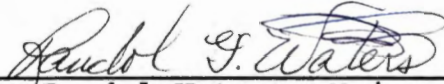


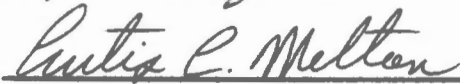
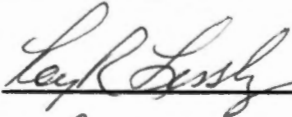
To the Graduate Council:

I am submitting herewith a thesis written by Louie R. Freeman entitles "The Variables Which Effect Research and Productivity and Extension Publications and Their Relationships to Performance of Land-Grant University Extension Specialists." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural and Extension Education.



Dr. Randol Waters, Major Professor

We have read this thesis
and recommend its acceptance:



Accepted for the Council:



Associate Vice Chancellor
and Dean of The Graduate School

THE VARIABLES WHICH EFFECT RESEARCH
PRODUCTIVITY AND EXTENSION PUBLICATIONS AND
THEIR RELATIONSHIPS TO PERFORMANCE
OF LAND-GRANT UNIVERSITY
EXTENSION SPECIALISTS

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Louie R. Freeman

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DEDICATION

This thesis is dedicated to my family. To the gifts they gave me:

My wife, Laura - the dedication

My mother, Moma May - inspiration to dream

My father, Papa - persistence to finish what was started

My sister, brothers, aunt, and uncle, Ma Joe, Buddy,

Butch, Pat, and Jim - intuitiveness to look beyond

the ordinary.

These special gift my family has given me but the ones I appreciated most were the love, support and faith in God they endowment to me.

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Thanks to my co-workers Joyce, Bonnie, and Becky for their help in carrying on the program in Sequatchie County. The district staff, Frank, Ivory, and Mary Francis, assisted me with time and encouragement. I am very appreciative to the University of Tennessee Agricultural Extension Services' administration to allow me the time and tuition to attend gradate school. The final thanks goes to the clientele of Sequatchie County for their understanding and help.

ABSTRACT

The purpose of this study was to investigate the relationships among demographic variables, research productivity, Extension publications, and job performance evaluations for Extension specialists in the 1862 southern land-grant universities. The final sample was composed of 241 agricultural Extension specialists in the southeast.

The study revealed that the average specialist was between the ages of 30 and 59, was located on the university campus, had an academic rank of full, had a terminal educational doctoral degree, and their major audiences were adults. Faculty average department size was almost 17 staff members. Faculty had memberships in 4.5 professional organizations, but they held an average of less than one office in these organizations on any level. However, they averaged serving on more than 1.5 committees on the state level. The average number of journal subscriptions was more than 3.5 and they read less than .5 journals from cover to cover per month, but when just reading articles of interest, they average more than 3 journals per month. The respondents averaged planning 82 percent of their time in Extension, however only actually spent 76 percent conducting Extension work. Agricultural Extension specialists participated in more county teaching events than at any other level with an average of 36, however, when organizing teaching events, they averaged

conducting more on the state level with almost 9.

The results of this study indicated that research productivity and Extension publications were affected differently by the demographic characteristics. Research productivity for agricultural Extension specialists was significantly affected by many of the same demographic characteristics that significantly affected collegiate faculty as shown in the literature. However, Extension publications were only significantly affected by job responsibility (both planned and actual) and teaching event scores. The results of this study showed that agricultural Extension specialists who were actively teaching were also publishing more articles and publications.

Agricultural Extension specialists' attitudes were not significantly affected by many of the demographic characteristics. However, rank was significantly related to three of the four types of attitudes measured. Those at the assistant rank perceived they had more time for conducting and writing research than those at the associate and full ranks. Those at the associate rank perceived that the organization placed higher emphasis on refereed journal articles than did those at the ranks of assistant and full. Those who held the rank of full perceived that promotion and evaluation were conducted more fairly by the organization. However, rank was one of the few demographic variables which did not have a significant relationship with Extension publication scores and

research productivity.

Agricultural Extension specialists over the age of 59 were more positive about the fairness of promotion and evaluation, and felt that they had adequate time to conduct and write research. However the variable of age had no significant relationships with research productivity or Extension publication scores.

Self-reported job performances was only slightly affected by research productivity and Extension publication scores. Extension publication scores had more influence on job performance in both department ratings and how they rated their own performance. However, research productivity correlation with departmental performance rating was very close with that of the Extension publication score (a differences of .011) and this correlated more than Extension productivity with self-evaluations ratings. However, both analyses indicated that Extension publication were more important to agricultural Extension specialists job evaluation than research productivity.

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Chapter I

INTRODUCTION

Situation

The land-grant universities have a three fold responsibility: teaching, research, and service. The Cooperative Extension System practices all of these missions in its academic endeavors on a national basis. Extension specialist jobs are different from most faculty members in colleges and universities. Some Extension specialists do more pure research, others do more applied research, many have split assignments between both pure and applied research, some teach the public and others have teaching responsibilities at the university. These differences make it difficult to generalize one particular role for all Extension specialists. However, one important aspect required of all Extension specialists is that they must stay abreast of new research in their fields of study so they can share or practice their knowledge.

Extension specialists' audiences may be varied to include other specialists, Extension agents, adults, college faculty, or youth. They may need to share information by writing pamphlets, newsletters, or 4-H manuals, making program presentations, as well as writing journal articles, manuscripts, books, or even presenting papers at

professional meetings. They sometimes must act as translators for new information which is highly technical and paraphrase it for more common usage. They also can detect a so called "common" problem and find a technical solution.

Extension specialists concentrate their educational efforts in four primary areas: youth (4-H), agriculture, home economics and community resource development. Specialists may be located at the land-grant universities, field laboratories, experiment stations, regional or district offices, or even at county Extension offices. Extension specialists need to effectively communicate the subject matter in their areas of expertise no matter how elementary or difficult the issues may seem.

Statement of the Problem

This study was concerned with the agricultural Extension specialists in the southern 1862 land-grant universities in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. It studied the relationships among demographic variables, research productivity, Extension publications, and job performance evaluations for Extension specialists. The literature on research productivity with Extension specialists as well as

Extension publication is limited. However, a review of research productivity at the college and university levels with faculty members does provide a background for the study.

Objectives

Extension specialists must keep up to date with new research in their fields of study and be able to transfer it to other people who will need and use the information. If specialists do not present information to their audiences adequately, their performance is severely affected. This study analyzed the relationships between specific characteristics of Extension specialists, their research productivity and Extension publications, and performance evaluation scores. Some of these characteristics are related. Extension administrators could possibly help Extension specialists become more productive as well as more effective.

The specific objectives of this study were:

(1.) To study the following demographic characteristics of the agricultural Extension specialists in the southern region:

- A. age
- B. office location
- C. number of staff in the department

- D. academic rank
- E. level of education
- F. participation levels in teaching events
- G. involvement in professional organizations
- H. research journals read
- I. job responsibilities.

(2.) To study the relationships between demographic variables and research productivity scores and Extension publication scores.

(3.) To study the relationships between demographic variables and attitudes about research productivity.

(4.) To study the relationships between research productivity scores and Extension publication scores, and self-reported departmental job performance and self-evaluation of performance.

Limitations

Some of the limiting factors of this study are listed below.

(1.) This study will be generalized to only agricultural Extension specialists at land grant universities in the southern region because of cost and time.

(2.) This study will use a self-reporting survey on both the dependent and independent variables.

(3.) This study only looks at the past three years of productivity. It is not a longitudinal study.

Chapter II

LITERATURE REVIEW

Measuring Research Productivity

Teaching, research, and service are the three important goals of the higher education institutions. The effectiveness of these institutions can be supported by the goals that they achieve. The achievement of these goals, may be directly or indirectly measured through assessments of human performance (Bean, 1982). "Research productivity" is one part of performance of the agricultural Extension specialists. Research productivity for agricultural Extension specialists should be directly related to obtaining their goals (University of Tennessee Agricultural Extension Service Appointment/Promotion/Tenure Committee Recommendations, 1990). The tradition of research in the field of higher education has been to use the term "research productivity" (Bean, 1982).

Research productivity can be measured in many ways. Kelly and Warmbrod (1985) looked at eight intercorrelated variables that were identified as the numbers of books published, journal articles published, presentations, research grants, doctoral committees successfully chaired, popular articles, research reports, and doctoral reading

committees successfully completed. Bean (1982) defined research as scholarly activities (e.g., books, and articles). Blackburn, Behymer, and Hall (1975) examined three dependent variables. These were articles produced in the past two years, total career articles published, and total books published. This study found that articles produced in the past two years and total career articles published were highly intercorrelated, but each were correlated only minimally with book publication. Some studies such as Crane's (1965) used indexes which looked at the length of the paper as well as its design and research notes to help determine its value. Long (1978) counted both publications and citations to them. These all are adequate ways to measure productivity for faculty in the teaching college. There were no references in regard to Extension publications such as Extension publication peer and non-peer reviewed, newspaper articles, or newsletter articles. Agricultural Extension specialists have several unique ways to publish information.

What Affects Research Productivity

The occupational environment is considered to be one of the most important factors in creating effective surroundings for faculty according to Bean (1982). Thus the influence of the institution on an individual's productivity

is greater than the individual's influence on the institution. This may be the reason research universities are more productive than other four-year colleges (Bean, 1982; Blackburn et al., 1978; Crane, 1965; Kelly & Warmbrod, 1986; Long, 1978) but all Extension specialists are employed by "land-grant universities" so this variable is constant in the population of Extension specialists. However, the review of the literature did not indicate how staff members located off-campus would be affected by their location in regard to research productivity.

The number of faculty in the department has an effect on the individual's research productivity which was reported by Bean (1982) and Blackburn et al. (1978). The individual's communication with in-house scholars and work groups, as described by Payne and Pugh (1976) is highly influential on individual behavior. The "minimum" staff size to positively affect productivity according to Gallant and Prothero (1972) is eleven to fifteen in number. They also reported there is a point at which you can have too many staff members in a department.

Collaboration is important. Bean (1982) also found that "highest producers express more of an interest in research, and communicate more frequently with scholars at other institutions". However, later in the career, collaboration does not effect productivity, but he also states that collaboration has an effect on publishing early

in a career, and those who are productive tend to remain productive.

The job assignment may have some effect on an individual's time to devote to writing. Extension specialists develop educational materials, conduct group meetings, workshops, field days, home and farm visits, answer individual questions, train agents, and must also report to the administration (University of Tennessee Agricultural Extension Service Appointment/Promotion/Tenure Committee Recommendations, 1990). These factors make it difficult to publish articles or to conduct research. Thomas (1989) believes that administrators who encourage their employees to publish should restrict their research time away from the office to four-hour blocks. This could give the employee time to write and conduct literature reviews in the library. If the specialist does not have adequate time to write due to other responsibilities, this may become a limiting factor pertaining to research productivity. As reported, there was a negative influence of heavy undergraduate teaching responsibilities with research productivity (Astin 1978, Blackburn, et al. 1978). These studies relate that time was the limiting factor for research productivity.

Another limiting factor in research productivity is the lack of research resources. If the correct tools are not available to conduct adequate research, it is difficult to

do. These factors may include the amount of literature to review, the individual's research abilities (Thomas, 1989), and the universities' or colleges' facilities (Allison & Stewart, 1974). Those specialists located off campus have more problems with these factors than those specialists on campus. Crane (1965) compared graduates of prestigious universities and their research productivity to graduates of other universities and their productivity. The more prestigious graduates had fewer limitations and worked with faculty members who intended to publish more so they were more productive. They had more resources to work with and were expected to use them.

A review of the literature is needed to do adequate research, however, Extension specialists have to review literature not only for research purposes, but to stay abreast of new innovation. The ways to conduct a literature review were studied by Chaloner and Klerk (1980). They surveyed the faculty members at Carnegie-Mellon University and found that 28 percent read "current contents", 61 percent used indexes and abstracts, 86 percent attended conferences, 78 percent maintained personal subscriptions to journals, and 74 percent browsed in the library to stay informed. Wanner, Lewis, and Gregorio (1980) found that journal subscriptions was one way to aid in measuring commitment to research. The findings report that the number of subscriptions did have a significant effect on the

articles produced.

Academic ranks are considered lecturer, instructor, and assistant, associate, and full professor (Astin, 1978; Blackburn et al., 1978; Fulton & Trow, 1974). Research productivity in some institutions has a direct bearing on the academic rank of an individual if his/her institution puts great emphasis on research. Rank at this type of institution, which puts emphasis on research productivity, indicates past productivity, which was discussed earlier in the review. When an individual receives a promotion, this is an indicator of high research productivity in the past. This in turn is a good indicator of future high levels of productivity in research (Blackburn et al. 1978).

The variable that limits productivity the most is motivation. Kelly and Warmbrod et al. (1986) stated "it is clear that productive researchers are self-starters with high motivations to do research". This motivation can be facilitated as explained by Bullford (1987) by the use of workshops in writing, design, and publication acceptance procedures. Individuals with the desire and skill will produce higher quality articles than those individuals who lack these two important characteristics (Kelly & Warmbrod, 1986).

Correlation of Productivity and Performance

McAlister (1990) found that the important activities in making decisions on Extension specialist performance as perceived by Extension directors were publishing, applied research, and public information work. The directors put less importance on writing newspaper articles, newsletters, participating in short courses and conferences when rating Extension specialists performance.

Research productivity is an important tool to measure performance. This productivity can be measured in many ways. Indexes have been used in some instances to weight different publication on their importance or quality. Quantity should not be the most important measure. Hardoak (1978) said it the best, "...the inordinate consumption of wood pulp required by recent growth of academic publication contributed more to ecological blight than to scholarly enlightenment".

Research productivity is affected by many different variables. This study looks at the limitations on productivity as well as the characteristics of a good Extension specialist. The Extension specialists are a valuable part of the Cooperative Extension System and to impose limiting factors that might restrict their performance levels may not be in the best interest of the land-grant universities.

Little research has been devoted to studying the relationship of research productivity and performance of Extension specialists. This is a very broad study which proposes to look at performance that the administration values, not necessarily what makes a competent specialist. Further research needs to be conducted on what makes an effective specialist and not just how the universities teaching and research faculty are evaluated.

Chapter III

METHODOLOGY AND PROCEDURES

Selection of the Sample

There are approximately 1550 Agricultural Extension Specialist in the southeast. A random sample of 344 was drawn from all of the agricultural Extension specialists who are listed in the 1991-92 Directory of Professional Workers in the State Agricultural Experiment Station and Other Cooperating State Institutions (revised Jan. 1992). The sample size of 344 was adequate to allow a greater than 95% confidence in the findings, assuming the respondents were non-biased (McCall, 1980).

Instrumentation

After reviewing the literature a suitable instrument was not found to measure the objectives of this study. A questionnaire was developed (Appendix A) to study the demographic characteristics, research productivity, Extension publications, attitudes, and self-reported job performance of agricultural Extension specialists in the southeast.

Demographic Characteristics

The demographic characteristics were chosen after reviewing the literature. These characteristics were age, office location, number of staff members at office location, academic rank in their position (Professor, Specialist, or Agent), level of education and the number of years to complete their degree, number of teaching events, number of memberships in professional organizations and the degree of involvement, journals subscriptions and how read, and job responsibility with respect to audience and major audience.

Age was shown by Bean (1982) not to have an effect on research productivity. Office location did have effect on research productivity according to Bean (1982), Blackburn et al (1978), Crane (1965), Kelly and Warmbrod (1986), Allison and Stewart (1974), and Long (1978). Blackburn et al. (1978) indicated that academic rank has an influence on research productivity. Also, Allison and Stewart (1974) showed that educational level and years between degrees had differences in productivity. Educational events and job responsibility had a correlation to research productivity according to Thomas (1989).

Bean (1982) wrote that collaboration has an effect on productivity. He described the effect in several different ways. Two of the ways were the number of staff members in the department and membership to professional organizations and their involvement in them. Journal subscription was

found by Wanner, Lewis, and Gregorio (1980) to aid in measuring the commitment to research. However, few data were found pertaining directly to agricultural Extension specialists and their research productivity or Extension publications.

Research Productivity and Extension Publications

This part of the questionnaire was based upon research conducted by McAlister (1990). He found that state Extension directors ranked the importance of activities typically used in promotion, tenure, salary decision of Extension faculty. In published articles he found that state Extension directors looked at work in different categories. Some of these categories were refereed journals, other journals, research reports, books, Extension publications, newsletters, and newspaper articles. After the pilot test the researcher divided Extension publications into two groups; peer reviewed and non-peer reviewed.

The published articles were divided into groups based upon authorship. The groups indicated whether the respondents were sole author, co-author, or simply assisted with the article. The respondents were asked to give the number of articles written in the last three years in the various categories and the type of authorship.

Attitudes

Kelly et al. (1986) said motivation was one of the most limiting factor of research productivity. A Likert-scale was developed to measure the respondents' positive or negative beliefs about conducting and writing research, as discussed by Kelly et al. (1986). The organizations' emphasis on refereed articles and fairness in promotion and evaluation was addressed by Blackburn et al. (1978). Whether or not the organization gives adequate time to conduct and write research was considered by Thomas (1989). These variables were built into the questionnaire.

Self-reported Job Performance

Job Performance was reported on a scale from 1 to 10 with 1 being least and 10 being the highest. Two scales were used to score the agricultural Extension specialists' self-reported performance. One was how supervisor evaluated them, the other was how the respondents perceived their own performance.

Validity of the Instrument

A panel of agricultural Extension specialists from The University of Tennessee helped establish the face and content validity of the instrument. Among these panel members were an Extension specialist in food science and technology who had been on the committee that developed The

University of Tennessee Extension evaluation criteria and two professors in agricultural and extension education. The questionnaire was evaluated regarding its ability to be answered in a reasonable amount of time and its readability. Several corrections were made and the questionnaire was evaluated again.

Pilot Study

In order to further improve the validity of the questionnaire, it was pilot tested with The University of Tennessee Agricultural Extension Specialists from the Agricultural Economics Department in a group meeting. The specialists filled out the questionnaire and were asked to include comments. After they were through, a discussion followed with possible changes that could be made in the questionnaire. Those items discussed in addition to the written comments were evaluated. The only changes that were made were for clarification.

Administration of Questionnaire

The questionnaire was mailed in July of 1993 to each of the respondents with a cover letter and a pre-addressed stamped return envelope. The cover letter was designed to explain the purpose of the study and to encourage the selected respondents to participate. It also clarified that

participation was voluntary and if the respondents did not wish to participate they should simply return the unanswered questionnaire. The questionnaires were coded for ease of data analysis, however respondents were assured of confidentiality in their responses.

After the initial mailing, a follow-up post card was sent to non-respondents two weeks later. A second questionnaire, new cover letter, and return envelope were sent to the non-respondents, two weeks after the post card was mailed. This procedure was outlined in Dillman's book, Mail and Telephone Surveys The Total Design Method (1978).

Four weeks after the second questionnaire was mailed the response rate was assessed. The total response was 287 (83.4 percent) from the 344 mailed. Forty-six (13.3 percent) were not usable in the analysis of the data. From these 46 returned, 17 (4.9 percent) were unanswered, 7 (2 percent) were undeliverable due to incorrect address, 8 (2.3 percent) were retired, and 14 (4.1 percent) were no longer employed in that position. There were 205 (59.6 percent) useable questionnaires returned from the initial mailing and 36 (10.5 percent) useable from the second mailing for a total of 241 (70.1 percent) useable questionnaires.

An analysis between the early and late responses indicated very few differences which were significant. There were only five variables out of nearly 100 studied which produced significant differences between early and late

responders. Early responders skimmed fewer journal articles than did late responders, they published a few more non-peer reviewed articles which were sole author, they participated in fewer home/farm visits, and they perceived they had slightly more time for writing. However, these differences were not considered substantive enough to believe any biases existed between the two groups. Since early responders were generally found to be like late responders, and since late responders were assumed to be like non-responders (Goldhor, 1972), additional follow-up of non-response was not considered necessary. Responses from this sample were assumed adequate to generalize to the population from which it was drawn.

Analysis of Data

The data from the questionnaire were analyzed using appropriate descriptive and inferential statistics. The relationships between dependent and independent variables were tested using analysis of variance (f test) and pearsonnian correlation coefficient. In situation where independent variables were nominally scaled and dependent were interally scaled, the analysis of variance was employed. In situations where independent and dependent variables were interally scaled the pearsonnian correlation coefficient was employed.

The main frame computer at the University of Tennessee Computing Center in Knoxville was used to analyze the data.

The Statistical Package for the Social Scientist software package was used to summarize the data (SPSS release 4.0, SPSS reference Guide, 1990). An alpha level of .05 was selected for all probability testing.

Demographic Information

A frequency count was completed for some items on the questionnaire to describe the respondents. Number and percentage were used to describe demographic characteristics of the respondents including age, office location, academic rank, educational level, and major audiences.

The number, mean, and standard deviation were use to describe number of staff in the department, number of years to complete educational degrees, number of memberships in professional organizations and involvement in these organizations, number of journals subscriptions and how journals were read, job responsibility planned and actual, and educational events organized and participated in on five different levels.

Scores similar to the index Crane (1965) developed were used to consolidate the responses in professional organization involvement, teaching events and how journals were read. Professional organization involvement was weighted by offices held and committee memberships. Since holding an office is a more difficult responsibility than serving on a committee, offices held received a weighed value of two and committees

memberships received a weighed value of one. Offices and committees could have levels. These levels were local, state, regional, and national. The local level tends to be smaller and less technical as compared to the national level. The national level of professional involvement tends to involve more people and more technical subject matter. The weighed values for these levels were local 1 point, state 2 points, regional 3 points, and national 4 points. These weighed value of both offices held and committee memberships were combined with the levels to compute the professional organization involvement scores.

The scores for "teaching events in the last year" considered the different levels of involvement in the number and types of audiences. The county level was considered to be smaller and less technical as compared to the national level which was considered to involve more people and more technical subject matter. The weighted values were as follows: county 1 point, area or district 1.5 points, state 2 points, regional 2.5 points, national 3 points. McAlister (1990) indicated that the amount of involvement in the event can differ dramatically. If the specialist presented a program they had used for years and only participates in the event, versus organizing the event. "Participation" had a weighted value of 2.32 compared to "organized" which had a weighed value of 2.68. These weighted values were combined to calculate the "teaching events scores".

The scores for "journals read" were developed to measure the commitment to reading journals. Journals "read from cover to cover" had a weighted value of 3, "read just interested articles" had a value of 2, and "skimmed journals" had a value of only 1. These weighted factors were combined to calculate the "journal reading scores".

Research Productivity and Extension Publications

Research Productivity was measured by calculating "productivity scores" based upon a number of important variables gleaned from the literature. The basis of the score was the number of articles published within the past three years. However as stated by McAlister (1990), the "kind" of article should be considered when calculating a research productivity score. Therefore, as was recommended by Extension deans in McAlister's study (1990), articles which were published in "refereed journals" were given a weight of 2.79, "other (non-refereed) articles" were given a weight of 2.72, "research reports" were weighted 2.75, "books" were weighted 2.79, "peer-reviewed Extension publications" were weighted 2.68, "non-peer reviewed Extension publications" were weighted 2.5, "newsletters" were weighted 2.27, and "newspaper articles" were weighted 2.27. Further, McAlister also indicated that the research productivity score should reflect the "contribution" which the author actually made to the reported article. Therefore, articles which were "sole-

author" were given an additional weight of 2, articles which were "co-author" were given a weight of 1.5, and articles which were listed by the author as only "assisted with" were given a weight of 1. Each of these weights was used in conjunction with the actual "number of articles reported" to calculate research productivity scores for each specialist in the study.

In the final analysis, research productivity was actually measured in this study in two ways. As described above, the "number" and "kinds" of articles were considered along with the "author's contribution" to those articles, when calculation productivity scores. However, since the studies reported in the literature usually defined research productivity in a very traditional "academic" setting, they did not include those kinds of articles often written by Extension specialists (ie. Extension publications, newsletters, newspaper articles, etc.). Originally, the researcher intended to simply include all kinds of articles in the calculation of a single research productivity score. However, initial analysis of data indicated this resulted in "masking" most of the relationships which existed between research productivity scores and the independent variables which were studied because of the interrelationship between traditional "academic" research productivity and "Extension" research productivity. In other words, those specialists who were highly productive in the traditional academic arena (ie.

published in refereed journals, research reports, etc.) were not very productive in the Extension publication area (Extension publications, newsletters, etc.) and those who were highly productive as measured by Extension publications failed to be very productive in the traditional academic productivity and the studied independent variables, the researcher decided to define research productivity in two ways. The first productivity score referred to throughout the rest of the study as "research productivity" was calculated based solely upon the weighted scores for "refereed journal articles", "other journal articles", "research reports", and "books". The second productivity score (referred to throughout the rest of this study as "Extension publication scores") was calculated based solely upon the weighted scores of "peer-reviewed Extension publications", "non-peer-reviewed Extension publications", newsletters, and "newspaper articles". The identification of these two separate measures of research productivity (ie. dependent variables) allowed the researcher to compare his results with those reported in earlier literature and to look specifically at the kinds of research activity reported by the traditional Extension specialists.

Attitudes

A Likert-scale was developed to measure the respondents' attitudes toward "research enjoyment" and "their organization". The scale was scored with 1 representing

strongly agree, 2 agree, 3 undecided, 4 disagree, and 5 strongly disagree. All questions were phrased positively. The "enjoyment scale" reflected some of the elements needed for doing and writing research. There were six items in this scale, therefore a score of "six" indicated a strong positive attitude and a score of "30" indicated a strong negative. The statement "the organization places high emphasis on refereed articles" was scored by itself with scores ranging from 1 to 5. The statements considering "the organizations fairness in promotion and evaluation" were scored together and could range from 2 to 10. The statements considering "adequate time" reflected if the organization gave the specialists adequate time to review, write, and conduct research. "Adequate time" had a range of scores from 3 to 15.

Self-reported Job Performance

Self-reported job performance was score on a 10 point scale with 1 being the lowest score and 10 being the highest score. The respondents had two performance questions. One was the evaluation their department head gave them, the other was how they rated their own performance.

CHAPTER IV

FINDINGS

Introduction

Chapter IV will discuss the major findings of this study. It will be organized into sections relating to the objectives of the study. Each section will be organized into subsection representing the independent variable studied.

Objective One

The first objective of the study was to develop a demographic profile of agricultural Extension specialists in the southeast. Demographic information sought from specialists included age, office location, number of staff members at office location, academic rank, level of education and years between degrees, number of teaching events, number of memberships in professional organizations and the degree of involvement, journals subscriptions and how read, and job responsibility with respect to audience and major area. Table 1 summarizes demographic data which were nominally scaled.

Table 1. Demographic Characteristics of Agricultural Extension Specialist in the Southeast in Regard to Age, Office Location, Academic Rank, Terminal Educational Degree, and Major Audience Type.

Characteristics	Respondents	
	Number	Percent
Age		
18 to 29	4	1.7
30 to 44	111	46.1
45 to 59	110	45.6
>59	16	6.6
Total	241	100.0
Office Location		
University Campus	179	74.3
Experiment Station	35	14.5
District/Regional	25	10.4
Other	1	.4
Missing	1	.4
Total	241	100.0
Academic Rank		
Assistant	40	16.6
Associate	70	29.0
Full	115	47.7
Other	15	6.2
Missing	1	.4
Total	241	100.0

Table 1 (continued)

Characteristics	Respondents	
	Number	Percent
Educational Degree		
Bachelor	3	1.2
Master	35	14.5
Doctorate	192	79.7
Missing	11	4.6
Total	241	100.0
Major Audience Type		
Adult	137	56.9
Youth	3	1.2
Youth and Adult	94	39.0
Missing	7	2.9
Total	241	100.0

Age

Respondents indicated their age by selecting one of four mutually exclusive age categories ranging from eighteen to over fifty-nine. As reported in Table 1, 4 (1.7 percent) of the respondents were of 18 to 29 years old, 111 (46.1 percent) were from 30 to 44 years old, 110 (45.6 percent) were from 45 to 50 years old, and 16 (6.6 percent) indicated that they were 60 years of age or older.

Office Location

Respondents indicated where their offices were located by selecting one of five possible locations. As reported in Table 1, 179 (74.3 percent) indicated their office was located on a university campus, 35 (14.5 percent) indicated their office was located on an experiment station, 25 (10.4 percent) were located in a district or regional office 1 (.4 percent) was located in a county office and 1 (.4 percent) did not report his/her office location.

Academic Rank

Respondents indicated their rank by selecting one of four categories. Actual titles (i.e. professor, specialist, etc.) were not studied but they classified themselves as either assistant (title), associate (title), full (title), or other (title). As reported in Table 1, 40 (16.6 percent) of the respondent were assistants, 70 (29 percent) were associates,

115 (47.7 percent) were full, 15 (6.3 percent) responded as being other, and 1 (.4 percent) did not report his/her rank.

Educational Degree

Respondents indicated their highest educational degree. As reported in Table 1, 3 (1.2 percent) responded that the Bachelors Degree was their highest degree, 36 (14.9 percent) indicated that the Masters' Degree was their highest degree, 193 (80.2 percent) had achieved their doctorate, and 9 (3.7 percent) did not report their degree level.

Major Audience

Respondents were asked to indicate their major audience type. The categories were "adult", "youth", and "adult and youth". With 241 respondents, the data in Table 1 reported that 137 (56.9 percent) responded that their major audience was adult, 3 (1.2 percent) indicated their major audiences was youth, 94 (39 percent) had audiences in both adult and youth, and 7 (2.9 percent) did not report.

Table 2 reports the number of respondents, means, and standard deviations for the intervally scaled demographic characteristics of "number of staff in the department at their location", "number of memberships in professional organizations", "their involvement in the professional organization", "number of journal subscriptions", "number of journals read and how", "planned job responsibility", and

Table 2. Demographic Characteristics of Agricultural Extension Specialists in the Southeast in Regard to Number of Staff at Office Location, Number of Memberships in Professional Organizations, Involvement in Professional Organizations, Number of Journal Subscriptions, Number of Journals Read per Month, Percentages of Planned Job Responsibility, and Percentages of Actual Job Responsibility.
(n Respondents = 241)

Characteristic	mean	s.d.
Staff in Department	16.72	16.06
Professional Organization memberships	4.56	2.60
Professional Organizational Involvement		
Local Offices	.42	.89
State Offices	.73	1.16
Regional Offices	.36	.81
National Offices	.30	.67
Local Committees	1.24	2.98
State Committees	1.62	2.01
Regional Committees	.78	1.35
National Committees	1.04	1.50
Number of Journal subscriptions	3.51	2.71
Journals Read per Month		
Cover to Cover	.42	1.10
Just Articles of Interest	3.16	2.89
Skimmed	2.62	3.67

Table 2 (continued)

Characteristic	mean	s.d.
Planned Job Responsibility Time		
Percent Extension	82.19	24.91
Percent Teaching	5.70	13.67
Percent Research	12.11	21.80
Actually Job Responsibility Time		
Percent Extension	76.12	26.32
Percent Teaching	7.73	15.11
Percent Research	16.17	20.81

"actual job responsibility" of the agricultural Extension specialists in the southeast.

Staff in the Department

Respondents indicated the number of departmental staff members located at their office location. As Table 2 indicates, the 241 respondents who answered this question reported an average of 16.72 faculty members in their offices (s.d.=16.6).

Memberships in Professional Organizations

Respondents indicated the number of professional organizations of which they were a member. As reported in Table 2, the 241 respondents reported an average membership in 4.56 organizations (s.d.= 2.6).

Professional Organizational Involvement

Respondents indicated the category of involvement in professional organization as "office held" and "committees memberships" as well as which of the 4 levels of involvement they experienced in the last 3 years. Two hundred and forty-one respondents reported holding an average of .42 local offices (s.d.=.89), an average of .73 state offices (s.d.=1.16), an average of .36 regional offices (s.d.=.81), and an average of .30 national offices (s.d.=.67). Regarding committee memberships, respondents reported an average of 1.24

local (s.d.=2.98), 1.62 state (s.d.=2.01) .78 regional (s.d.=1.35), and 1.04 national (s.d.=1.50), respectively.

Numbers of Journal Subscriptions

Respondents indicated how many journal subscription they received. As reported in Table 2, 241 respondents reported subscribing to an average of 3.51 (s.d.=2.71) journals.

Journals Read per Month

Respondents indicated how journals were read each month (on average) in 3 categories. With 241 responding in Table 2, the average number of journals read from cover to cover was .42 (s.d.=1.1), the average number of journals in which only articles of interest were read was 3.16 (s.d.=2.89), and the average number of journals just skimmed was 2.62 (s.d.=3.67).

Planned Job Responsibility Time

Respondents indicated 3 categories in which they planned to spend their time. The responses were indicated as a percent of their responsibilities in "Extension", "teaching", and "research". As reported in Table 2, 241 respondents reported the average percent planned in Extension was 82.19 (s.d.=24.91), teaching was 5.70 (s.d.=13.67), and research was 12.11 (s.d.=21.80).

Actual Job Responsibility Time

Respondents indicated three categories in which they actually spent their time. The responses were indicated as a percent of their responsibilities in "Extension", "teaching", and "research". As reported in Table 2, 241 respondents reported the average percent actually spent in Extension was 76.12 (s.d.=26.32), teaching was 7.73 (s.d.=15.11), and research was 16.17 (s.d.=20.81).

Table 3 reports the teaching events by agricultural Extension specialists in the southeast, in the categories and the level in which they occurred. The 240 respondents indicated their responses in three teaching categories and five levels with two responsibilities in each level.

Educational Meeting, Field Day, etc

As reported in Table 3, the respondents averaged organizing 1.81 (s.d.=4.86) county events and participated in 11.32 (s.d.=15.18) county events. Respondents averaged organizing 1.47 (s.d.=3.21) area/district events and participated in 3.92 (s.d.=6.59) area/district events. Respondents averaged organizing 2.85 (s.d.=5.92) state events and participated in 5.97 (s.d.=12.94) state events. Respondents averaged organizing .48 (s.d.=1.51) regional events and participated in 1.30 (s.d.=2.71) regional events. Respondents averaged organizing .46 (s.d.=2.10) national events and participated in 1.55 (s.d.=4.21) regional events.

Table 3. Teaching Events Conducted by Agricultural Extension Specialist in the Southeast in the last Year in Regard to Level and Responsibility.
(n respondent = 240)

Level*			Teaching Events		
			Educational meetings, Field Days, etc.	Verbal Mass Media, Audio, Video tapes, and Personal Interviews	Farm or Home Visits
County	Org.	mean	1.81	2.16	5.11
		s.d.	4.86	20.69	17.53
	Par.	mean	11.32	4.05	22.25
		s.d.	15.18	23.05	54.56
Area/ District	Org.	mean	1.47	.68	3.75
		s.d.	3.21	4.72	28.82
	Par.	mean	3.92	2.02	5.30
		s.d.	6.59	6.81	35.54
State	Org.	mean	2.85	2.61	3.15
		s.d.	5.92	12.71	11.91
	Par.	mean	5.97	4.38	4.65
		s.d.	12.94	10.56	27.15
Regional	Org.	mean	.48	1.05	0.00
		s.d.	1.51	7.85	0.00
	Par.	mean	1.30	.73	.10
		s.d.	2.71	3.56	1.00
National	Org.	mean	.46	.15	.14
		s.d.	2.10	.84	1.38
	Par.	mean	1.55	.51	.15
		s.d.	4.21	2.19	1.20

* Org.- Organized Par.- Participated

Verbal Mass Media, Audio, Video tapes, and Personal Interviews

As reported in Table 3, the respondents averaged organizing 2.16 (s.d.=20.69) county events and participated in 4.05 (s.d.= 23.05) county events. Respondents averaged organizing .68 (s.d.=4.72) area/district events and participated in 2.02 (s.d.=6.81) area/district events. Respondents averaged organizing 2.61 (s.d.=12.71) state events and participated in 4.38 (s.d.=10.56) state events. Respondents averaged organizing 1.05 (s.d.=7.85) regional events and participated in .73 (s.d.=3.56) regional events. Respondents averaged organizing .15 (s.d.=.84) national events and participated in .51 (s.d.=2.19) regional events.

Farm or Home Visits

As reported in Table 3, the respondents averaged organizing 5.11 (s.d.=17.53) county events and participated in 22.25 (s.d.=54.56) county events. Respondents averaged organizing 3.75 (s.d.=28.82) area/district events and participated in 5.30 (s.d.=35.54) area/district events. Respondents averaged organizing 3.15 (s.d.=11.91) state events and participated in 4.65 (s.d.=27.15) state events. Respondents averaged organizing 0 (s.d.=0) regional events and participated in .10 (s.d.=1.00) regional events. Respondents averaged organizing .14 (s.d.=1.38) national events and participated in .15 (s.d.=1.20) regional events.

Objective Two

The next objective of the study was to determine the relationships between demographic variables and research productivity as well as Extension publications scores. These data descriptions are found in the next four tables. Table 4 describes the relationships among selected independent variables and research productivity scores. Research productivity scores were computed based upon the number of refereed journal articles, other journals articles, research reports, and books published within the past three years by respondents. Scores were weighted depending upon the kind of publication and whether they were written as sole author, co-author, or simply assisted with the publication.

Age

The first independent variable studied was age. Based upon the data in Table 4 there is no reason to conclude that there is a relationship between age and research productivity scores ($f=2.07$ $df=3,235$ $p=.1053$).

Office Location

The second independent variable studied in this analysis was office locations. Respondents were housed in either university campuses, experiment stations, or district/regional offices. As reported in Table 4, there is a statistically

Table 4. The Relationships of Age, Office Location, Rank, Speed in Completion of Doctoral Degree, Speed in Completion of Master Degree, Terminal Degree, Percentage Planned Appointment, Percentage Actual Appointment, and Major Teaching Audiences with Research Productivity Scores.

Characteristic Group	n	mean*	f	p
Age			2.07	.1053
18-29	4	7.23		
30-44	111	42.25		
45-59	108	47.38		
>59	16	12.27		
Office Location			7.72	.0006
University Campus	178	36.28 A		
Experiment Station	35	78.25 B		
District/Regional	24	34.80 A		
Rank			.75	.4744
Assistant	40	33.22		
Associate	69	45.30		
Full	115	46.82		
Speed in Completion of Doctoral Degree			3.94	.0487
Within 6 Years	69	58.98		
Over 6 Years	119	40.27		
Speed in completion of Master Degree			1.09	.2978
Within 2 Years	87	46.62		
Over 2 Years	127	38.01		

Table 4 (continued)

Characteristic Group	n	mean*	f	p
Terminal Degree			5.53	.0045
Bachelors	3	12.92 AB		
Masters	35	12.81 A		
Doctoral	192	48.20 B		
Percentage Planned Appointment			7.41	.0008
Extension	204	36.88 A		
Teaching	5	40.60 AB		
Research	19	90.97 B		
Percentage Actual Appointment			8.99	.0002
Extension	193	36.39 A		
Teaching	8	29.80 A		
Research	22	92.54 B		
Major Audience			.24	.6244
Adult	136	42.61		
Adult and Youth	93	38.65		

* Means with different letters are significantly different as indicated by the Duncan's Multiple Range Test.

significant relationship between office location and research productivity ($f=7.72$ $df= 2,234$ $p=.0006$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists housed in experiment station offices were significantly more productive in research than were those specialists housed at either university campus or district/regional office.

Rank

The third independent variable studied in this analysis was academic rank. Respondents were asked to indicate their rank as assistant, associate, or full. As reported in Table 4, there is no reason to conclude that there is a relationship between rank and research productivity scores ($f=.75$ $df=2,221$ $p=.4744$).

Speed in the Completion of Doctoral Degree

The fourth independent variable studied in this analysis was speed in the completion of doctoral degree. Respondents were categorized into two groups: those who completed doctoral degrees in six years or less, and those who completed doctoral degrees in more than six years. As reported in Table 4, there is a statistically significant difference between these two groups regarding research productivity ($f=3.94$ $df= 1,186$ $p=.0487$). Those specialists who completed their doctoral degrees in six years or less were significantly more

productive in research than were those specialists who completed their doctoral degrees in more than six years.

Speed in the Completion of Master's Degree

The fifth independent variable studied in this analysis was the speed in completion of Master's Degrees. Respondents were categorized into two groups: those who completed Master's Degrees in two years or less, and those who completed Master's Degrees in more than two years. As reported in Table 4, there is no reason to conclude that there is a relationship between length of time to complete their Master's Degrees and research productivity scores ($f=1.09$ $df=1,212$ $p=.2978$).

Terminal Degree

The sixth independent variable studied in this analysis was the terminal degree. Respondents were categorized into three groups: those whose terminal degrees were doctoral, Masters, or Bachelors. As reported in Table 4, there is a statistically significant relationship between terminal degrees and research productivity ($f=5.53$ $df= 2,227$ $p=.0045$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists who had completed their doctoral degrees were significantly more productive in research than were those specialists with Masters' Degree. However there were too few respondents holding Bachelors' Degree (3) to conclude that they were significantly different

from either of the other two groups.

Planned Percentage of Job Responsibility

The seventh independent variable studied in this analysis was planned percentage of job responsibility. Respondents indicated job responsibility as a percentage in three categories. These categories were percentage of time planned in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time was planned. As reported in Table 4, there is a statistically significant relationship between the planned job responsibilities and research productivity ($f=7.41$ $df= 2,225$ $p=.0008$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists who had most of their planned job responsibility in research were significantly more productive in research than were those specialists with more Extension job responsibility. However there were too few specialists reporting the majority of their time in teaching to conclude that they were significantly different from either of the other two groups.

Actual Percentage of Job Responsibility

The eighth independent variable studied in this analysis was actual percentage of job responsibility. Respondents could have indicated job responsibility as a percentage in three categories. These categories were percentage of time

actually spent in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time. As reported in Table 4, there is a statistically significant relationship between the actual job responsibilities and research productivity ($f=8.99$ $df= 2,220$ $p=.0002$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists who had most of their actual job responsibility in research were significantly more productive in research than were those specialists with more Extension and teaching job responsibilities.

Major Audience

The ninth independent variable studied in this analysis was major audience. Respondents indicated their audience as adult, youth, and adult/youth. However, since only 3 respondents indicated a "youth" audience, this category was dropped from all future analyses in order to not violate the assumption of the inferential test. Therefore, in the study major audience was defined as either "adult" or "both adult and youth". As reported in Table 4, there is no reason to conclude that there is a relationship between major audience and research productivity scores ($f=.24$ $df=1,227$ $p=.6244$).

Table 5 describes the relationships among selected independent variables and Extension publication scores.

Table 5. The Relationships of Age, Office Location, Rank, Speed in Completion of Doctoral Degree, Speed in Completion of Master Degree, Terminal Degree, Percentage Planned Appointment, Percentage Actual Appointment, and Major Teaching Audience with Extension Publication Scores.

Characteristic Group	n	mean*	f	p
Age			.61	.6064
18-29	4	116.52		
30-44	110	175.28		
45-59	108	216.78		
>59	16	259.75		
Office Location			.85	.4285
University Campus	177	188.76		
Experiment Station	35	263.53		
District/Regional	24	185.19		
Rank			1.21	.2995
Assistant	39	213.36		
Associate	69	157.23		
Full	115	233.25		
Speed in Completion of Doctoral Degree			.05	.8293
Within 6 Years	69	184.45		
Over 6 Years	119	177.99		
Speed in completion of Master Degree			.50	.4792
Within 2 Years	87	195.74		
Over 2 Years	127	173.68		

Table 5 (continued)

Characteristic Group	n	mean*	f	p
Terminal Degree			.70	.4980
Bachelors	3	34.16		
Masters	35	190.51		
Doctoral	192	183.58		
Percentage Planned Appointment			3.25	.0407
Extension	204	223.20	A	
Teaching	4	106.46	AB	
Research	19	35.84	B	
Percentage Actual Appointment			4.12	.0175
Extension	193	229.17	A	
Teaching	7	97.51	AB	
Research	22	34.15	B	
Major Audience			3.39	.0669
Adult	135	166.84		
Adult and Youth	93	221.70		

* Means with different letters are significantly different as indicated by the Duncan's Multiple Range Test.

Extension publication scores were computed based upon the number of Extension publications peer reviewed, Extension publications non-peer reviewed, newsletters, and newspaper articles published within the past three years by respondents. Scores were weighted depending upon the kind of publication and whether they were written as sole author, co-author, or simply assisted with the publication.

Age

The first independent variable studied was age. Based upon the data in Table 5, there is no reason to conclude that there is a relationship between age and Extension publication scores ($f=.61$ $df=3,234$ $p=.6064$).

Office Location

The second independent variable studied in this analysis was office location. Respondents were housed in either university campuses, experiment stations, or district/regional offices. As reported in Table 5, there is no reason to conclude that there is a relationship between office location and Extension publication scores ($f=.85$ $df=3,233$ $p=.4285$).

Rank

The third independent variable studied in this analysis was academic rank. Respondents indicated their rank as assistant, associate, or full. As reported in Table 5, there

is no reason to conclude that there is a relationship between rank and Extension publication scores ($f=1.21$ $df=2,220$ $p=.2995$).

Speed in the Completion of Doctoral Degree

The fourth independent variable studied in this analysis was speed in the completion of Doctoral degree. Respondents were categorized into two groups: those who completed doctoral degrees in six years or less, and those who completed doctoral degrees in more than six years. As reported in Table 5, there is no reason to conclude that there is a relationship between speed in completing doctoral degrees and Extension publication scores ($f=.05$ $df=1,186$ $p=.8293$).

Speed in the Completion of Master's Degree

The fifth independent variable studied in this analysis was the speed in the completion of Master's Degree. Respondents were categorized into two groups: those who completed Masters' Degrees in two years or less, and those who completed Masters' Degrees in more than two years. As reported in Table 5, there is no reason to conclude that there is a relationship between speed in completing Masters' Degrees and Extension publication scores ($f=.50$ $df=1,212$ $p=.4792$).

Terminal Degree

The sixth independent variable studied in this analysis was the terminal degree. Respondents were categorized into three groups: those who held doctoral degrees, Master's Degrees, or Bachelor's Degrees. As reported in Table 5, there no reason to conclude that there is a relationship between terminal degree and Extension publication scores ($f=.70$ $df=2,227$ $p=.4980$).

Planned Percentage of Job Responsibility

The seventh independent variable studied in this analysis was planned percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time planned in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time was planned. As reported in Table 5, there is a statistically significant relationship between the planned job responsibilities and Extension publication scores ($f=3.25$ $df= 2,224$ $p=.0407$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that specialists who had most of their planned job responsibility in Extension were significantly more productive in Extension publications than were those specialists with more research job responsibility. However there was no reason to concluded that there was a difference between teaching and Extension or

research.

Actual Percentage of Job Responsibility

The eighth independent variable studied in this analysis was actual percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time actually spent in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time. As reported in Table 5, there is a statistically significant relationship between the actual job responsibilities and Extension publications scores ($f=4.12$ $df= 2,219$ $p=.0175$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that specialists who had most of their actual job responsibility in Extension were significantly more productive in Extension publications than were specialists with more research job responsibilities. However, there was no reason to concluded that there was a difference between teaching and Extension or research.

Major Audience

The ninth independent variable studied in this analysis was major audience. Respondents could have indicated their audience as adult, or adult and youth. As reported in Table 5, there is no reason to conclude that there is a relationship

between major audience and Extension publication scores ($f=3.39$ $df=1,226$ $p=.0669$).

Table 6 reports the relationship between the number of faculty, teaching event scores, number of professional organizations, professional activity scores, journal reading scores, and number of journal subscriptions and research productivity scores. Davis's convention was used to interpret the substance of these relationships (Davis,1971). As reported in Table 6, the relationships between the selected independent variables and research productivity scores are low to negligible. The strongest correlation was between teaching events score and research productivity (.25). However the teaching events scores only accounted for approximately six percent of the variance in research productivity. Other significant relationships were between professional activity scores and reading scores and research productivity.

Table 7 reports the relationship between number of faculty, teaching event scores, number of professional organizations, professional activity scores, journal reading scores, and number of journal subscriptions to Extension publication scores. Davis's convention was used to interpret the substance of these relationships (Davis,1971). As reported in Table 7, the relationships between the selected independent variables and Extension publication scores are low

Table 6. The Relationship of Number of Faculty, Teaching Event Score, Number of Professional Organizations, Professional Activity Score, Journal Reading Score, and Number of Journal Subscriptions to Research Productivity.

Characteristics	r	r ²
Number of Faculty	-.0985	0.0097
Teaching Event Score	.2528	0.0639
Number of Professional Organization Memberships	.1748	0.0306
Professional Activity Score	.2160	0.0467
Journal Reading Score	.2114	0.0447
Number of Journal Subscriptions	.1880	0.0353

Table 7. The Relationship of Number of Faculty, Teaching Event Score, Number of Professional Organizations, Professional Activity Score, Journal Reading Score, and Number of Journal Subscriptions to Extension Publication Score.

Characteristics	r	r ²
Number of Faculty	-.0486	0.0024
Teaching Event Score	.2067	0.0427
Number of Professional Organizations	-.0396	0.0016
Professional Activity Score	-.0212	0.0004
Journal Reading Score	-.0451	0.0020
Number of Journal Subscriptions	-.0728	0.0053

to negligible. The strongest correlation was between teaching events scores and Extension publications scores (.21). However the teaching events scores only accounted for approximately four percent of the variance in the Extension publication scores. There were no other substantive relationships found.

Objective Three

The third objective of the study was to determine the relationships between demographic variables and a number of attitudes respondents held about research productivity. The dependent variables for this analysis were: respondents' attitudes toward conducting research, respondents perceptions regarding the emphasis placed upon published refereed journal articles by the organization, their perceptions of the "fairness" of their promotion and evaluation processes, and their perceptions of whether they had adequate time to conduct research. The descriptions of these relationships are found in the next four tables.

Table 8 describes the relationships among selected independent variables and attitudinal scores toward conducting research. Attitudinal scores were computed based upon Likert-type questions with a score of 6 being the lowest and most positive attitude score and 30 being the highest and most negative score.

Table 8. The Relationships of Age, Office Location, Rank, Speed in Completion of Doctoral Degree, Speed in Completion of Master Degree, Terminal Degree, Percentage Planned Appointment, Percentage Actual Appointment, and Teaching Audience with Attitude Toward Conducting Research.*

Characteristic Group	n	mean**	f	p
Age			.81	.4914
18-29	4	14.25		
30-44	105	13.70		
45-59	101	14.42		
>59	13	13.77		
Office Location			.73	.4847
University Campus	165	13.90		
Experiment Station	32	14.06		
District/Regional	25	14.76		
Rank			3.15	.0447
Assistant	37	12.78	A	
Associate	65	14.09	AB	
Full	105	14.36	B	
Speed in Completion of Doctoral Degree			1.87	.1737
Within 6 Years	62	13.29		
Over 6 Years	112	13.97		
Speed in completion of Master Degree			.27	.6057
Within 2 Years	82	14.13		
Over 2 Years	118	13.89		

Table 8 (continued)

Characteristic Group	n	mean**	f	p
Terminal Degree			4.00	.0197
Bachelors	3	13.00 AB		
Masters	33	15.36 A		
Doctoral	178	13.66 B		
Percentage Planned Appointment			.48	.6201
Extension	191	14.09		
Teaching	4	13.75		
Research	18	13.28		
Percentage Actual Appointment			.34	.7100
Extension	181	14.09		
Teaching	7	14.29		
Research	20	13.45		
Teaching Audience			.32	.5721
Adult	129	13.95		
Adult and Youth	85	14.21		

* Attitudes score could range from 6 to 30 with lower scores indicating a more positive attitude.

** Means with different letters are significantly different as indicated by the Duncan's Multiple Range Test.

Age

The first independent variable studied was age. Based upon the data in Table 8, there is no reason to conclude that there is a relationship between age and attitude scores about conducting research ($f=.81$ $df=3,219$ $p=.4914$).

Office Location

The second independent variable studied in this analysis was office location. Respondents were housed in either university campuses, experiment stations, or district/regional offices. As reported in Table 8, there is no reason to conclude that there is a relationship between office location and attitude scores about conducting research ($f=.73$ $df=2,219$ $p=.4847$).

Rank

The third independent variable studied in this analysis was academic rank. Respondents indicated their rank as assistant, associate, or full. As reported in Table 8, there is a statistically significant relationship between rank and attitude scores about conducting research ($f=3.15$ $df= 2,204$ $p=.0447$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that specialists who were at the assistant rank had a significantly more positive attitude toward conducting research than specialists who held the rank of full. However, there was no difference between those in

the associate rank and assistant or full rank.

Speed in the Completion of Doctoral Degree

The fourth independent variable studied in this analysis was speed in the completion of doctoral degree. Respondents were categorized into two groups: those who completed doctoral degrees in six years or less, and those who completed doctoral degrees in more than six years. As reported in Table 8, there is no reason to conclude that there is a relationship between speed in the completion of doctoral degrees and attitude scores about conducting research ($f=1.87$ $df=1,172$ $p=.1737$).

Speed in the Completion of Master's Degree

The fifth independent variable studied in this analysis was the speed in the completion of Master's Degree. Respondents were categorized into two groups: those who completed Master's Degrees in two years or less, and those who completed Master's Degrees in more than two years. As reported in Table 8, there is no reason to conclude that there is a relationship between length of time to complete their Master's Degrees and attitude scores about conducting research ($f=.27$ $df=1,198$ $p=.6057$).

Terminal Degree

The sixth independent variable studied in this analysis was the terminal degree. Respondents were categorized into

three groups: those who held doctoral degree, Masters' Degrees, or Bachelors' Degrees. As reported in Table 8, there is a statistically significant relationship between terminal degrees held and attitude scores about conducting research ($f=4.00$ $df= 2,211$ $p=.0197$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists who held doctoral degrees were significantly more positive toward conducting research than were those specialists with Masters' Degree. However, there was no difference between those held the degree of Bachelors and Masters or doctoral.

Planned Percentage of Job Responsibility

The seventh independent variable studied in this analysis was planned percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time planned in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time was planned. As reported in Table 8, there is no reason to conclude that there is a relationship between the planned job responsibilities and attitude scores about conducting research ($f=.48$ $df=2,210$ $p=.6201$).

Actual Percentage of Job Responsibility

The eighth independent variable studied in this analysis

was actual percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time actually spent in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time. As reported in Table 8, there is no reason to conclude that there is a relationship between the actual job responsibilities and attitude scores about conducting research ($f=.34$ $df=2,205$ $p=.7100$).

Major Audience

The ninth independent variable studied in this analysis was major audience. Respondents indicated their audience as adult, or adult and youth. As reported in Table 8, there is no reason to conclude that there is a relationship between major audience and attitude scores about conducting research ($f=.32$, $df=1,212$ $p=.5721$).

Table 9 describes the relationships among selected independent variables and respondents' perceptions regarding the emphasis placed upon published refereed journal articles by their organization. Respondents perceptions were computed based upon answers to one Likert-type question with 1 representing a perception that their organization placed

Table 9. The Relationships of Age, Office Location, Rank, Speed in Completion of Doctoral Degree, Speed in Completion of Master Degree, Terminal Degree, Percentage Planned Appointment, Percentage Actual Appointment, and Teaching Audience with Their Perceptions Regarding the Emphasis Placed upon Refereed Journal Articles by Their Organization.*

Characteristic Group	n	mean**	f	p
Age			.49	.6898
18-29	4	2.25		
30-44	111	2.09		
45-59	110	2.29		
>59	16	2.13		
Office Location			.28	.7597
University Campus	179	2.15		
Experiment Station	35	2.31		
District/Regional	25	2.20		
Rank			4.10	.0179
Assistant	40	2.33	AB	
Associate	70	1.86	A	
Full	115	2.39	B	
Speed in Completion of Doctoral Degree			<.01	.9613
Within 6 Years	69	2.16		
Over 6 Years	120	2.15		
Speed in completion of Master Degree			1.74	.1889
Within 2 Years	88	2.31		
Over 2 Years	128	2.08		

Table 9 (continued)

Characteristic Group	n	mean**	f	p
Terminal Degree			.12	.8832
Bachelors	3	2.00		
Masters	36	2.25		
Doctoral	193	2.15		
Percentage Planned Appointment			6.91	.0012
Extension	206	2.32 B		
Teaching	5	1.20 AB		
Research	19	1.37 A		
Percentage Actual Appointment			7.56	.0007
Extension	195	2.37 B		
Teaching	8	1.38 A		
Research	22	1.45 A		
Teaching Audience			5.60	.0188
Adult	137	2.04		
Adult and Youth	94	2.44		

* Scores could range from 1 to 5 with a score of 1 indicting a perception of "high" emphasis.

** Means with different letters them are significantly different as indicated by the Duncan's Multiple Range Test.

"high" emphasis on refereed journal articles. Five was the highest score and it represented the perception that their organization placed "low" emphasis on refereed journal articles.

Age

The first independent variable studied was age. Based upon the data in Table 9, there is no reason to conclude that there is a relationship between age and attitude scores about the emphasis placed upon published refereed journal articles by their organization ($f=.49$ $df=3,237$ $p=.6898$).

Office Location

The second independent variable studied in this analysis was office location. Respondents were housed in either university campuses, experiment stations, or district/regional offices. As reported in Table 9, there is no reason to conclude that there is a relationship between office location and attitude scores about the emphasis placed upon published refereed journal articles by their organization ($f=.28$ $df=2,236$ $p=.7597$).

Rank

The third independent variable studied in this analysis was academic rank. Respondents indicated their rank as assistant, associate, or full. As reported in Table 9, there

is a statistically significant relationship between rank and attitude scores about the emphasis placed upon published refereed journal articles by their organization ($f=4.10$ $df=2,222$ $p=.0179$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists who were of the associate rank perceived their organization placed a significantly higher emphasis on refereed publications than those who held the rank of full. However, there was no difference between those held the rank of assistants and associate or full rank.

Speed in the completion of Doctoral Degree

The fourth independent variable studied in this analysis was speed in the completion of doctoral degree. Respondents were categorized into two groups: those who completed doctoral degrees in six years or less, and those who completed doctoral degrees in more than six years. As reported in Table 9, there is no reason to conclude that there is a relationship between speed in the completion of doctoral degree and attitude scores about the emphasis placed upon published refereed journal articles by their organization. ($f<.01$ $df=1,187$ $p=.9613$).

Speed in the Completion of Master's Degree

The fifth independent variable studied in this analysis was the speed in the completion of Masters' Degrees. Respondents were categorized into two groups: those who

completed Masters' Degrees in two years or less, and those who completed Masters' Degrees in more than two years. As reported in Table 9, there is no reason to conclude that there is a relationship between length of time to complete their Master's Degree and attitude scores about the emphasis placed upon published refereed journal articles by their organization ($f=1.74$ $df=1,128$ $p=.1889$).

Terminal Degree

The sixth independent variable studied in this analysis was the terminal degree. Respondents were categorized into three groups: those who held doctoral degree, Master Degree, or Bachelor Degree. As reported in Table 9, there is no reason to conclude that there is a significant relationship between terminal degrees held and attitude scores about the emphasis placed upon published refereed journal articles by their organization ($f=.12$ $df= 2,229$ $p=.8832$).

Planned Percentage of Job Responsibility

The seventh independent variable studied in this analysis was planned percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time planned in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time was planned. As reported in Table 9,

there is a statistically significant relationship between the planned job responsibilities and attitude scores about the emphasis placed upon published refereed journal articles by their organization ($f=6.91$ $df=2,227$ $p=.0012$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that specialists who reported greater than 50 percent of their planned time in research perceived their organization placed a significantly higher emphasis upon refereed journal articles than did those reporting 50 percent or more of their time in Extension. However, there was no difference between those respondents who reported 50 percent or more of their planned time in teaching and those who reported 50 percent of their planned time in Extension or research.

Actual Percentage of Job Responsibility

The eighth independent variable studied in this analysis was actual percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time actually spent in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time. As reported in Table 9, there is a statistically significant relationship between the actual job responsibilities and attitude scores about the emphasis placed upon published refereed journal

articles by their organization ($f=7.56$ $df=2,222$ $p=.0007$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that specialists who reported 50 percent or more of their actual time in research and teaching perceived their organization placed significantly higher emphasis on refereed journal articles than did those who reported 50 percent of their actual time in Extension.

Major Audience

The ninth independent variable studied in this analysis was major audience. Respondents indicated their audience as adult, or adult and youth. As reported in Table 9, there is a statistically significant relationship between the major audience and attitude scores of the emphasis placed upon published refereed journal articles by their organization ($f=5.60$ $df=1,229$ $p=.0188$). Those specialists whose primary audience were adult perceived their organization placed significantly higher emphasis on refereed journal articles than did those specialists whose primary audiences were adult and youth.

Table 10 describes the relationships among selected independent variables and respondents perceptions regarding the fairness of their promotion and evaluation processes. Perception scores were computed based upon responses to two Likert-type questions with a score of 2 being the lowest and

Table 10. The Relationships of Age, Office Location, Rank, Speed in Completion of Doctoral Degree, Speed in Completion of Master Degree, Terminal Degree, Percentage Planned Appointment, Percentage Actual Appointment, and Teaching Audience with Respondents Perceptions Regarding the Fairness of Their Promotion and Evaluation Processes.*

Characteristic Group	n	mean**	f	p
Age			3.13	.0266
18-29	4	6.00 AB		
30-44	111	5.45 B		
45-59	109	5.15 B		
>59	16	3.88 A		
Office Location			.05	.9528
University Campus	178	5.21		
Experiment Station	35	5.29		
District/Regional	25	5.12		
Rank			7.39	.0008
Assistant	40	5.30 AB		
Associate	69	5.90 B		
Full	115	4.74 A		
Speed in Completion of Doctoral Degree			3.30	.0708
Within 6 Years	69	4.81		
Over 6 Years	120	5.37		
Speed in completion of Master Degree			.02	.8921
Within 2 Years	88	5.18		
Over 2 Years	127	5.22		

Table 10 (continued)

Characteristic Group	n	mean**	f	p
Terminal Degree			.77	.4629
Bachelors	3	4.33		
Masters	35	5.51		
Doctoral	193	5.14		
Percentage Planned Appointment			.27	.7599
Extension	205	5.24		
Teaching	5	5.40		
Research	19	4.90		
Percentage Actual Appointment			1.92	.1496
Extension	194	5.31		
Teaching	8	6.25		
Research	22	4.68		
Teaching Audience			1.61	.2058
Adult	136	5.08		
Adult and Youth	94	5.43		

* Perception scores could range from 2 to 10 with a score of 2 indicating a very positive perception.

** Means with different letters are significantly different as indicated by the Duncan's Multiple Range Test.

most positive perception. Ten was the highest score and it represented the most negative perception.

Age

The first independent variable studied was age. Based upon the data in Table 10, there is a statistically significant relationship between age and perceptions regarding the fairness of their promotion and evaluation processes. ($f=3.13$ $df= 2,236$ $p=.0266$). When interpreting the Duncan's Multiple Range follow-up test it was those specialists who were greater than 59 years of age had who had a more positive perception of their promotion and evaluation processes than did those who were 30-44 and 45-59 years of age. However, there was no difference between those respondents who reported their age as 18-29 and those who reported their age as 30-44, 45-59, or over 59. There were no differences between 30-44 and 45-59 years of age.

Office Location

The second independent variable studied in this analysis was office location. Respondents were housed in either university campuses, experiment stations, or district/regional offices. As reported in Table 10, there is no reason to conclude that there is a relationship between office location and perceptions regarding the fairness of their promotion and evaluation processes ($f=.05$ $df=2,235$ $p=.9528$).

Rank

The third independent variable studied in this analysis was academic rank. Respondents indicated their rank as assistant, associate, or full. As reported in Table 10, there is a statistically significant relationship between rank and perceptions regarding the fairness of their promotion and evaluation processes ($f=7.39$ $df= 2,221$ $p=.0008$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that specialists who were at the full rank had a significantly more positive perception toward their promotion and evaluation processes than did those holding the rank of associate. However, there was no difference between those respondents who reported their rank as assistant and those who reported their rank as associate or full rank.

Speed in the Completion of Doctoral Degree

The fourth independent variable studied in this analysis was speed in the completion of doctoral degree. Respondents were categorized into two groups: those who completed doctoral degrees in six years or less, and those who completed doctoral degrees in more than six years. As reported in Table 10, there is no reason to conclude that there is a relationship between speed in the completion of doctoral degree and perceptions regarding the fairness of their promotion and evaluation processes ($f=3.30$ $df=1,187$ $p=.0708$).

Speed in the Completion of Master's Degree

The fifth independent variable studied in this analysis was the speed in the completion of Master's Degree. Respondents were categorized into two groups: those who completed Masters' Degrees in two years or less and those who completed Masters' Degrees in more than two years. As reported in Table 10, there is no reason to conclude that there is a relationship between length of time to complete Master's Degree and perceptions regarding the fairness of their promotion and evaluation processes ($f=.02$ $df=1,213$ $p=.8921$).

Terminal Degree

The sixth independent variable studied in this analysis was the terminal degree. Respondents were categorized into three groups: those who held doctoral degrees, Masters' Degrees, or Bachelors' Degrees. As reported in Table 10, there is no reason to conclude that there is a significant relationship between terminal degree held and perceptions regarding the fairness of their promotion and evaluation processes ($f=.77$ $df= 2,228$ $p=.4629$).

Planned Percentage of Job Responsibility

The seventh independent variable studied in this analysis was planned percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three

categories. These categories were percentage of time planned in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time was planned. As reported in Table 10, there is no statistically significant relationship between the planned job responsibilities and perceptions regarding the fairness of their promotion and evaluation processes ($f=.27$ $df=2,226$ $p=.7599$).

Actual Percentage of Job Responsibility

The eighth independent variable studied in this analysis was actual percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time actually spent in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time. As reported in Table 10, there is no statistically significant relationship between the actual job responsibilities and perceptions regarding the fairness of their promotion and evaluation processes ($f=1.92$ $df=2,221$ $p=.1496$).

Major Audience

The ninth independent variable studied in this analysis was major audience. Respondents indicated their audience as adult or adult and youth. As reported in Table 10, there is

no statistically significant relationship between the major audience and perceptions regarding the fairness of their promotion and evaluation processes ($f=1.61$ $df=1,228$ $p=.2058$).

Table 11 describes the relationships among selected independent variables and respondents' perceptions of whether they had adequate time to conduct research. Attitudinal scores were computed based upon responses to 3 Likert-type questions with a score of 3 indicating a perception they had adequate time to conduct research and a score of 15 indicating a perception that they did not have adequate time for conducting research.

Age

The first independent variable studied was age. Based upon the data in Table 11, there is a statistically significant relationship between age and their perceptions of whether they had adequate time to conduct research ($f=3.12$ $df=2,233$ $p=.0268$). When interpreting the Duncan's Multiple Range follow-up test it was concluded that those specialists who were greater than 59 years of age perceived they had more time to conduct research than did those who were 30-44 years of age. However, there was no differences between those respondents who reported their age as 18-29 years old and those who reported their age as 30-44, 45-59, or over 59 as well as no differences between those respondents who reported

Table 11. The Relationships of Age, Office Location, Rank, Speed in Completion of Doctoral Degree, Speed in Completion of Master Degree, Terminal Degree, Percentage Planned Appointment, Percentage Actual Appointment, and Teaching Audience with Their Perceptions of Whether They had Adequate Time to Conduct Research.*

Characteristic Group	n	mean**	f	p
Age			3.12	.0268
18-29	3	8.67 AB		
30-44	111	8.92 B		
45-59	108	8.14 AB		
>59	15	6.67 A		
Office Location			1.20	.3037
University Campus	176	8.55		
Experiment Station	34	7.68		
District/Regional	25	8.44		
Rank			.53	.5912
Assistant	40	8.40		
Associate	69	8.74		
Full	112	8.27		
Speed in Completion of Doctoral Degree			1.01	.3163
Within 6 Years	68	8.71		
Over 6 Years	119	8.23		
Speed in completion of Master Degree			4.25	.0406
Within 2 Years	84	8.96		
Over 2 Years	128	8.08		

Table 11 (continued)

Characteristic Group	n	mean**	f	p
Terminal Degree			.10	.9086
Bachelors	3	8.00		
Masters	34	8.59		
Doctoral	191	8.38		
Percentage Planned Appointment			1.74	.1785
Extension	202	8.49		
Teaching	5	8.80		
Research	19	7.16		
Percentage Actual Appointment			2.46	.0880
Extension	192	8.60		
Teaching	8	8.13		
Research	22	7.14		
Teaching Audience			.39	.5329
Adult	135	8.36		
Adult and Youth	92	8.61		

* Perception scores could range from 3 to 15 with a score of 3 indicating respondents perceived they had adequate time to conduct research.

** Means with different letters are significantly different as indicated by the Duncan's Multiple Range Test.

their age as 45-59 years old and those who reported their age as 30-44, or over 59.

Office Location

The second independent variable studied in this analysis was office location. Respondents were housed in either university campuses, experiment stations, or district/regional offices. As reported in Table 11, there is no reason to conclude that there is a relationship between office location and perceptions of whether they had adequate time to conduct research ($f=1.20$ $df=2,232$ $p=.3037$).

Rank

The third independent variable studied in this analysis was academic rank. Respondents indicated their rank as assistant, associate, or full. As reported in Table 11, there is no statistically significant relationship between rank and perceptions of whether they had adequate time to conduct research ($f=.53$ $df= 2,218$ $p=.5912$).

Speed in the Completion of Doctoral Degree

The fourth independent variable studied in this analysis was speed in the completion of doctoral degree. Respondents were categorized into two groups: those who completed doctoral degrees in six years or less and those who completed doctoral degrees in more than six years. As reported in Table 11,

there is no reason to conclude that there is a relationship between speed in the completion of doctoral degree and perceptions of whether they had adequate time to conduct research ($f=1.01$ $df=1,185$ $p=.3163$).

Speed in the Completion of Master's Degree

The fifth independent variable studied in this analysis was the speed in the completion of Master's Degree. Respondents were categorized into two groups: those who completed Masters' Degrees in two years or less and those who completed Masters' Degrees in more than two years. As reported in Table 11, there is a statistically significant relationship between length of time to complete Masters' Degree and perceptions of whether they had adequate time to conduct research ($f=4.25$ $df=1,210$ $p=.0406$). Those specialists who completed their Masters' Degrees in more than two years perceived that they had more time to conduct research than did those specialists who completed their Masters' Degrees in two years or less.

Terminal Degree

The sixth independent variable studied in this analysis was the terminal degree. Respondents were categorized into three groups: those who held doctoral degrees, Masters' Degrees, or Bachelors' Degrees. As reported in Table 11, there is no reason to conclude that there is a significant

relationship between terminal degree held and perceptions of whether they had adequate time to conduct research ($f=.10$ $df=2,225$ $p=.9086$).

Planned Percentage of Job Responsibility

The seventh independent variable studied in this analysis was planned percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time planned in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time was planned. As reported in Table 11, there is no statistically significant relationship between the planned job responsibilities and perceptions of whether they had adequate time to conduct research ($f=1.74$ $df=2,223$ $p=.1785$).

Actual Percentage of Job Responsibility

The eighth independent variable studied in this analysis was actual percentage of job responsibility. Respondents indicated their job responsibility as a percentage in three categories. These categories were percentage of time actually spent in Extension, teaching, and/or research. The respondents were placed into the categories in which they indicated 50 percent or more of their time. As reported in Table 11, there is no statistically significant relationship

between the actual job responsibilities and perceptions of whether they had adequate time to conduct research ($f=2.46$ $df=2,219$ $p=.0880$).

Major Audience

The ninth independent variable studied in this analysis was major audience. Respondents indicated their audience as adult, or adult and youth. As reported in Table 11, there is no statistically significant relationship between the major audience and perceptions of whether they had adequate time to conduct research ($f=.39$ $df=1,225$ $p=.5329$).

Table 12 and 13 reports on intervally variables. Table 12 reports the relationship of number of faculty, teaching event scores, number of professional organizations, professional activity scores, journal reading scores, and number of journal subscriptions to the respondents attitude scores about conducting research. Davis's convention will be used to interpret the substance of the relationships (Davis,1971). As reported in Table 12, the relationship between selected independent variables and attitude score about conducting research are low to negligible. The strongest correlation was between number of professional organization memberships and attitude score about conducting research (.17). However, this variable only accounted for approximately three percent of the variance in attitude score of conducting research. Another significant relationship was

Table 12. The Relationship of Number of Faculty, Teaching Event Score, Number of Professional Organization Memberships, Professional Activity Score, Journal Reading Score, and Number of Journal Subscriptions to the Respondents Attitude Score about Conducting Research.

Characteristics	r	r ²
Number of Faculty	.0637	0.0041
Teaching Event Score	-.0237	0.0006
Number of Professional Organization Memberships	.1660	0.0276
Professional Activity Score	.0401	0.0016
Journal Reading Score	.1614	0.0260
Number of Journal Subscriptions	.1081	0.0117

Table 13. The Relationship of Number of Faculty, Teaching Event Score, Number of Professional Organization Memberships, Professional Activity Score, Journal Reading Score, and Number of Journal Subscriptions to Respondents Perceptions of the Emphasis Placed upon Published Refereed Journal Articles by Their Organization.

Characteristics	r	r ²
Number of Faculty	.1086	0.0118
Teaching Event Score	-.1290	0.0166
Number of Professional Organization Memberships	.1336	0.0178
Professional Activity Score	.1451	0.0211
Journal Reading Score	.0740	0.0055
Number of Journal Subscriptions	.0086	0.0001

between journal reading scores and attitude score about conducting research.

Table 13 reports the relationship of number of faculty, teaching event scores, number of professional organizations, professional activity scores, journal reading scores, and number of journal subscriptions to the respondents attitude scores the emphasis placed upon published refereed journal articles by their organization. Davis's convention will be used to interpret the substance of the relationships (Davis,1971). As reported in Table 13, the relationship to select variable and attitude score about the emphasis placed upon published refereed journal articles by their organization are low to negligible. The strongest correlation was between professional activity scores and attitude score about the emphasis placed upon published refereed journal articles by their organization (.15). However this only accounted for approximately two percent of the variance in attitude score about the emphasis placed upon published refereed journal articles by their organization. Other significant relationship were between teaching event scores and number of professional organization and attitude score about the emphasis placed upon published refereed journal articles by their organization.

Table 14 and 15 report on the final two attitudes relationships. Table 14 reports the relationship of number of faculty, teaching event scores, number of professional

Table 14. The Relationship of Number of Faculty, Teaching Event Score, Number of Professional Organization Memberships, Professional Activity Score, Journal Reading Score, and Number of Journal Subscriptions to the Respondents Perceptions Regarding the Fairness of Their Promotion and Evaluation Processes.

Characteristics	r	r ²
Number of Faculty	-.0057	0.0000
Teaching Event Score	-.0275	0.0008
Number of Professional Organization Memberships	.1151	0.0132
Professional Activity Score	-.0455	0.0021
Journal Reading Score	.0023	0.0000
Number of Journal Subscriptions	-.0240	0.0006

Table 15. The Relationship of Number of Faculty, Teaching Event Score, Number of Professional Organization Memberships, Professional Activity Score, Journal Reading Score, and Number of Journal Subscriptions to Respondents Perceptions of Whether They had Adequate Time to Conduct Research.

Characteristics	r	r ²
Number of Faculty	-.0054	0.0000
Teaching Event Score	-.0803	0.0064
Number of Professional Organization Memberships	.0187	0.0003
Professional Activity Score	-.0779	0.0061
Journal Reading Score	.0393	0.0015
Number of Journal Subscriptions	-.0108	0.0001

organizations, professional activity scores, journal reading scores, and number of journal subscriptions to the respondents perceptions regarding the fairness of their promotion and evaluation processes. Davis's convention will be used to interpret the substance of the relationships (Davis,1971). As reported in Table 14, the relationships between selected independent variables and perceptions regarding the fairness of their promotion and evaluation processes are low to negligible. The strongest correlation was between number of professional organizations and perceptions regarding the fairness of their promotion and evaluation processes (.12). However the number of professional organizations only accounted for approximately one percent of the variance in perceptions regarding the fairness of their promotion and evaluation processes. All other relationships were negligible.

Table 15 reports the relationships of number of faculty, teaching event scores, number of professional organizations, professional activity scores, journal reading scores, and number of journal subscriptions to the respondents perceptions of whether they had adequate time to conduct research. Davis's convention will be used to interpret the substance of the relationships (Davis,1971). As reported in Table 15, the relationships between selected variables and perceptions of whether they had adequate time to conduct research are negligible.

Objective Four

The fourth and final objective of the study was to examine the relationships between research productivity and Extension publication scores and self-reported job performance from the department and the specialists' own assessments of his/her performance.

The relationships of research productivity and Extension publications scores to self-report departmental and self evaluation scores are reported in Table 16. As reported in Table 16, relationships of research productivity and Extension publications scores to self-report departmental and self evaluation scores were low as interpreted by Davis's convention (Davis,1971). The strongest and most significant relationship was between Extension publications scores and self-reported departmental evaluation scores (.18). However Extension publication scores only accounted for approximately three percent of self-reported departmental evaluation scores. Other significant relationships were between research productivity and self-reported departmental evaluation scores (.17) and Extension publication scores and self-reported self evaluation scores (.15).

Table 16. The Relationships of Research Productivity Scores and Extension Publications Scores to Self-report Departmental and Self Evaluation Scores.

Published Articles Scores	Evaluation			
	Departmental Rating		Self Rating	
	r	r ²	r	r ²
Research	.1658	0.0275	.1033	0.0107
Extension	.1767	0.0312	.1496	0.0224

Chapter V

SUMMARY AND CONCLUSIONS

Summary

The purpose of the study was to investigate characteristics of agricultural Extension specialists in the southeast and how those characteristics effect their research productivity and Extension publications. Agricultural Extension specialists have a limited amount of literature about their research productivity and Extension publication productivity characteristics.

The final sample was composed of 344 agricultural Extension specialist in the southeast. These agricultural Extension specialists were randomly selected to participate from the approximately 1550 agriculture Extension specialists in the southeast. Of the 344 agricultural Extension specialists selected 281 responded and 241 of those respondents were used in the analysis of the study. Those responding returned a mailed questionnaire developed to measure demographic characteristics, research productivity, Extension publication productivity, attitudes toward research productivity, and job evaluation scores.

Demographic characteristics included age, office location, number of staff in department at that location,

academic rank, terminal educational degree, number of years to complete the masters degree and the doctoral degree, teaching events scores, professional organizations memberships and the involvement in those organizations scores, number of journals subscriptions and how journals were read scores, job responsibilities in Extension, teaching, and/or research as a percent in time planned and actually spent and major audiences.

Research productivity scores were measured by the number and kinds of literature published in the last three years. The types of literature were refereed journal articles, other journal articles, research report and books. These research articles were weighed differently based upon the respondents involvement as the type of author of these articles.

Extension publication scores were measured by the number and kinds of literature published in the last three years. The types of literature were peer reviewed Extension publications, no-peer reviewed Extension publications, newsletters, and newspaper articles. These Extension articles were weighed differently based upon the respondents involvement as the type of author of these articles.

Attitudes were measured using the Likert-scale. These scales indicated the opinions of the agricultural Extension specialists about conducting research, how their organization placed emphasis on refereed journal articles, how fair their organization was in promotion and evaluation, and whether

their organization gave them adequate time to do and write research.

Self-reported job performances were measured on a ten point scale with one being low and ten being high. The two self-reported evaluation were how their department perceived them and how they perceived themselves.

The specific objectives of this study were to study the:

- (1.) demographic characteristics of the agricultural Extension specialists in the southern region.
- (2.) relationships between demographic variables and research productivity as well as Extension publications.
- (3.) relationships between demographic variables and response to attitudes about research productivity.
- (4.) relationships between research productivity and Extension publication to self-reported departmental job performance and self-evaluation performance.

For the first objective, a series of nominally and intervally scaled variables were described by the use of counts, means, and percentages. The scales represented the demographic characteristics of the agricultural Extension specialists in the southeast. The average specialist was between the ages of 30 and 59, was located on the university campus, had an academic rank of full, had a terminal educational doctoral degree, and major audiences were adults. Their average department size was almost 17 staff members, they had memberships in 4.5 professional organizations, but

they held less than an average of one office of these organization on any level. However, they averaged serving on more than 1.5 committees on the state level. The average number of journal subscriptions was more than 3.5 and they read less than .5 journals from cover to cover per month, but when just reading articles of interest, they average more than 3 journals per month. The respondents averaged planning 82 percent of their time in Extension, however only actually spending 76 percent conducting Extension work. Agricultural Extension specialist participated in more county teaching events than at any other level with an average of 36, however, when organizing teaching events, they averaged conducting more on the state level with almost 9.

Objective two studied the independent demographic characteristics previously explained and their relationships to research productivity scores and Extension publication scores.

Agricultural Extension specialists had significantly higher research productivity scores when they were located on experiment stations, completed their doctoral degree within six years, had a terminal doctoral degree, and had report a majority of their time planned and actual were in research. Teaching event scores had the strongest correlation with research productivity (.25) which accounted for merely six percent of the variance in the research productivity scores. Other significant relationships with research productivity

scores were with professional organization involvement scores and journal reading scores.

Extension publication was not as affected by the demographic variables. Those agricultural Extension specialists who spent or planed a majority of their time in Extension had significantly higher Extension publication scores. The only other demographic variable which had a substantive relationship to Extension publication score as teaching event scores (.20).

The third objective of the study was to study the relationships between the demographic variables and the respondents attitudes toward research productivity. To accomplish this objective the same procedures were used as in objective two.

Assistant Extension specialists were more positive toward conducting research than were those at the full rank. However, those at the associate rank did not differ from either of those two groups. Further, those holding Masters' Degrees differed significantly from those holding doctorates with regard to their attitudes about conducting research, and those holding only the Bachelors' Degrees did not differ from either of the other two groups.

Associate specialists perceived that their organization placed more emphasis upon refereed journal articles than did full specialists. However, assistant specialists did not differ from either group. Although not surprising, those

specialists who planned and actually spent 50 percent or more of their time in Extension, perceived their organization placed less emphasis on refereed journal articles than did those specialists with the majority of their time in research.

Full specialists perceived their promotion and evaluation processes to be fairer than did associate specialists. However assistant specialists did not differ from either of these two groups regarding this perception.

Those specialists who were older than 59 perceived they had more time to conduct research than did those who were from 30 to 44 years old. However, no other age groups differed from one another regarding this variable. Further, those who completed their Masters' Degrees within two years perceived that they had significantly less time to conduct research than did those who took more than two years to complete their degrees (It should be noted however, that although this relationship was statistically significant, there was very little substantive difference between these two scores.).

The internally scaled independent variables explained virtually no substantive variance in any of the dependent variables studies in objective three.

The fourth objective of this study was to examine the relationships between research productivity scores and Extension publication scores and self-reported job performance from the department and the self-evaluations of the specialist.

This objective was accomplished by interpreting the correlation between these variables. Self-reported job performance from their department had a more substantive correlation with Extension publication scores (.18) than with research productivity scores (.17). Self-reported job performance scores for self-evaluation had a more substantive correlation with Extension publication scores (.15) than with research productivity scores (.10). However, these correlations were considered "low" when using Davis's Convention (1971).

Comparison With Other Studies

Several finding in this study were similar to the findings of other studies reviewed. Age was shown by Bean (1982) not to have an effect on research productivity and this study agreed with his findings. Office location did have effect on research productivity according to Bean (1982), Blackburn et al (1978), Crane (1965), Kelly & Warmbrod(1986), Allison & Stewart (1974), and Long(1978). Those studies indicated that the more resources a person had the more research productive they would be. In this study, agricultural Extension specialists located at experiment station (not university campus) tended to be more research productive. Blackburn et al.(1978) indicated that academic rank has an influence on research productivity however in this

study it was not significant. Allison and Stewart (1974) showed that educational level and years between degrees had differences. This was also found to be true in this study in regards to speed in completing their doctoral degree. Educational events and job responsibility had a correlation to research productivity according to Thomas (1989). Job responsibility in this study had a significant effect on research productivity. Agricultural Extension specialists who had a majority of their planned and actual time in research were more productive. As well as teaching event scores accounted for six percent of the variance in research productivity scores. Bean (1982) wrote that collaboration has an affect on research productivity. He described the affect in several different ways. Two of the ways were the number of staff members in the department, which had virtually no effect on research productivity in this study and membership to professional organizations and their involvement in them. Involvement in professional organization accounted for about four percent of the variances of research productivity in this study. Journal subscriptions were found by Wanner, Lewis, and Gregorio (1980) to aid in measuring the commitment to research. However the number of journals subscription had a negligible affect on research productivity in this study, but the journals reading scores accounted for about a four percent of the variances in research productivity.

Conclusions

The results of this study indicated that research productivity and Extension publications were affected differently by the demographic characteristics. Research productivity for agricultural Extension specialists were significantly affected by many of the same demographic characteristics that significantly affected collegiate faculty as shown in the literature. However, Extension publications were only significantly affected by job responsibility (both planned and actual) and teaching event scores. The job responsibility affects can easily be explained because those agricultural Extension specialists who spent a majority of their time in Extension produced more Extension publications. The teaching event score explained the most variance on both Extension publications and research productivity. The results of this study show that those agricultural Extension specialists who are actively teaching are also publishing more articles and publications.

Agricultural Extension specialists' attitudes were not significantly affected by many of the demographic characteristics. However, rank was significantly related to three of the four types of attitudes measured. Those at the assistant rank tended to enjoy conducting and writing research more than those at the associate and full ranks. Those at the associate rank tended to perceive that the organization placed

higher emphasis on refereed journal articles than did those at the ranks of assistant and full. Those who held the rank of full perceived that promotion and evaluation were conducted more fairly by the organization. This trend would to indicate that then specialists start out with the rank of assistant they are more eager to conduct research, then after going through a promotion they place more emphasis on published works, but then at the rank of full they have no more promotions to obtain so it is a fair process. However, rank was one of the few demographic variables which did not have a significant relationship with Extension publications and research productivity.

Agricultural Extension specialists over the age of 59 were more positive about the fairness of promotion and evaluation, and felt that they had adequate time to conduct and write research. This indicates that agricultural Extension specialists at this age tended to be more relaxed about evaluation and time. However the variable of age had no significant relationships with research productivity or Extension publication scores.

Self-reported job performances were affect by research productivity and Extension publication scores. Extension publication scores had more influence on job performance in both department scores and how they rated their own performance. However, research productivity correlation with departmental performances were very close to that of the

Extension publication scores (a differences of.011) and this correlation was more than Extension productivity had with self-evaluations. Departmental evaluation were influenced more by both independent variables than self-evaluation scores. This indicated that Extension departments placed higher emphasis on research productivity and Extension publications than agricultural Extension specialists may realized. However both indicated that Extension publication were more important to agricultural Extension specialists job evaluation than research productivity.

Implications

Agricultural Extension specialists need to realize that research productivity and Extension publication are more important in their job evaluations. However, university administrators need to remember that the production of literature plays a small part in their evaluations of agricultural Extension specialists. The production of publications and articles do not make a good agricultural Extension specialist and is only a small part of his/her total job.

Recommendations For Further Study

After completing this study the following recommendations

for future research are made.

(1.) This study needs to be periodically replicated to understand the demographic characteristics and how they affect Extension publications and research productivity.

(2.) Additional studies need to be conducted to find what other variables affect Extension publication production.

(3.) Additional studies need to be conducted to find what other barriers may be present to allowing agricultural Extension specialists writing Extension publications, conducting research, and teaching.

(4.) Additional studies need to be conducted to better define what variables affect job performance evaluations within the Cooperative Extension System.

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APPENDIX



Department of Agricultural
and Extension Education
P. O. Box 1071
Knoxville, TN 37901-1071
(615) 974-7371

July 6, 1993

Dear Agricultural Extension Specialist:

The Agricultural and Extension Education Department at the University of Tennessee is conducting a study of Extension specialists in an effort to learn more about the roles and responsibilities of agricultural specialists in the Southeast and to study potential relationships between these roles and responsibilities and self-reported job performance. Results of this study will hopefully provide a clearer descriptive profile of specialists and what our job responsibilities are in the Extension Service.

You are part of a random sample of agricultural Extension specialists selected from throughout the Southeastern United States to participate in our study. Since we are surveying only a representative sample, your responses are extremely important in our efforts to draw valid conclusions from the study. We will not be able to substitute someone else if you choose not to participate. If you are willing to help us you'll find the questionnaire quite easy to complete. It should be returned in the enclosed postage-paid envelope. We would greatly appreciate receiving your response by July 20, 1993.

You will see that your questionnaire is numbered. This number is to provide a way by which reminders can be sent, if necessary, without further imposing upon those who have completed and returned their questionnaires. Participation in our study is of course completely voluntary. Should you choose to not participate in it we would greatly appreciate the return of even the unanswered questionnaire. When your questionnaire is returned, we'll use the identification number to check your name off the mailing list. Your name will never be placed on the questionnaire and your responses will not be linked to your name in any way. All of the information you give us is completely confidential and will be summarized in aggregate form only.

We understand that your time is a very valuable commodity and we greatly appreciate your spending it to help us. If you have any questions or comments about our study, please call me at (615) 949-2611 or write them in the space provided at the end of the questionnaire.

Sincerely,

Randol G. Waters

Randol G. Waters,
Associate Professor

Louie R. Freeman

Louie R. Freeman
Extension Leader
Sequatchie County Tennessee



Southeastern Extension Specialist Study

- I. The following information will be used only for purposes of characterizing our respondents, and your personal responses will never be linked with your identity. Please put a check or number in front of the appropriate blank.

1. To which age group do you belong?

☐ 18 to 29 years of age
☐ 30 to 44 years of age
☐ 45 to 59 years of age
☐ 60 years of age or older

2. What percent of are your job responsibilities are in these areas?
(Must total to 100 percent)

☐ Percentage Extension
☐ Percentage Teaching
☐ Percentage Research

3. What percent of your work time is actually spent in these areas?
(Must total to 100 percent)

☐ Percentage Extension
☐ Percentage Teaching
☐ Percentage Research

4. Do you have job responsibilities in:

☐ Adult
☐ Youth (4-H)
☐ Both Adult and Youth

5. In what year(s) did you receive your degree(s)?

☐ High School
☐ Bachelors
☐ Master
☐ Doctorate

6. What rank do you hold?

☐ Assistant --- Professor, Specialist, or Agent
☐ Associate --- Professor, Specialist, or Agent
☐ Full -----Professor, Specialist, or Agent
☐ Other _____

7. How many professional organizations do you belong too? Please do not duplicate state and national organizations (ex. Tennessee Association of Agricultural Agents and Specialists and The National Association of Agricultural Agents would only be counted once)? _____
8. How many offices have you held in these organizations within the last three years?
- _____ Number of Local offices
_____ Number of State offices
_____ Number of Regional offices
_____ Number of National offices
9. How many committees have you served on in these organizations within the last three years? (Please do not duplicate the same committee for two or three years)
- _____ Number of Local committees
_____ Number of State committees
_____ Number of Regional committees
_____ Number of National committees
10. Where is your office located?
- _____ University Campus
_____ Experiment Station (Off-Campus)
_____ District or Regional Office (Off-Campus)
_____ County Office
_____ Other Specify: _____
11. How many faculty and/or professional staff are in your department or section at your office location?(ex. If you are located off campus count only the number of professionals in your department at your location. Do not count the number in your department at the university.) _____
12. Typically, how many journals do you read per month?
- _____ the number read --- from cover to cover
_____ the number read --- just articles of interest
_____ the number skimmed
13. How many journals do you subscribe to? _____

- II. How many published articles have you written or assisted with in the last 3 years? In the spaces provided below, list the number of articles.

Types of Articles	Sole Author	Co-author	Assisted with
Refereed Journals			
Other Journals			
Research Reports			
Books			
Extension Publications (Peer reviewed)			
Extension Publications (Non-peer reviewed)			
Newsletters			
Newspaper Articles			

- III. Within the last year, how many extension teaching events have you been involved with and in what capacity? In the spaces provided below list the number of teaching events in which you have participated by category. (no collegiate teaching)

Org = Organized the Event (Planning or Implement)
 Par = Participated in the Activity (an active teaching role)

Teaching Events	County		Area/District		State		Regional		National	
	Org	Par	Org	Par	Org	Par	Org	Par	Org	Par
Educational Meetings, Workshops, Field Days, etc.										
Verbal Mass Media, Audio and Video tapes, Personal Interviews, etc.										
Farm/Home Visits										

- IV. Below is a list of statements about your job. Please indicate your attitude concerning these statements by circling the appropriate letter located to the left of each statement.

SA - strongly agree, A - agree, U - undecided, D - disagree SD - strongly disagree

- | | | | | | |
|----|---|---|---|----|---|
| SA | A | U | D | SD | 1. I enjoy reviewing literature. |
| SA | A | U | D | SD | 2. I enjoy doing applied research. |
| SA | A | U | D | SD | 3. I enjoy writing applied research articles. |
| SA | A | U | D | SD | 4. I enjoy writing books. |
| SA | A | U | D | SD | 5. I enjoy writing Extension publications. |
| SA | A | U | D | SD | 6. I enjoy writing newsletters. |
| SA | A | U | D | SD | 7. I enjoy my job. |
| SA | A | U | D | SD | 8. My organization places high emphasis on published refereed articles. |
| SA | A | U | D | SD | 9. My organization has a fair process of promotion. |
| SA | A | U | D | SD | 10. My organization has a fair process of evaluation of faculty performance. |
| SA | A | U | D | SD | 11. My organization allows me adequate time to do literature reviews |
| SA | A | U | D | SD | 12. My organization allows me adequate time to do applied research. |
| SA | A | U | D | SD | 13. My organization allows me adequate time to do writing. |
| SA | A | U | D | SD | 14. Extension specialists are viewed as equal to other faculty members of the University. |

V. JOB PERFORMANCE

Please use the following ten point scale to answer the questions about job performance. Circle the appropriate response for each statement.

1. My most recent job performance as evaluated by my supervisor was:

Below Average				Average		Above Average			
1	2	3	4	5	6	7	8	9	10

2. My most recent job performance as I perceived it to be was:

Below Average				Average		Above Average			
1	2	3	4	5	6	7	8	9	10

Please return this questionnaire in the enclosed self-addressed stamped envelope by July 20, 1993.
THANK YOU FOR YOUR ASSISTANCE.

VITA

Louie R. Freeman was born on October 25, 1959 in Hartsville, Tennessee. He is the son of Mr. and Mrs. G. L. Freeman. He graduated from Trousdale County High School in 1978 and entered the University of Tennessee at Knoxville that fall quarter. In 1982 he received his Bachelor of Science degree from the College of Agriculture on June the 11th and on June the 14th started to work for the University of Tennessee as a assistant Extension agent in Loudon County. He transferred to Sequatchie County in 1985 as Extension Leader where he now resides. In January 1990, he began his graduate work at the University of Tennessee. He also attended Tennessee Tech University in Cookeville.

He is a member of Tennessee Association of Agricultural Agents and Specialists, which honored him with the "Communicator of the Year" award and the "Young Agent of the Year", Tennessee Agricultural Extension 4-H Workers, from which he received a "Professional Improvement Scholarship", and Epsilon Sigma Phi, which he received the "Early Career Award". He is the husband of Laura Delva Freeman.