degree of self-designating opinion

leadership. Educators were ranked according to their scores with the lowest score receiving a rank of one.

Table 8.

Self-designating Method Ranks and Scores

Rank	Educator Code	Score	Rank	Educator Code	Score
1	22	5	5	6	9
2	16	6	5	7	9
2	18	6	5	8	9
3	3	7	5	11	9
3	12	7	5	2	9
3	14	7	5	15	9
3	26	7	5	21	9
3	31	7	5	23	9
3	39	7	5	25	9
3	60	7	5	29	9
3	57	7	5	30	9
3	60	7	5	36	9
4	4	8	5	41	9
4	13	8	5	52	9
4	19	8	5	53	9
4	20	8	5	56	9
4	24	8	5	58	9
4	27	8	5	61	9

4	32	8	5	63	9
4	43	8	6	10	10
4	44	8	6	37	10
4	46	8	6	51	10
4	54	8	6	65	10
4	62	8	6	66	10

With a score of 5, educator 22 had the highest degree of self-designating opinion leadership. Educators 16 and 18 had the second highest degree of self-designating opinion leadership and were given the rank of two.

Rogers (1995) states that innovation adopter categories within a population form a bell-shaped curve. Innovators constitute 2.5 percent of any population; early adopters make up 13.5 percent; the early majority, 34 percent; the late majority 34 percent; and the laggards, the remaining 16 percent.

It is important to note one disadvantage of the self-designating method of opinion leadership is that respondents are evaluating themselves. Weimann (1994) and Rogers (1995, p. 292) both agree that this method is “dependent upon the accuracy with which respondents can identify and report their self-images.”

Using innovativeness scores, the majority of opinion leaders for OCES were found among the early and late majority categories (Figure 3). The opinion leaders, identified using the self-designating method, are denoted with an asterisk. According to Rogers (1995), the early adopter category “more than any other, has the greatest degree of opinion leadership in most systems” (p. 264). By using the self-designating method of

opinion leadership, educators 16, 18, 2, 12, 14, 26, 31, 29, 50, 57, and 60 can be identified as opinion leaders.

In looking at demographic characteristics for opinion leaders and non-opinion leaders, similarities can be found. Table 9 illustrates the findings.

Table 9.

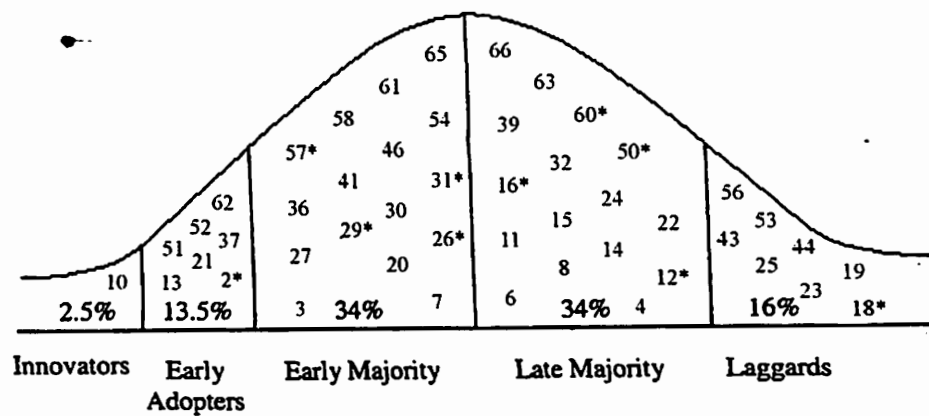
Demographics of Opinion vs. Non-opinion Leaders

Demographic Information	Opinion Leaders	Non-opinion Leaders
Gender	Male	Male
Age	43.4	42.2
Year Became an Agriculture Educator	1989	1990
Number of Years in Extension	16.6	16.6
Number of Years in Present Location	11.0	10.3
College Credit Hours Completed Since Entering Extension	22.1	15.8
Amount of Schooling Completed	Bachelor's Plus	Bachelor's Plus
Personal Money Spent on Professional Development	\$500-\$1,000	\$250-\$500

Both opinion and non-opinion leaders in OCES are male. Opinion leaders have an average age of 43.4 years; non-opinion leaders are slightly younger with an average age of 42.2. On average, opinion leaders became OCES agriculture educators in 1989; non-opinion leaders became agriculture educators in 1990 on average. Both opinion

leaders and non-opinion leaders have been in Extension for an average of 16.6 years. Opinion leaders have been in their present location for an average of 11 years. Non-opinion leaders have been in their present locations for an average of 10.3 years. Opinion leaders on average have earned more college credit hours with 22.1. Non-opinion leaders earned an average of 15.8 credit hours since entering Extension. Opinion leaders on average spend approximately \$500-\$1,000 of their personal money on professional development. Non-opinion leaders spend less on average with \$250-\$500.

To further analyze opinion leaders and non-opinion leaders, an analysis of innovativeness scores was completed. According to Rogers (1995), innovator adopter categories form a bell shaped curve. Innovators comprised 2.5 percent of the population. In this study, one respondent, educator 10, had an innovativeness score of 16.4. Early adopters made up 13.5 percent of the population. Educators 21, 2, 51, 13, 52, 62, and 37 had innovativeness scores ranging from 18.3 to 26.8 and were classified as early adopters. The early majority had scores ranging from 28.1 to 79.8. Educators 31, 3, 58, 30, 26, 57, 46, 36, 41, 27, 29, 65, 20, 61, 54, and 7 were classified as the early majority. Like the early majority, the late majority accounts for 34 percent of the population. Educators 50, 39, 32, 24, 4, 8, 60, 63, 14, 11, 15, 6, 22, 66, and 12 made up the late majority category. Their innovativeness scores ranged from 83.3 to 241.3. Educators 16, 25, 19, 23, 18, 43, 44, 56, and 53 were identified as laggard because they highest innovativeness scores. Their scores ranged from 253.0 to 717.2. Figure 3 provides an illustration of the innovativeness of OCES agriculture educators.



*Denotes designated opinion leaders.

Figure 3. Adopter categorization of opinion leaders and non-opinion leaders according to educator code.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present a review and summary of this study. Summary, conclusions, and recommendations were based on the analysis and interpretation of data presented in Chapter IV.

Purpose of the Study

The purpose of this study was to determine the opinion leaders among Oklahoma Cooperative Extension agriculture agents. This study will work to develop a profile, determine innovativeness, describe social participation, and describe the cosmopolitaness of OCES agriculture educators. It will also develop a profile of opinion leaders among OCES agriculture educators.

Objectives of the Study

The following objectives served as guidelines for the study:

1. Develop a profile of OCES agriculture agents.
2. Determine innovativeness of agriculture agents.
3. Describe social participation of agriculture agents.
4. Describe cosmopolitaness of agriculture agents.
5. Develop a profile of opinion leaders among agriculture agents.

Population

The study consisted of those Oklahoma Cooperative Extension Service agriculture agents working in the OCES during May 2004. Through the use of the OSU Division of Agricultural Sciences and Natural Resources Personnel Directory (2003), 66 agents were identified as working on the county level at the time the study was conducted.

Summary of Methods and Procedures

Data were collected through a written survey that was faxed to each participant. The instrument was originally developed by Johnson (1969) and modified by Liston (2002). A thesis committee and panel of experts, along with the researcher, modified the instrument to fit OCES before it was sent to Extension agriculture educators. Using the Division of Agricultural Sciences and Natural Resources 2003 Personnel Directory, 66 Extension agriculture educators were identified. Of the 66 educators, data were collected from 48 respondents for a 72.7 percent response rate. The instrument was number coded so each respondent would remain anonymous. The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 11.0 for Windows.

Major Findings of the Study

Demographic Profile of Extension Agriculture Educators

Objective one was to develop a profile of Extension agriculture educators based on their demographic characteristics. The chosen variables included age, years in Extension, number of years serving their particular county, college credit hours earned

since beginning with Cooperative Extension, amount of schooling completed, and direct out-of-pocket expenses spent on professional growth. Summaries for the population are provided in Table 10.

Table 10.

Demographic Characteristics of OCES Agriculture Educators

Characteristics	Population (N = 48)
Gender	100 percent male
Age	42.5
Year began in agriculture Extension	1990
Number of years in Extension	16.6
Number of years in county	10.8
Number of years in present location	10.5
College credit hours earned since beginning in agriculture Extension	17.2
Amount of schooling completed	2.8
Degrees earned	2.6
Amount of personal money invested in professional growth	\$500-\$1,000

Innovativeness of Extension Agriculture Educators

The second objective was to determine the innovativeness of Extension agriculture educators. The data was compiled based on the 48 respondents to the survey. This data is displayed in Table 11.

Table 11.

Innovativeness Scores and Rankings

Rank	Educator Code	Score	Rank	Educator Code	Score
1	10	16.41	25	50	83.34
2	21	18.29	26	39	83.64
3	2	20.88	27	32	96.52
4	51	21.28	28	24	105.60
5	13	23.68	29	4	106.31
6	52	23.91	30	8	117.00
7	62	25.61	31	60	122.85
8	37	26.84	32	63	132.50
9	31	28.05	33	14	167.93
10	3	30.66	34	11	178.20
11	58	36.15	35	15	197.44
12	30	37.59	36	6	209.81
13	26	39.45	37	22	210.54
14	57	43.44	38	66	222.75
15	46	44.75	39	12	241.30
16	36	44.88	40	16	253.0
17	41	49.92	41	25	253.28
18	27	50.33	42	19	279.59
19	29	54.86	43	23	399.80
20	65	61.50	44	18	419.60

21	20	64.92	45	43	434.50
22	61	68.95	46	44	523.05
23	54	72.90	47	56	534.60
24	7	79.75	48	53	717.20

Social Participation

Objective three was to describe the social participation of Extension agriculture educators within the last two years. The findings related to this objective include:

1. Extension agriculture educators are involved in an average of 1.8 organizations where they attend regular meetings.
2. OCES agriculture educators are members of at least 3.5 committees on average.
3. OCES agriculture educators have held an average of 4.1 offices.

Cosmopolitaness of Extension Agriculture Educators

The fourth objective was to identify cosmopolitaness of Extension agriculture agents. The findings are listed below:

1. Extension agriculture educators skim the publications they receive.
2. OCES Extension educators read newsletters more than any other print media.
3. Extension agriculture educators prefer personal sources of information.

Identification of Opinion leaders

The fifth objective was to identify opinion leaders among OCES agriculture agents. Table 12 summarizes the data. According to the self-designating method of opinion leadership, 11 educators were identified as opinion leaders.

Table 12.

Sociometric Method Ranks and Frequency Numbers

Rank	Educator Code	Frequency	Rank	Educator Code	Frequency
1	None	63	6	58	2
2	Area Specialists	76	6	36	2
3	22	5	6	37	2
4	57	4	6	21	2
4	7	4	7	63	1
5	51	3	7	44	1
5	26	3	7	45	1
5	8	3	7	17	1
5	20	3	7	31	1
6	30	2	7	40	1
6	41	2	7	38	1
6	12	2			

Conclusions

Based on the data, the following conclusions were drawn:

1. The typical Oklahoma Cooperative Extension agriculture educator is male; is 42.49 years old; has worked in Extension for 16.63 years; has completed a master's degree; and spends an average of \$500-\$1,000 of his own money for professional growth.

2. Oklahoma Cooperative Extension county educators rely more on district and area specialists for information related to agricultural innovations than their fellow county Extension agriculture educators.
3. The most innovative OCES agriculture educator was not identified as an opinion leader. According to Rogers (1995) "Opinion leaders are more innovative than their followers. But opinion leaders are not necessarily innovators. Sometimes they are, but often they are not."
4. On average, OCES agriculture educators are not only members of organizations, but they also serve on committees and hold offices within those organizations. Rogers (1995) supports this conclusion when he said "Opinion leaders have greater social participation than their followers."
5. OCES agriculture educators read newsletters as their main source of print media. When discussing communication, Rogers (1995) said "Opinion leaders have greater exposure to mass media than their followers."
6. Opinion leaders among Extension agriculture educators are coded 16, 18, 2, 12, 14, 26, 31, 29, 50, 57, and 60.

Recommendations

Based on the conclusion drawn from this study, the following recommendations were made:

1. Opinion leaders should be viewed as change agents for Oklahoma Cooperative Extension. These opinion leaders can assist in the adoption of changes among OCES. District and state leaders should use the identified

opinion leaders to help in the adoption of changes within OCES. According to Rogers (1995), "Opinion leaders have greater change agent contact than their followers."

2. Because opinion leaders are held in high esteem by their followers, the opinion leaders should be appointed members of various committees focused on changes pertaining to OCES. As outlined by Rogers (1995), "When a social system's norms favor change, opinion leaders are more innovative, but when the norms do not favor change, opinion leaders are not especially innovative."
3. Sociometric ranking methods should be used whenever possible to identify opinion leaders. "Undoubtedly, the sociometric technique is a highly valid measure of opinion leadership, as it is measured through the perceptions of followers" (Rogers, 1995).
4. Because Extension educators identified newsletters as their preferred publication method, administration should design a newsletter to target county Extension agriculture educators.
5. More in-service training needs to be provided to Extension personnel regarding agricultural technologies.

Recommendations for Research

1. Additional research needs to be conducted investigating the role district, area, and state specialists play in the Oklahoma Cooperative Extension Service.
2. A study focusing on opinion leaders' ability to influence the adoption of new innovations among fellow OCES agriculture educators should be conducted.

3. The innovativeness, cosmopolitaness, and social participation of OCES agriculture educators should be compared to Extension agriculture educators across the country.
4. If opinion leaders can be identified by name rather than number-code, their skills and input could be used to improve their organizations.
5. Additional research need to be conducted on how the impact of all county Extension agriculture educators being male affects Oklahoma citizens.
6. Further research needs to be conducted on the role district, area, and state specialists play in Oklahoma Cooperative Extension.

Discussion

This study amassed a great deal of information regarding Oklahoma Cooperative Extension agriculture educators. While many questions were answered by this research, several more arose.

Because key informant information could not be obtained for this study, the research had to rely solely on the self-designating method for opinion leader identification. While the self-designating method is identified by Rogers (1995) as one of the four main methods for identifying opinion leadership, it relies on the respondents' ability to evaluate themselves. What if Extension educators have a false self-impression of their roles as opinion leaders?

According to the data of this study, county Extension agriculture educators play an important role in the Extension system. They are individuals who are well-educated and established in their respected communities. On average, these OCES agriculture

educators are active in both civic and social organizations. They prefer to read agricultural newsletters and are innovators in the field of agricultural education.

What will happen if the Cooperative Extension Service is restructured without the support of county educators, especially opinion leaders? Will Extension continue to operate on the level it has in the past?

Opinion leadership plays a key role in the adoption of innovations. This study serves as a guide to opinion leadership in Oklahoma Cooperative Extension. By studying opinion leadership and how it applies to opinion leaders, educators, OCES field staff, and administrators can learn how to continue to best serve the public. These two areas also contribute to the body of knowledge regarding both agricultural communications and education.

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APPENDIX A
IRB APPROVAL

Oklahoma State University
Institutional Review Board

Protocol Expires: 5/2/2005

Date: Monday, May 03, 2004

IRB Application No AG0429

Proposal Title: The Identification of Opinion Leaders Among Oklahoma Cooperative Extension
Agricultural Agents

Principal
Investigator(s):

Shannon Webb
120 South Burdick, I-2
Stillwater, OK 74074

Dwayne Cartmell
448 Ag
Stillwater, OK 74078

Reviewed and
Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

Dear PI :

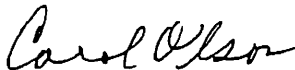
Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact me in 415 Whitehurst (phone: 405-744-5700, colson@okstate.edu).

Sincerely,



Carol Olson, Chair
Institutional Review Board

APPENDIX B
COUNTY EDUCATOR SURVEY



Division of Agricultural Sciences and Natural Resources
Department of Agricultural Education, Communications
and 4-H Youth Development
448 Agriculture Hall
Stillwater, Oklahoma 74078-6031
405-744-8036, FAX 405-744-5176

May 10, 2004

Dear Oklahoma Cooperative Extension Educator:

I need your help! As you are all aware, the Division of Agricultural Sciences and Natural Resources is undergoing a restructuring process. The faculty members at Oklahoma State University have been working to better identify opinion leaders among Oklahoma Cooperative Extension county agriculture agents.

We are conducting a survey to determine the personal, social and leadership characteristics of Oklahoma Cooperative Extension county agriculture agents.

The information gathered will be used to plan further research in OCES. Please be assured your responses are completely confidential, your participation is strictly voluntary, and there will be no harmful affects caused by participating. The data will be collected using code numbers that cannot be traced back to you so your privacy is protected.

We know you are busy and your time is valuable; however, the information you provide is very important and will make a difference in how the Oklahoma Cooperative Extension will serve you in the future.

Sincerely,

Shannon Webb
Graduate Student
Oklahoma State University
srwebb@okstate.edu

Dwayne Cartmell, Ph.D.
Assistant Professor of Agricultural Communications
Oklahoma State University
dcart@okstate.edu

Section A

1. Please check the appropriate blank for each of the following.
- a) During the past six months have you told an ag agent about some new practice in agriculture? **Y**___ **N**___
 - b) Are you likely to be asked by fellow ag Extension agents advice about practices in agriculture? **Y**___ **N**___
 - c) Thinking back to your last discussion with ag agents about new practices in agriculture, were you asked for your opinion of the new practice? **Y**___ **N**___
 - d) When your friends who work in extension discuss new ideas in agriculture, what role do you play? **Mainly listen**___ **Try to convince them of your ideas**___
 - e) Which of these happen most often:
 ___ **You tell your neighboring ag agents about some new practice**
 ___ **They tell you about some new practice**
 - f) When confronted with a specific problem in your program, from which of the following sources would you typically seek the advice and/or information needed to solve the problem: **RANK ALL THAT APPLY. (1 = first choice.)**
 ___ **a. other ag extension agents**
 ___ **b. other extension personnel**
 ___ **c. district directors or area specialists**
 ___ **d. state extension specialists**
 ___ **e. university administrators**
 ___ **f. neighboring agricultural education teachers**
 ___ **g. other (specify)**
2. From which extension agent in your district would you seek advice and information about each of the following? Enter one name or write *NONE* in each blank.
- a) Developing new and specific educational programs _____
 - b) Purchasing instructional technology equipment _____
 - c) Selecting livestock for production and show _____
 - d) Effectively communicating with administration _____
 - e) Working with county commissioners to secure sales tax revenue _____

Section B

1. *Listed below are agricultural publications. Please mark the statement next to each publication that applies to you.*

	Read Regularly	Seldom Read	Receive But Do Not Read	Do Not Receive
Journal of Extension	_____	_____	_____	_____
High Plains Journal	_____	_____	_____	_____
Oklahoma Farmer Stockmen	_____	_____	_____	_____
Progressive	_____	_____	_____	_____
Farmer	_____	_____	_____	_____
Southwest Farm Press	_____	_____	_____	_____
Beef Council Newsletter	_____	_____	_____	_____
Wheat Commission Newsletter	_____	_____	_____	_____

Section C

1. Please check letter a or b next to your response to the question below. Check one letter for each subgroup.

From which source do you tend to get most of the ideas you use in your programs?

- a. Impersonal sources such as publications of various kinds, television, radio, Internet, etc.
 b. Personal sources such as other extension agents, administrative personnel, supervisory personnel, farmers, college professionals, etc.

From which source do you tend to get most of the ideas you use in your programs?

- a. Sources within the field of agricultural education, such as other ag agents, fact sheets, magazines pertaining to agricultural education, district specialists, etc.
 b. Sources outside the field of agricultural education, such as ag teachers, general magazines, lay people in business and industry, etc.

From which source do you tend to get most of the ideas you use in your programs?

- a. Sources relatively close at hand such as neighboring agents, local school personnel, publications that cross your desk automatically, other people in the community, etc.
 b. Sources relatively far afield, such as technical publications to which you usually have to subscribe, agents working in other states, results observed in industry training programs, etc.

From which source do you tend to get most of the ideas you use in your programs?

- a. Sources which require a cash outlay by you personally, such as books you have to buy, magazines, to which you have to subscribe, courses in which you have to pay a registration, etc.
 b. Sources which do not require a cash outlay to you personally, such as free magazines, publisher's displays at conventions, free clinics, etc.

From which source do you tend to get most of the ideas you use in your programs?

- a. Sources that do not take up a lot of your personal time, such newsletters, other mail crossing your desk, drop-in visits during regular working hours, etc.
 b. Sources which require quite a bit of your personal time, such as summer school courses, workshops, trips, etc.

Section D

Listed below are activities or practices, which you may or may not be using. First, read the description of the practice or activity then decide whether or not you have used or are using the practice. After making the decision, please provide the following information.

1. If you are using or have used the practice or activity, estimate, in the first space, the year the practice or activity was first used.
2. If you are not using the activity or practice and it could apply to your situation, place an X in the second space.
3. If you are not using the activity or practice and it does not apply to your situation, place an X in the third space.

	Used First Year Used	Not Used Could Apply	Not Used Does Not Apply
1. Biotechnology instruction available.			
2. Instructional partnerships such as ones with teachers are used to integrate the agricultural curriculum.			
3. E-mail is used as a primary method of correspondence.			
4. PowerPoint is used in instructional meetings.			
5. A regular county newsletter is sent to members of the community.			
6. Grant writing is actively used			
7. An advisory council has been formed to assist the agriculture program.			
8. A county/center Web site has been developed.			
9. Ag in the Classroom implemented in county schools.			
10. Special needs students are taught in some capacity of the agriculture program.			
11. 4-H chapter officers are selected by a means other than a majority vote of members.			
12. County 4-H members conduct monthly community service projects (such as Adopt-A-Highway and Read Aloud.)			
13. An officer training program/retreat is held to discuss the clubs' activities.			

Section E

Listed below are activities or practices, which you may or may not be using. First, read the description of the practice or activity then decide whether or not you have used or are using the practice. After making the decision, please provide the following information.

1. If you are using or have used the practice or activity, estimate, in the first space, the year the practice or activity was first used.
2. If you are not using the activity or practice and it could apply to your situation, place an X in the second space.
3. If you are not using the activity or practice and it does not apply to your situation, place an X in the third space.

Section 1

	Attendance (yes/no)	Financial Contribution (yes/no)	Committee Membership	Number of Offices Held	Number of Hours Contributed Monthly
Ex.					
1.					
2.					
3.					
4.					
5.					

Section 2

	Attendance (yes/no)	Financial Contribution (yes/no)	Committee Membership	Number of Offices Held	Number of Hours Contributed Monthly
Ex.					
1.					
2.					
3.					
4.					
5.					

Section F

This page is concerned with general information about you. Please answer accordingly.

1. Gender _____
2. Age _____
3. Year you became an ag extension agent _____
4. Number of years in extension _____
5. Number of years in your county _____
6. Number of years at your present location _____
7. Number of college credit hours you have completed since you became an ag extension agent _____
8. Amount of schooling completed (MARK HIGHEST)
____ Bachelor's degree ____ Master's degree
____ Bachelor's plus ____ Master's plus
9. College or university degrees earned
____ Associate's ____ Education Specialist
____ Bachelor's ____ Professional
____ Master's ____ Doctorate
10. What is the amount of your own money you have invested in professional growth (i.e. summer school, correspondence courses, travel to professional meetings, etc) during the past two years? (Include fees, registration, books, dues, magazine subscriptions, etc.) MARK THE CLOSEST RANGE
____ \$0-50 ____ \$1,000-1,500 ____ \$4,000-4,500
____ \$50-100 ____ \$1,500-2,000 ____ \$4,500-5,000
____ \$100-250 ____ \$2,000-2,500 ____ above 5, 000
____ \$250-500 ____ \$3,000-3,500
____ \$500-1,000 ____ \$3,500-4,000
11. Is there a computer in your office? Y _____ N _____
12. How old is your computer? _____
13. Do you have Internet access? Y _____ N _____
If yes, is it dial-up or high-speed (DSL, cable)
Dial-up _____ DSL _____ Cable _____
14. Number of hours spent on the computer each day _____
15. Rank the following methods of inquiry your clients use to contact you.
(1=first choice.)
____ Phone
____ Walk-in
____ E-mail
16. How do you prefer to get information about issues related to your occupation?
____ Internet ____ Phone ____ E-mail
____ Fax ____ Direct Mail ____ Person to Person
17. How do you perceive your Extension audience prefers to receive information from you?
____ Internet ____ Phone ____ E-mail
____ Direct Mail ____ Magazines ____ Person to Person
____ Fact Sheets ____ Workshops

APPENDIX C
DISTRICT DIRECTOR SURVEY

**INSTRUCTION SHEET FOR RANKING OCES AGRICULTURE AGENTS
ACCORDING TO OPINION LEADERSHIP**

You have been provided a list of OCES agriculture educators in your district.

Please rank each of these educators on the basis of opinion leadership held in agriculture education. Your ranking is to be based on the following definition of opinion leaders.

Opinion Leader- OCES agriculture agent who is influential with fellow agents in approving or disapproving new ideas in agricultural education.

In order to assist you in ranking the educators, first categorize the names into the following three categories:

Stack 1

High Degree
of Opinion
Leadership

Stack 2

Moderate Degree
of Opinion
Leadership

Stack 3

Low Degree
of Opinion
Leadership

Then rank each of the educators in the three stacks from high to low. Finally, place the categories in order on top of one another in your listing.

APPENDIX D
PANEL OF EXPERTS

PANEL OF EXPERTS

Dr. Dwayne Cartmell,
Associate Professor
Agricultural Communications
Oklahoma State University

Dr. Shelly Sitton
Associate Professor
Agricultural Communications
Oklahoma State University

Dr. Penny Pennington
Associate Professor
Agricultural Education
Oklahoma State University

Dr. Linda Harriman
Associate Dean/ Assistant Director
Oklahoma Cooperative Extension Service-Family and Consumer Sciences
Oklahoma State University

David Sorrell
Executive Director
4-H Youth Development
Oklahoma State University

APPENDIX E
LETTER OF INTENT



Division of Agricultural Sciences and Natural Resources
Department of Agricultural Education, Communications
and 4-H Youth Development
448 Agriculture Hall
Stillwater, Oklahoma 74078-6031
405-744-8036, FAX 405-744-5176

May 7, 2004

Dear Oklahoma Cooperative Extension Educator:

I need your help! As you are all aware, the Division of Agricultural Sciences and Natural Resources is undergoing a restructuring process. The faculty members at Oklahoma State University have been working to better identify opinion leaders among Oklahoma Cooperative Extension county agriculture agents.

Soon you will be receiving a fax containing a brief survey (10-15 minutes). We would greatly appreciate it if you could take a few moments to complete the survey.

If you have any questions about this research project, please feel free to contact myself or Dr. Dwayne Cartmell at (405) 744-0461.

Thank you in advance for your cooperation. Without your assistance it would be impossible to acquire this valuable information.

Sincerely,

Shannon Webb
Graduate Student
Oklahoma State University
srwebb@okstate.edu
(405) 533-2569 fax (you will hear an answering machine, but the fax will pick up)

Dwayne Cartmell, Ph.D.
Assistant Professor of Agricultural Communications
Oklahoma State University
dcart@okstate.edu



Shannon Rae Webb

Candidate for the Degree of

Master of Science

Thesis: THE IDENTIFICATION OF OPINION LEADERS AMONG OKLAHOMA
COOPERATIVE EXTENSION AGRICULTURE AGENTS

Major Field: Agricultural Communications

Biographical:

Personal Data: Born in Oklahoma City, Oklahoma, February 25, 1981; the daughter of Dirk and Jana Webb.

Education: Graduated from Cordell High School, Cordell, Oklahoma, May 1999; received a Bachelor of Science in Agricultural Communications from Oklahoma State University, Stillwater, Oklahoma, May 2003; earned a Master of Science in Agricultural Communications from Oklahoma State University, Stillwater, Oklahoma, December 2004.

Personal Experience: Graduate Teaching Assistant, Oklahoma State University Department of Agricultural Education, Communications, & 4-H & Youth Development, 2003-2004; Graduate Assistant, Oklahoma State University Student Union Marketing, 2003-2004; Graduate Assistant, Oklahoma State University, Office of University Research Services, 2003-2004.

Professional Organizations: Agricultural Communicators of Tomorrow.