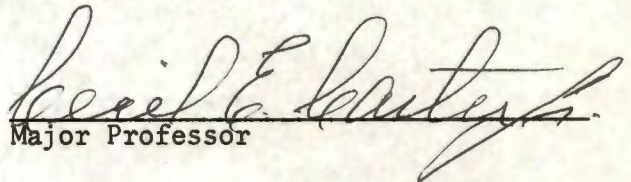


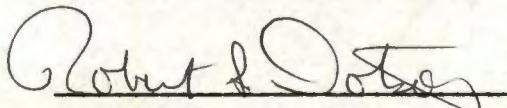
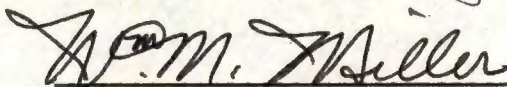
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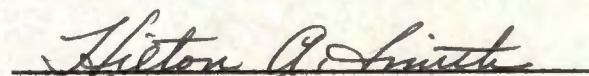
I am submitting herewith a thesis written by Sherwin Dean Northcutt entitled "Influence of Selected Personal Characteristics and County Situational Factors on Time Allocated to Dairy Subjects by Extension Agents in Selected Tennessee Counties." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Extension.


Major Professor

We have read this thesis and
recommend its acceptance:

Accepted for the Council:


Vice Chancellor for
Graduate Studies and Research

424

INFLUENCE OF SELECTED PERSONAL CHARACTERISTICS AND COUNTY
SITUATIONAL FACTORS ON TIME ALLOCATED TO DAIRY SUBJECTS
BY EXTENSION AGENTS IN SELECTED TENNESSEE COUNTIES

A Thesis
Presented to
the Graduate Council of
The University of Tennessee

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Sherwin Dean Northcutt
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ABSTRACT

The specific purpose of this study was to determine the relationships between various groups of independent variables (i.e. background and training of agents, county situational factors, knowledge, interest and attitude of agents and use of recommended dairy practices) and major dependent variables (i.e. time spent by agents on various groups of dairy subjects and contacts made by agents with dairy clientele). The hypothesis in null form, assumed that there were no relationships between these variables.

The study was limited to Tennessee Extension agents who were responsible for the Extension dairy educational program in the counties having at least 40 percent of the total farm income derived from dairying and/or which had an annual income of at least three-quarters-of-a-million dollars. A total of 39 Tennessee counties was used for the study and data from agents in these counties also were included in the study.

Data for this study were obtained from (1) Tennessee Extension Management Information System (TEMIS), (2) Extension education files, (3) Extension personnel files, (4) dairy Extension records, (5) supervisors, administrators and dairy subject matter specialists, (6) college transcripts, (7) county Extension workers, (8) 391 selected dairy farmers in 39 counties and (9) a series of knowledge, interest and attitude tests.

Stepwise Regression Analysis was used to determine the relationships

of all data collected. This analysis included: (1) the Coefficient of Correlation (r), (2) the Coefficient of multiple correlation (R), (3) the Coefficient of multiple determination (R^2) and (4) the percent change in R^2 . The Coefficient of Correlation (r) denoted a relationship between two variables while R and R^2 were used to denote correlations between one dependent and two or more independent variables simultaneously.

Findings indicated that the majority of the null hypotheses were rejected. Significant relationships were found between specific variables within nearly all groups of independent and dependent variables.

Very significant positive relationships existed between the agents' interest-attitude in dairying scale and time agents spent on "other" dairy subjects and on all dairy subjects. Also very significant positive relationships existed between the percent of county farm income from dairying and the time agents spent on dairy housing and management subjects. The strongest positive significant relationships of the study existed between the number of Grade A dairymen in the county and the time agents spent on "other" and all dairy subjects and between the total number of contacts agents made with dairymen. There was also a highly significant positive relationship between the agents' score on the receptiveness of clientele test and the total number of contacts agents made with dairy clientele.

From the multiple regression analysis it was found that the most accurate predictor of the amount of time agents will spend with dairymen is the actual number of Grade A dairymen in the county and that the most accurate predictor of the number of contacts agents will make with

dairymen also is the actual number of Grade A dairymen in the county. Agents' knowledge and attitude toward dairying also can be used to predict the time he will spend and the agents' perception of the dairy clientele. to the Extension program can also be used to predict the number of contacts he will make with dairymen.

Implications and recommendations also were made.



TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM AND ITS SETTING	1
Introduction, Problem, Objectives and the Hypothesis . . .	1
Scope of extension	2
The function of extension	4
Extension's future	4
Present county situation	5
Statement of the problem	7
Importance of the study	7
Objectives of the study	8
Limitations of the study	8
Definition of terms	9
Hypothesis	11
Review of Related Research	11
TEMIS study	12
Practice adoption study	13
Program effectiveness study	13
Combination of effectiveness, adoption and TEMIS	14
II. METHODS AND PROCEDURES	15
Population and Sample	15
Description of Dependent and Independent Variables	16

CHAPTER

PAGE

Sources of Data	19
Methods of Securing Data	20
Method of Analysis	22
Stepwise regression program	22
Testing the null hypothesis	22
Coefficient of correlation	23
Multiple correlation of coefficient	23
Multiple determinations	24
Percent change in R^2	24
Computations	24
III. ANALYSIS AND DISCUSSION OF DATA	25
Factors Influencing Time Spent by Agents on Selected	
Dairy Subject Matter Areas with Dairy Clientele	26
Influence of the training and background experience	
of agents on the time spent by agents on selected	
groups of dairy subjects	27
Influence of the agents' interest and attitude toward	
dairying and job satisfaction and job performance	
rating scores on time spent on selected dairy	
subjects	40
Influence of agents' general dairy and farm	
knowledge on time spent on selected dairy	
subjects	55

CHAPTER

PAGE

Influence of selected county situational factors on the average amount of time spent by agents on selected dairy subjects	69
Influence of the number of Grade A dairymen using selected individual recommended dairy practices on the amount of time spent by agents on selected dairy subjects	85
Factors Influencing Contacts Made by Agents in Selected Dairy Subject Matter Areas with Dairy Clientele	101
Influence of the training and background experience of agents on the total number of dairy contacts made by agents	101
Influence of agents' interest and attitude on the total number of dairy contacts made by agents . . .	104
Influence of agents' general dairy and farm knowledge on the total number of dairy contacts made by agents	106
Influence of selected county situational factors on the total number of dairy contacts made by agents	109
Influence of the number of Grade A dairymen using selected recommended dairy practices on the number of dairy contacts made by agents	112

CHAPTER	PAGE
IV. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	114
Introduction	114
Purposes	114
Methods Use	114
Population and sample	114
Dependent and independent variables	115
Sources of data	117
Methods of analysis	118
Summary of Findings	118
Conclusions	121
Recommendations	123
Recommendations for further study	123
BIBLIOGRAPHY	125
APPENDICES	128
Appendix A	129
Appendix B	131
Appendix C	134
Appendix D	136
VITA	154

LIST OF TABLES

TABLE		PAGE
I.	Influence of the Training and Background Experience of Agents on Time Spent on Dairy Breeding Subjects in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	28
II.	Influence of the Training and Background Experience of Agents on Time Spent on Dairy Feeding Subjects in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	31
III.	Influence of the Training and Background Experience of Agents on Time Spent on Dairy Housing and Management Subjects in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	33
IV.	Influence of the Training and Background Experience of Agents on Time Spent on Dairy Record Keeping Subjects in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	35
V.	Influence of the Training and Background Experience of Agents on Time Spent on "Other" Dairy Subjects in FY 1971 and FY 1972 in 39 Selected Tennessee Counties . . .	37
VI.	Influence of the Training and Background Experience of Agents on Time Spent on All Dairy Subjects in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	39

TABLE

PAGE

VII.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Breeding Subjects in 39 Selected Tennessee Counties	42
VIII.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Feeding Subjects in 39 Selected Tennessee Counties	44
IX.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Housing and Management Subjects in 39 Selected Tennessee Counties	46
X.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Record Keeping Subjects in 39 Selected Tennessee Counties	48
XI.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on "Other" Dairy Subjects in 39 Selected Tennessee Counties	51

TABLE

PAGE

XII.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on All Dairy Subjects in 39 Selected Tennessee Counties	53
XIII.	Influence of Agents' General Dairy and Farm Knowledge on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Breeding Subjects in 39 Selected Tennessee Counties	56
XIV.	Influence of Agents' General Dairy and Farm Knowledge on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Feeding Subjects in 39 Selected Tennessee Counties	59
XV.	Influence of Agents' General Dairy and Farm Knowledge on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Housing and Management Subjects in 39 Selected Tennessee Counties	61
XVI.	Influence of Agents' General Dairy and Farm Knowledge on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on Dairy Record Keeping Subjects in 39 Selected Tennessee Counties	63
XVII.	Influence of Agents' General Dairy and Farm Knowledge on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on "Other" Dairy Subjects in 39 Selected Tennessee Counties	65

TABLE

PAGE

XVIII.	Influence of Agents' General Dairy and Farm Knowledge on Time Spent in FY 1971 and FY 1972 with Dairy Farmers on All Dairy Subjects in 39 Selected Tennessee Counties	67
XIX.	Influence of Selected County Situational Factors on the Average Amount of Time Agents Worked in FY 1971 and FY 1972 with Dairy Farmers on Dairy Breeding Subjects in 39 Selected Tennessee Counties	71
XX.	Influence of Selected County Situational Factors on the Average Amount of Time Agents Worked in FY 1971 and FY 1972 with Dairy Farmers on Dairy Feeding Subjects in 39 Selected Tennessee Counties	73
XXI.	Influence of Selected County Situational Factors on the Average Amount of Time Agents Worked in FY 1971 and FY 1972 with Dairy Farmers on Dairy Housing and Management Subjects in 39 Selected Tennessee Counties	75
XXII.	Influence of Selected County Situational Factors on the Average Amount of Time Agents Worked in FY 1971 and FY 1972 with Dairy Farmers on Dairy Record Keeping Subjects in 39 Selected Tennessee Counties	78
XXIII.	Influence of Selected County Situational Factors on the Average Amount of Time Agents Worked in FY 1971 and FY 1972 with Dairy Farmers on "Other" Dairy Subjects in 39 Selected Tennessee Counties	80

TABLE

PAGE

XXIV.	Influence of Selected County Situational Factors on the Average Amount of Time Agents Worked in FY 1971 and FY 1972 with Dairy Farmers on All Dairy Subjects in 39 Selected Tennessee Counties	83
XXV.	Influence of the Number of Grade A Dairyemen Using Selected Recommended Dairy Practices on the Time Spent in FY 1971 and FY 1972 by Agents with Dairy Farmers on Dairy Breeding Subjects in 39 Selected Tennessee Counties	87
XXVI.	Influence of the Number of Grade A Dairyemen Using Selected Recommended Dairy Practices on the Time Spent in FY 1971 and FY 1972 by Agents with Dairy Farmers on Dairy Feeding Subjects in 39 Selected Tennessee Counties	89
XXVII.	Influence of the Number of Grade A Dairyemen Using Selected Recommended Dairy Practices on the Time Spent in FY 1971 and FY 1972 by Agents with Dairy Farmers on Dairy Housing and Management Subjects in 39 Selected Tennessee Counties	91
XXVIII.	Influence of the Number of Grade A Dairyemen Using Selected Recommended Dairy Practices on the Time Spent in FY 1971 and FY 1972 by Agents with Dairy Farmers on Dairy Record Keeping Subjects in 39 Selected Tennessee Counties	94

TABLE

PAGE

XXIX.	Influence of the Number of Grade A Dairymen Using Selected Recommended Dairy Practices on the Time Spent in FY 1971 and FY 1972 by Agents with Dairy Farmers on "Other" Dairy Subjects in 39 Selected Tennessee Counties	96
XXX.	Influence of the Number of Grade A Dairymen Using Selected Recommended Dairy Practices on the Time Spent in FY 1971 and FY 1972 by Agents with Dairy Farmers on All Dairy Subjects in 39 Selected Tennessee Counties	98
XXXI.	Influence of the Training and Background Experience of Agents on the Total Number of Dairy Contacts Made in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	103
XXXII.	Influence of Agents' Interest and Attitude Toward Dairying and Job Satisfaction and Job Performance Rating Score on the Total Number of Dairy Contacts Made in FY 1971 and FY 1972 in 39 Selected Tennessee Counties	105
XXXIII.	Influence of Agents' General Dairy and Farm Knowledge on the Total Number of Contacts Made in FY 1971 and FY 1972 with Dairy Farmers in 39 Selected Tennessee Counties	107

TABLE

PAGE

XXXIV.	Influence of Selected County Situational Factors on the Average Amount of Dairy Contacts Made in FY 1971 and FY 1972 with Dairy Farmers in 39 Selected Tennessee Counties	110
XXXV.	Influence of the Number of Grade A Dairymen Using Selected Recommended Dairy Practices on the Number of Contacts Made in FY 1971 and FY 1972 by Agents with Dairy Farmers Concerning the Use of Recommended Dairy Practices in 39 Selected Tennessee Counties	113
XXXVI.	Data on Background and Training Factors	137
XXXVII.	Data on County Situation Factors	139
XXXVIII.	Data on Interest and Attitude Factors	141
XXXIX.	Scores on Multiple-Choice Test	143
XL.	Data on Work Related Factors	145
XLI.	Effectiveness Rating Scores of Agents, on Conducting the Dairy Educational Program in Selected Tennessee Counties by District Supervisors, Associate Supervisors, and Dairy Specialists	150
XLII.	Minimum, Mean, Maximum and Range of the Factors Included in the Study	152

CHAPTER I

THE PROBLEM AND ITS SETTING

I. INTRODUCTION, PROBLEM, OBJECTIVES AND THE HYPOTHESIS

The Cooperative Extension Service was organized as a cooperative effort between the United States Department of Agriculture and the Land Grant Colleges. It is an educational arm of the United States Department of Agriculture whose fundamental objective is the development of the people of the United States.

The Cooperative Extension Service was established in 1914 by the Smith-Lever Act in order to (20:24)*:

Aid in diffusing among the people of the United States useful and practical information of subjects relating to agriculture and home economics, and to encourage the application of the same.

The diffusion of this information is carried on mainly by county Extension agents. Local people are presented this information by local agents in an informal, out-of-school manner. The essence of this out-of-school educational process is (14:12):

1. Working with rural people along those lines of their current interest and need which are closely related to gaining a livelihood, improving the physical level of living, and

* Numbers in parentheses refer to similarly numbered items in the Bibliography; those after the colons represent page numbers.

fostering community welfare;

2. Utilizing particular teaching techniques;
3. Conducted with the aid of certain supporting activities; and
4. Carried on within a distinctive spirit of cooperative and mutual respect.

People are presented with information so they are stimulated to choose alternative solutions to their own problems. This goes along with the basic philosophy of Extension education which is ... "to teach people 'how' to think, not 'what' to think"... (10:133).

Scope of Extension

Extension includes a wide variety of areas of program emphasis, including resource development, management, marketing, production, family development, youth development, leadership, community, and public affairs. These areas are discussed and divided into four major categories in A People and A Spirit: (1) Agriculture and Related industries (1:44), (2) Social and Economic development (1:53), (3) Quality of living (1:58), and (4) International Extension (1:67).

Sanders states that the Scope of the Cooperative Extension Service should be viewed from three standpoints namely: ... "the people to be served, the subject matter to be included in the work, and the methods to be used." (17:29) The success or failure of an Extension program depends upon the county agents' understanding and application of these three points.

The Extension Service as it is today has been influenced by many.

legislative acts over the years. The first of these acts was the Morrill Acts of 1862 and 1890 which brought about the establishment of the Land-Grant College and Universities. Next was the Hatch Act of 1887 which appropriated funds for agricultural research. Another research appropriation act was passed in 1960 called the Adams Act which specified that moneys be used specifically for original research and experiments.

The Smith-Lever Act of 1914 is the best known act among most Extension workers. It appropriated funds for Cooperative Extension work to be done in each state. Less known, but along the same lines, was the Purnell Act of 1925 which established funds for economic and social research. Additional money was granted for the specific purpose of paying agents at local county levels by the Capper-Ketcham Act of 1928.

Further congressional action gave the Extension Service more funds for general use in Extension through the Bankhead-Jones Act of 1935. Bankhead further sponsored another bill known as the Bankhead-Flannagan Act of 1945 which gave additional money for the use of Extension in the technical and educational assistance of farm people aimed at improving their standard of living.

Congress continued to act in favor of Extension by passing the Agricultural Marketing Act of 1946 which gave funds for marketing and research and development of marketing programs. Later acts such as the Economic Opportunities Act of 1964 gave Extension funds to hire low-income people in Extension work, and the Higher Education Act of 1965 gave financial support for general Extension work and Extension organizational work (20:21-23).

The Function of Extension

The primary function of the Extension Service is education, while the role of the Extension worker is that of a teacher. The county agent as a teacher is supposed to stimulate learning that is useful. The agent should present information that is necessary so the people can decide for themselves what is best.

Extension education is based on the current interest and needs of rural people. By knowing these current needs and interest an agent draws from a variety of teaching methods at his disposal and presents the needed information. The agent works with the people ... "in a situation in which encouraging people to recognize alternatives and make choices is the primary need..." (14:65). The primary function of the Extension agent then is to stimulate decisions by individuals.

Extension's Future

The Extension Service of today is not what it was fifty years ago, and is not what it will be in the future. Extension has ... "made a significant and lasting contribution to the growth and development of both Agriculture and rural people..." (17:504). Today the problems facing Extension are more complex. The people whom agents serve are more educated and technology is even more complex.

Extension in the future must adjust to these rapidly changing situations in education and technology. It also must expand and evaluate programs to meet the needs of this more complex situation. The Extension Service will have to continue to focus its major attention

on the problems of rural people and agriculture, while exploring ways and means of reaching new and more demanding urban audiences.

Present County Situation

The general scope, function and future of Extension as given previously is included in this study to give a fast sketch of the Extension Service. Extension covers a large variety of areas in agriculture, home economics and youth work. This study dealt with just a portion of the dairy section of the agricultural area of Extension.

In order to look toward the future we must first look at the past and present. For the 39 Tennessee counties here selected for study, a variety of information was available to help the researcher recognize and describe the situation related to dairy Extension work.

From the 1969 Agriculture Census and the 1970 Population Census data the following information listed below was obtained. The mean population in the counties studied was 56,567 ranging from a low of 6,331 to a high of 448,003. The average total farm income in these counties was 9.23 million dollars of which 21.1 percent or 1.95 million dollars came from dairying and dairy products. The lowest percent of total farm income from dairying in the counties studied was 5.5 percent and the highest percent of total farm income from dairying was 48.9 percent. From among the counties studied the lowest annual dairy income reported was 0.34 million dollars and the highest annual county dairy income was 6.58 million dollars.

Preliminary study of information from the Tennessee Extension Management Information System (TEMIS) showed that the average annual number of man-days spent on all dairying subjects increased between FY 1971 and FY 1972. In the selected Tennessee counties studied the average number of man-days increased from 23.51 in FY 1971 to 27.44 in FY 1972. The range of man-days spent on all dairy subjects in FY 1971 ranged from 4.96 per county to 65.88 per county, and in FY 1972 the range was from 6.38 to 89.56 per county.

Information from TEMIS also indicated an increase in the average number of contacts made with dairy clientele. The average number of contacts increased from 697 per county in FY 1971 to 766 per county in FY 1972. There also was an increase in the range of contacts per county from 26 to 3,375 in FY 1971 and from 80 to 4,288 in FY 1972.

From the above information it can be seen that there is a need and opportunity for Extension to work more closely with dairymen. Dairying in Tennessee is a multi-million dollar business, and it is very important for Extension to be fully aware of the needs of this special audience. From the preliminary analysis of TEMIS data, then, there was an indication that agricultural agents in selected Tennessee counties studied were spending more time with dairymen and making more contacts with dairymen. As pointed out with census data, dairying accounts for over 21 percent of the total farm income in the counties studied. With this amount of income involved, Extension needs to know how and why time is spent and contacts are made.

Statement of the Problem

This study dealt with two problems. One major area of concern dealt with the relationship of how Tennessee Extension personnel in selected Tennessee counties spent their time in selected dairy work areas compared with background and training of the agents, county situational data and information about work related factors. The other major area of the study dealt with the number of dairy contacts made compared with background and training of the agents, county situational data, and selected work related factors.

Importance of the Study

The present study is important to the Tennessee Agricultural Extension Service as a tool to evaluate progress in selected dairy subject matter areas. Its application to other Extension county work areas as an evaluative model is obvious. It is important to know, from the administrative level of Extension, how agents are spending their time. By knowing how time is being utilized, Extension decision makers can evaluate their programs and make proper adjustments to achieve a more effective program.

In 1969, the Tennessee Extension Service adopted a program for planning and reporting time known as the Tennessee Extension Management Information System (TEMIS). The purpose of TEMIS is to provide a computerized system of constant input and output of time spent in different subject matter areas, different purposes and with different audiences. Parts of this study were taken from a portion of this TEMIS information from fiscal years FY 1971 and FY 1972, in an effort to

determine if time spent in selected dairy subject matter areas and results obtained in these areas were related.

Objectives of the Study

The specific objectives of the study were:

1. To determine the relationship between selected training and background factors, selected county situational factors, and selected work related factors with time spent in FY 1971 and FY 1972 on selected groups of recommended dairy practices.
2. To determine the relationship between selected training and background factors, selected county situational factors, and selected work related factors with the actual number of contacts made with dairy clientele in FY 1971 and FY 1972.
3. To determine within each group of factors which factor(s) accounted for the most variation in time when correlated with the various selected training and background factors, selected county situational factors and selected work related factors.

Limitations of the Study

This study was limited to data from Tennessee County Extension Personnel assigned to dairy, dairymen and their situation in 39 counties. It was limited to collection and analysis of data from these 39 selected dairy counties due to time and expense of getting data from all 95

Tennessee counties and due to amounts of previously available data for the same counties.

The time period was limited to FY 1971-72. The reasons for this limited period of time were (1) one of the bases of the study was a dairy production survey taken in March 1970, and (2) the lack of time available to do a post test survey. Fiscal year data were selected due to limited TEMIS output available.

Definition of Terms

Cooperative Extension Service. That organizational entity of the Department of Agriculture and the Land-grant system created under provisions of the Smith-Lever Act and subsequent related legislation which conducts educational programs of an informal, non-resident, problem oriented nature (1:17).

County Extension Program. It is the sum total of all Extension work done in the county, including planning and plans, carrying out of 5-year (POWP) and annual (POW) plans, and evaluation and reporting of progress made toward objectives and goals. There is one county Extension program in each county consisting of everything done in all appropriate work areas and with all appropriate audiences (5:1).

Tennessee Extension Management Information System (TEMIS). A planning and reporting system designed to accumulate, store and process data on what Extension staff members plan to do and what they actually do.

TEMIS has been designed to provide a systematic flow of management information for use in program planning, evaluation, and reporting.

The system enables each staff member to relate his or her efforts to the total Extension effort at the county, district, state and national levels, and to reduce the man-hours necessary to accumulate and prepare data for analysis and reporting (8:1A).

Fiscal Year (FY). A period of time of one year in length that is represented by the time between July 1 of one year through June 30 of the succeeding year. The fiscal year gets its date from the year in which the June 30 appears (e.g. fiscal 1972 was named for 1972 and ran from July 1, 1971 to June 30, 1972 because June 30 fell in the year 1972).

Spent Time. The actual time spent by County Extension Agents in selected subject matter areas as reported and recorded through the Weekly Activity Report (TEMIS Report) and summarized by the University of Tennessee.

Contacts. Contacts made by County Extension Agents with local people through office visits, telephone calls, personal letters, personal contacts, group meetings, and circular letters when pertaining to specific or selected county, district, state, or national programs.

Recommended Practices. Selected practices that have been proven by research in Agriculture, home economics or related fields and are proven to be the best known methods of accomplishing a task.

Man-Days. Time reported spent by one individual in day equivalents (e.g. 8 hours = one man day).

Coefficient of Correlation (r). A pure number, varying from +1.00 through 0 to -1.00 that denotes the degree of relationship existing between two (or more) series of observation (6:105).

Coefficient of Multiple Correlation (R). A pure number lying between the limits of 0.00 and 1.00, indicating the degree of relationship between a criterion or dependent variable and the optimumly weighed sum of a number of independent variables, the independent variable being so weighed as to make the multiple correlation coefficient a maximum (6:106).

Hypothesis

The null hypothesis used in this study was that the total time spent by agents on related dairy subjects and the total number of contacts made with dairy clientele did not have a significant multiple correlation with each group of independent variables (test scores made by agents on various test on dairy and related subjects, agents' knowledge, interest and attitude, background and training of the agent, county situational factors and selected individual recommended dairy practices), and each of the independent variables (listed later) was not significantly related to time spent and contacts made by agents.

The 0.05 level of significance was established as the required level for rejecting the null hypothesis in this study.

II. REVIEW OF RELATED RESEARCH

Research has been conducted for years in different areas of agriculture and a vast amount of knowledge is known. Also, there is

a vast quantity of knowledge about the Cooperative Extension Service, its formation, organization programs and planning. Information pertaining to the combination of specific areas of agriculture and planning within the Extension Service is available only in the form of long-range and annual plans (POWP and POW) and program reports. These plans and reports do shed some light on educational program results. However, a search of possible literature in the form of research data revealed little information pertaining to the type of data and the type of investigation presented in this study.

TEMIS Study

Some information pertaining to TEMIS was available. McBroom had made a benchmark study of the TEMIS system for FY 1970 and FY 1971. His study did not deal in detail with specific subject matter areas, but instead dealt with summaries of Tennessee Extension work done in all subject areas given in the TEMIS handbook. The specific purpose of his study was to determine the numbers and percents of man-days worked and the numbers and percents of contacts made. After these determinations were made, he compared the time planned with time spent on different subject matter areas (13:5-6).

McBroom's study found that Extension personnel were spending more time than they planned to spend in most subject matter areas, including dairying. What influenced Extension personnel to spend more time than they had planned for on any subject area was not revealed by the McBroom study.

Practice Adoption Study

Information was available through a study by Anthony C. Griffin on the influencing factors that affected recommended dairy practice adoption. His study compared the use of the University of Tennessee's recommended dairy practices with herd size and milk production (7).

His study was confined to the relationships between practice use with production levels and herd size. He did not relate any possible connections of practice adoption and time spent by agents on adoption. There were not any connections to see if agents were involved in practice adoption or whether the adoption of the recommended practices was strictly done by the dairy farmers without the influence of the agents (7:46-55).

Program Effectiveness Study

Information pertaining to why Extension personnel are effective in their areas of responsibility is given in a dissertation by Rural A. Peace. His study was designed to determine the effectiveness of agents working with dairying and related subjects and to determine the relationships between effectiveness and agents' knowledge of dairying and related subjects (16:3-4).

Peace concluded that the knowledge of the agents was positively related to the effectiveness of the dairy program in the county. He also concluded that the effectiveness of the dairy programs was positively related to the amount of contacts the agents made through mass media, the visits in the county by dairy specialists, and time agents spent in their offices.

He concluded that the variables that are the most accurate predictors of effectiveness in a dairy program are the number of years in the present position (negatively correlated), the undergraduate grade point average, man-days devoted to dairywork by mass media, score on the multiple-choice test and the number of men Extension agents in the county (positively related) (16: 143-144).

Combination of Effectiveness, Adoption and TEMIS

McBroom, of course, did not study the reasons why agents spent time as they did, while Peace did not have time spent associated with the reasons why the programs were effective. Griffin did not associate practice adoption to time spent or efforts made by agents toward encouraging dairy practice adoption.

No information was found to be available on any areas of agriculture correlating effectiveness of a program with time agents spent on programs. The present study, then, will correlate time spent and contacts made by agents with dairy clientele and selected background, interest and knowledge factors of the agents.

CHAPTER II

METHODS AND PROCEDURES

The purpose of this chapter is to set forth the design of the study and the methods used in its conduct. A description is given of the different kinds of data, methods of collecting the data, description of variables, sources of data and method of analysis.

I. POPULATION AND SAMPLE

The first step in this study was to study previous works done in the areas of effectiveness rating, practice adoption and TEMIS. After this review, specific interest areas were selected and relevant information about these effectiveness ratings, data regarding practice adoption and TEMIS item areas were studied in detail in order to identify needed study areas.

Two populations were used for this study. The first population consisted of all Grade A dairymen in Tennessee counties which had at least 40 percent of their total agricultural income from dairying and/or had an annual income of at least three-quarters-of-a-million dollars. The Nth number technique was used to select a random sample of ten Grade A dairymen in each of the 42 counties qualifying. Of the total of 420 dairymen selected in the 42 counties only 39 counties with 391 dairymen were selected since not all the surveys taken in three counties

were accurate and complete enough for inclusion in the analysis.

Adequate data on milk production was not available on herds in the three counties deleted. Therefore, only 391 dairymen finally were included in the analysis (7:2).

A second population consisted of the county Extension personnel in these 39 Tennessee counties who were actually involved in dairy Extension work. The agents who were surveyed had as their primary responsibility the Extension dairy educational program in these counties that had a high income from dairying (16). Detailed information on how these agents spent their time in selected dairy subject matter areas was obtained from the University of Tennessee TEMIS section. Only TEMIS data for FY 1971 and FY 1972 were used in this study. Data used from TEMIS were given in man-days, number of contacts with different audiences, man-days per subject matter and contacts per man-day.

II. DESCRIPTION OF DEPENDENT AND INDEPENDENT VARIABLES

In this study, time expended in man-days on selected dairy topics and the total number of contacts made with dairy clientele were compared with selected background and training factors of agents, interest and attitude of agents, agents' knowledge of general dairy subjects, selected county situational factors and dairymen using selected recommended dairy practices.

These selected background and training factors of the agents which were used as separate independent variables that were compared to time spent on selected groups of dairy subjects and the total number of dairy contacts made were:

1. Number of hours of undergraduate credit in dairying
2. Undergraduate grade point average
3. Number of hours of graduate credit in dairying
4. Highest degree earned
5. Number of years in present position
6. Number of years in Extension.

The agents' interest and attitude factors, that were used as single independent variables, which were used for comparison with time spent on selected dairy subjects and total number of contacts made by agents were:

1. Interest and attitude dairy scale score
2. Effectiveness rating score
3. Importance of dairying score
4. Decision making test score
5. Score on interest in dairying
6. Dairy job satisfaction score
7. Receptiveness of clientele score
8. Total score on multiple choice test
9. Self-confidence score in dairying.

Agents' knowledge data that were compared to time spent on selected dairy subjects and total number of dairy contacts made were obtained from the following test (each test score was used as an independent variable):

1. Score on general dairying test
2. Score on building planning test
3. Score on abnormal milk test

4. Score on waste disposal test
5. Score on Extension program development test
6. Score on quality feed test
7. Score on farm planning test
8. Score on Milking management test
9. Score on record keeping test
10. Score on artificial breeding test
11. Score on nutrition test
12. Score on Extension communications test.

The following selected county situational factors were compared to time spent by agents on selected groups of dairy subjects and the total number of dairy contacts agents made with dairy clientele. Each of the factors that were utilized as separate independent variables are:

1. Number of Grade A dairymen in the county
2. Percent of the county farm income from dairying
3. Pounds of milk per Grade A dairyman, county average
4. Percent of Grade A dairymen using 21 recommended dairy practices
5. Number of men Extension agents in the county
6. Number of dairy farms in the county
7. Number of cows in Grade A herds, county average
8. Total county income from dairying.

The University of Tennessee's 21 recommended dairy practices were compared to the time agents spent and the number of contacts the agents made with dairy clientele. Each of the recommended dairy practices was used separately as an independent variable (See Appendix B).

The dependent variables used for this study, which were correlated to each independent variable previously listed, are:

1. Time agents spent on dairy breeding subjects
2. Time agents spent on dairy feeding subjects
3. Time agents spent on dairy housing and management subjects
4. Time agents spent on dairy record keeping subjects
5. Time agents spent on "other" dairy subjects
6. Time agents spent on "all" dairy subjects
7. Contacts agents made with all dairy clientele.

III. SOURCES OF DATA

Data for this study consisted of information obtained from (1) Tennessee Extension Management Information System (TEMIS), (2) Extension education files, (3) Extension personnel files, (4) dairy Extension records, (5) supervisors, administrators, and dairy subject matter specialists, (6) college transcripts, (7) county Extension workers, and (8) 391 selected dairy farmers across Tennessee in 39 counties.

The kinds of data needed for the study were those relating to dependent variables (time spent and contacts made) and the independent variables (background and training factors of agents, agents' interest and attitude, agents' knowledge, county situation factors and recommended dairy practices used).

IV. METHODS OF SECURING DATA

The time in man-days expended on dairy subjects and the number of contacts made by the county agents with dairy clientele were taken from TEMIS information from the appropriate county, task, subject and state purposes.

Data on the percent of farm income in the county received from dairying and the number of dairy farmers were taken from the Tennessee Extension dairy specialist's records. The number of years of experience and number of years in present positions were obtained from personnel files. Undergraduate and graduate credit in dairying subjects and undergraduate grade point averages were taken from college transcripts. (16:42).

Data concerning recommended practices and their uses were obtained from a Grade A milk production practice checklist that was developed by Extension dairy and education specialists at the University of Tennessee. This checklist was used to record the information pertaining to the 21 recommended dairy practices. Agricultural Extension agents in each of the 42 original selected counties interviewed Grade A dairymen and recorded the interview information on the practice checklist. The interviews were conducted in March of 1970 (7:3).

Selected interest and attitude factors (personal interest, self-confidence, perception of ease of working with clientele, personal satisfaction from job accomplishments and agents' perception of the importance of work areas in the county) were measured using rank order

comparison. This gives a measure of the importance of dairying compared with other work areas on each factor. The interest and attitude scale is included as Appendix C.

A multiple choice test containing 145 questions covering what was considered to be an adequate sample of important phases of dairying and related subjects necessary to cover the content and assess the objectives of the test was constructed and used by Peace (16:171-209) and data he assembled were used in the present study. The test was constructed in close cooperation with Extension dairy subject matter specialists and others associated with dairying and dairy teaching in the College of Agriculture. The adequacy of the test was judged by the content which partially came from a practice check list survey in dairying and partially from subject matter presented at an intensified week of inservice training in the spring of 1970.

The primary objective of the test was to measure the subject matter competency of county Extension agents. This included factual knowledge, understanding of dairy information, application of principles and interpretation of data. The agents needed the competency in order to collect, analyze and interpret the dairy situation in their respective county. These data were needed to develop and implement an effective dairy educational program with dairy clientele in the county.

The test was administered to 26 Tennessee county agricultural Extension agents not included in the study for purposes of pretesting the instrument. Each was asked to evaluate the test and add suggestions.

After final revisions were made the test was duplicated in sufficient numbers to use with each respondent in the study. An appropriate answer sheet was duplicated for ease of grading (16:51-55).

V. METHOD OF ANALYSIS

Stepwise Regression Program

The method of analysis for this study was the Stepwise Multiple Regression Analysis. This analysis is a variation of multiple regression which provides a means of choosing independent variables which will provide the best prediction of the dependent variable possible with the fewest possible independent variables. The Stepwise Regression Method of analysis constructs a prediction equation by adding one independent variable at each step. The first step chooses a single independent variable which is the best predictor of the dependent variable. The second independent variable added to the regression equation is the one which provides the best prediction of the dependent variable when taken in conjunction with the first variable. This same step-by-step process is followed until all variables are added or until no other variables make a significant contribution to the equation. The Stepwise Regression Program also gives Coefficients of Correlation, multiple correlation and multiple determinations (15:180-181).

Testing the Null Hypothesis

The null hypothesis used for this study was that each group of independent variables and each independent variable was not significantly

related (i.e. coefficient of correlation and multiple correlation) to the time agents spent with dairy clientele on various groups of dairy subjects (breeding, feeding, housing and management, record keeping, "other" and all dairy subjects) and also was not significantly related to the number of contacts agents made with dairy clientele in 39 selected Tennessee counties. The .05 level of significance was established as the required level for rejecting the null hypothesis.

Coefficient of Correlation

Correlation is basically a relationship between two or more variables. The Coefficient of Correlation (r) is a statistic which denotes a relationship between two variables through a single number. The value of the correlation has a range of +1.00 (a perfect positive correlation) through 0.00 (complete independence or no correlation) through -1.00 (a perfect negative correlation). The Coefficient of Correlation gives the size of the relationship and also the direction of this relationship. The direction of the relationship is either negative or positive and the size is the distance the relationship is from zero. If the variables are positively related, then as one variable increases the other increases. The reverse, which is an inverse relationship is true if they are negatively related. If negatively related, then as one variable increases the other variable decreases.

Multiple Correlation of Coefficient

The coefficient of multiple correlation (R) shows the strength of the relationship between one dependent variable and two or more independent

variables taken together. Multiple correlation is not just the total of the correlations of individual independent variables and their relationships with the dependent variable. Multiple correlation is interpreted as the size and importance of the relationship between the dependent variable and two or more independent variables.

Multiple Determinations

The multiple determination (R^2) is the variance (expressed in percent) in the dependent variable that is dependent upon, associated with, or predicted by independent variables. As the percentage variance of the independent variable(s) increases, the accuracy of predicting the occurrence of the dependent variable increases.

Percent Change in R^2

The percent change in R^2 is the variance that each independent variable accounts for in the multiple determination process.

Computations

All statistical data used in this study (Coefficients of Correlation, r , multiple correlations, R , multiple determinations, R^2 , and the percent change in R^2) were computed by the University of Tennessee Computer Service Department. The data in the tables in this study were rounded off to smaller usable numbers for ease of use.

CHAPTER III

ANALYSIS AND DISCUSSION OF DATA

The purpose of this chapter is to present and discuss the analysis of data. The results will be discussed under two main headings: Time spent on dairy subjects and number of contacts made with dairy clientele by agents.

The tables used for this study were developed to show the results of multiple correlation analysis. The Coefficient of Correlation (r), the coefficient of multiple correlation (R) and the coefficient of multiple determination (R^2) were shown for each independent variable correlated with a dependent variable. A footnote was used in each table to indicate the significance at given levels with the .05 level being the level above which a variable was not considered significant.

The Coefficient of Correlation (r) was used to show the strength of relationship between one independent variable and the dependent variable. The coefficient of multiple correlation (R) was used to indicate the strength of relationship between one variable and two or more others taken together. The coefficient of multiple determination (R^2) was used as an indication of the proportion of variance by a dependent variable that is dependent upon, associated with, or accounted for by the independent variables.

Stepwise regression was used as a means of choosing independent variables which will provide the best prediction of the dependent variable possible with the fewest independent variables.

The stepwise regression method constructs a prediction equation by adding one independent variable at each step. The first step is to choose a single independent variable which is the best predictor of the dependent variable. The second independent variable to be added to the regression equation is the one which provides the best prediction in conjunction with the first variable. The process continues until no other variables make a significant contribution to the equation (15:180-181).

The analysis of data is broken into two main areas. The first area deals with each group of independent variables (agents' background and training experience, agents' interest and attitude, agents' knowledge, selected county situation factors, and selected practices used) correlated with each dependent variable (time spent by agents on breeding, feeding, housing and management, record keeping, "other" and all dairy subjects). The second area of the study deals with the same independent variables correlated with the total number of contacts agents made with dairy clientele.

I. FACTORS INFLUENCING TIME SPENT BY AGENTS ON SELECTED DAIRY SUBJECT MATTER AREAS WITH DAIRY CLIENTELE

The first part of this study concerns the time spent by agents

on selected groups of dairy subjects. The time spent by the agents was reported on weekly activity reports and was compounded for this study by the TEMIS section of the University of Tennessee Agriculture Extension Service. Factors affecting time spent are correlated with different dairy subjects to try to determine which factors predicted the amount of time spent on dairy subjects by agents. Each group of factors was analyzed separately and discussed separately. It was assumed from the start of the study that time spent on selected groups of dairy subjects was not related significantly to any of the independent variables.

Influence of the Training and Background Experience of Agents on the Time Spent by Agents on Selected Groups of Dairy Subjects

The first group of factors to be correlated with time spent by agents on selected groups of dairy subjects are the agents background and training factors. These background and training factors are correlated with time spent on breeding, feeding, housing and management, record keeping, "other" dairy subjects and all dairy subjects combined. Each group of subjects will be discussed separately with the background and training factors and then the total group will be briefly summarized.

Influence of the training and background experience of agents on time spent on dairy breeding subjects. Table I shows the Coefficients of correlation (r), multiple correlation (R) and multiple determinations (R^2) between six background and training characteristics of the agents in 39 counties and the amount of time they devoted to dairy breeding

TABLE I
INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
OF AGENTS ON TIME SPENT ON DAIRY BREEDING
SUBJECTS IN FY 1971 AND FY 1972 IN
39 SELECTED TENNESSEE COUNTIES

Background and Training of Agents	Time Spent on Dairy Breeding Subjects			% Change in R ²
	r	R	R ²	
No. hrs. grad. credit dairy	0.36 ^c	0.36 ^c	0.132	13.2
No. hrs. ungrad. credit dairy	-0.30 ^c	0.47 ^b	0.220	8.8
Undergraduate grade point average	-0.03	0.48 ^c	0.235	1.5
No. years in Extension	-0.13	0.49 ^c	0.239	0.4
No. years in present position	-0.02	0.50 ^c	0.254	1.5
Highest degree earned	0.10	0.51 ^c	0.260	0.6

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

subjects during FY 1971-72. Of the six background and training variables studied only two, when taken independently, were significantly related to time spent by agents on dairy breeding subjects. A significant (.05 level) relationship existed between the number of hours of graduate credits agents completed ($r = .36$) and the time they spent on dairy breeding subjects. The number of hours undergraduate credits completed by the agents showed a significant (.05 level) negative correlation ($r = -.30$) with the time agents spent on this dairy subject. Other background and training variables (agents' undergraduate grade point average, number of years in Extension and number of years in present position) tended also to have a negative correlation coefficient. The highest degree earned variable had a positive correlation coefficient. These latter coefficients were very low and did not achieve the .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The six background and training variables accounted for a total of 26 percent of the variation in time spent on dairy breeding subjects. Two of these independent variables accounted for 22 percent of this variation. One of these variables (number of hours of undergraduate credits in dairying) accounted for almost 9 percent of the variation in time agents spent on dairy breeding subjects.

Briefly this data indicated that the fewer undergraduate hours in dairying agents had the more time they spent on breeding subjects. The reverse of this was true for graduate hours in dairying (the more

graduate hours in dairying agents had, the more time they spent on breeding subjects). Furthermore, the data in Table I indicate that the number of graduate hours in dairying is the best predictor of the time agents will spend on dairy breeding subjects.

Influence of the training and background experience of agents on time spent by agents on dairy feeding subjects. Table II shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between six background and training characteristics of agents in 39 counties and the amount of time devoted to dairy feeding subjects in FY 1971-72. Only one of these six background and training variables was significantly related when correlated independently to the time spent by agents on dairy feeding subjects. A significant (.05 level) negative relationship existed between the number of hours undergraduate credit completed ($r = -.31$) and the time agents spent on dairy feeding subjects. Three other background and training variables (undergraduate grade point average, number of hours graduate credit in dairying and highest degree earned) also had a negative correlation coefficient. Two variables (number of years in present position and number of years in Extension) had a positive correlation coefficient. These latter coefficients were very low and did not achieve the .05 level of significance.

The multiple correlation coefficient was significant at only the first step in the multiple regression analysis. These six background and training variables accounted for a total of nearly 16 percent of the variation in time spent by agents on dairy feeding subjects. The one significant independent variable (number of hours undergraduate

TABLE II
 INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
 OF AGENTS ON TIME SPENT ON DAIRY FEEDING
 SUBJECTS IN FY 1971 AND FY 1972 IN
 39 SELECTED TENNESSEE COUNTIES

Background and Training of Agents	Time Spent on Dairy Feeding Subjects			% Change in R ²
	r	R	R ²	
No. hrs. ungrad. credit dairy	-0.31 ^c	0.31 ^c	0.095	9.5
Undergraduate grade point average	-0.18	0.36	0.126	3.1
No. years in present position	0.13	0.38	0.142	1.6
No. years in Extension	0.02	0.39	0.152	1.0
No. hrs. grad. credit dairy	-0.02	0.39	0.154	0.2
Highest degree earned	-0.10	0.40	0.158	0.4

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

credit in dairying) accounted for 9.5 percent of this variation.

Data in Table II indicate that the fewer undergraduate hours credit in dairying an agent had the more time he spent on dairy feeding subjects. This data further indicate that the number of undergraduate hours credit in dairying is the best predictor of the time agents will spend on dairy feeding subjects.

Influence of the training and background experience of agents on time spent by agents on dairy housing and management subjects. The Coefficient of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between six background and training characteristics of agents in 39 selected Tennessee counties and the amount of time they devoted to dairy housing and management subjects during FY 1971-72 is shown in Table III. None of the six background and training variables were significantly related to time spent by agents on housing and management subjects when correlated independently. All of the background and training variables (highest degree earned, number of years in Extension, number of hours undergraduate credit in dairying, number of hours graduate credit in dairying, undergraduate grade point average and number of years in present position) had a negative correlation coefficient, but the coefficients were very low and did not achieve the accepted .05 level of significance.

The multiple correlation coefficient in Table III was insignificant. The six background and training factors accounted for 8.5 percent of the variation in time spent by agents. None of the data in Table III can be used to predict the time agents will spend on housing and management subjects.

TABLE III

INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
OF AGENTS ON TIME SPENT ON DAIRY HOUSING
AND MANAGEMENT SUBJECTS IN FY 1971
AND FY 1972 IN 39 SELECTED
TENNESSEE COUNTIES

Background and Training of Agents	Time Spent on Dairy Housing and Management Subjects			
	r	R	R ²	% Change in R ²
Highest degree earned	-0.20	0.20	0.041	4.1
No. years in Extension	-0.04	0.24	0.059	1.8
No. hrs. ungrad. credit dairy	-0.14	0.28	0.078	1.9
No. hrs. grad. credit dairy	-0.02	0.29	0.082	0.4
Undergraduate grade point average	-0.05	0.29	0.084	0.2
No. years in present position	-0.06	0.29	0.085	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

Based on the data in Table III none of the background and training variables can be used to predict the time agents will spend on housing and management subjects.

Influence of the training and background experience of agents on time spent by agents on dairy record keeping subjects. Table IV shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between four background and training characteristics of the agents in 39 counties and the amount of time they spent during FY 1971-72 on dairy record keeping subjects. From among the four variables taken independently, two variables were negatively significant at the .10 level. The number of hours graduate credit earned in dairying showed a slight negative correlation ($r = -.27$) and the undergraduate grade point average also showed a slight negative correlation ($r = -.26$) with time spent by agents on this dairy subject. One other background and training variable (highest degree earned) showed a negative correlation coefficient and the fourth variable (number of hours undergraduate credit in dairying) indicated a positive correlation coefficient. All of these variables showed a low coefficient correlation and did not achieve the .05 level of significance.

The multiple correlation coefficient was not significant at the .05 level at any step in the multiple regression analysis. The four entering variables in the multiple regression accounted for nearly 13 percent of the variation in time spent on dairy record keeping subjects. The number of hours of graduate credit earned by agents in dairying accounted for 7.5 percent of this variation.

Based on the information presented in Table IV there are no reliable

TABLE IV
INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
OF AGENTS ON TIME SPENT ON DAIRY RECORD KEEPING
SUBJECTS IN FY 1971 AND FY 1972 IN
39 SELECTED TENNESSEE COUNTIES

Background and Training of Agents	Time Spent on Dairy Record Keeping Subjects			% Change in R ²
	r	R	R ²	
No. hrs. grad. credit dairy	-0.27 ^d	0.27 ^d	0.075	7.5
Undergraduate grade point average	-0.26 ^d	0.34	0.112	3.7
Highest degree earned	-0.24	0.35	0.123	1.1
No. hrs. ungrad. credit dairy	0.06	0.36	0.127	0.4

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

training and background characteristics that can be used to predict the amount of time agents will spend on dairy record keeping subjects.

Influence of the training and background experience of agents on time spent by agents on "other" dairy subjects. Data in Table V reveal that none of the training and background Coefficients of Correlation (r) are significantly related at the .05 level when taken independently to time spent on "other" dairy subjects. Also shown in Table V is the multiple correlation (R) and the multiple determinations (R^2) between five background and training characteristics of agents in 39 Tennessee counties and the amount of time devoted to "other" dairy subjects in FY 1971-72. These five characteristics (number of hours undergraduate credit in dairying, number of years in present position, highest degree earned, undergraduate grade point average and number of hours graduate credit in dairying) tended to have a negative correlation coefficient. These Correlations of Coefficients were low and were not significantly related at the acceptable .05 level to time spent on "other" dairy subjects.

The number of hours undergraduate credit earned in dairying (percent change in $R^2 = 5.1$) and the number of years in the present position (percent change in $R^2 = 5.0$) were the two training and background characteristics accounting for most of the 10.6 percent variation in time spent by agents on "other" dairy subjects. The multiple correlation coefficient was not significant at the .05 level at any step in the multiple regression analysis.

Very briefly these data indicate that none of the training and background characteristics can be used as reliable predictors of how much time agents will spend on "other" dairy subjects.

TABLE V
INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
OF AGENTS ON TIME SPENT ON "OTHER" DAIRY
SUBJECTS IN FY 1971 AND FY 1972 IN
39 SELECTED TENNESSEE COUNTIES

Background and Training of Agents	Time Spent on "Other" Dairy Subjects			
	r	R	R ²	% Change in R ²
No. hrs. ungrad. credit dairy	-0.23	0.23	0.051	5.1
No. years in present position	-0.18	0.32	0.101	5.0
Highest degree earned	-0.01	0.32	0.103	0.2
Undergraduate grade point average	-0.03	0.32	0.105	0.2
No. hrs. grad. credit dairy	-0.01	0.33	0.106	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

Influence of the training and background experience of agents on time spent by agents on all dairy subjects. Data in Table VI show the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between six background and training characteristics of agents in 39 selected Tennessee counties and the amount of time they devoted to all dairy subjects during FY 1971-72. None of the six background and training variables, when taken independently were significantly related to time spent by agents on all dairy subjects. The number of hours undergraduate credit earned in dairying showed a slight (.10 level) negative correlation ($r = -.29$) with time spent by agents on all dairy subjects. The other background and training characteristics (undergraduate grade point average, number of years in present position, highest degree earned, number of years in Extension and number of hours graduate credit in dairying) also showed a negative correlation coefficient. All of the coefficients were low and did not achieve the .05 level of significance.

The multiple correlation coefficient was not significant at the .05 level in any step in the multiple regression analysis. The six background and training factors accounted for a total of 11.8 percent of the variation in time spent by agents on all dairy subjects. The number of hours of undergraduate credits earned in dairying accounted for 8.4 percent of this variation in time spent by agents on all dairy subjects.

Based on this data there is a slight trend indicating that the fewer undergraduate hours in dairying agents had the more time they spent on

TABLE VI
INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
OF AGENTS ON TIME SPENT ON ALL DAIRY SUBJECTS
IN FY 1971 AND FY 1972 IN 39 SELECTED
TENNESSEE COUNTIES

Background and Training of Agents	Time Spent on All Dairy Subjects			% Change in R^2
	r	R	R^2	
No. hrs. ungrad. credit dairy	-0.29 ^d	0.29 ^d	0.084	8.4
Undergraduate grade point average	-0.13	0.32	0.100	1.6
No. years in present position	-0.07	0.33	0.110	1.0
Highest degree earned	-0.09	0.34	0.116	0.6
No. years in Extension	-0.08	0.34	0.117	0.1
No. hrs. grad. credit dairy	-0.01	0.34	0.118	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

all dairy subjects. This variable can not be used to predict the amount of time agents will spend on all dairy subjects since the acceptable .05 level of significance was not reached.

The null hypothesis states that time spent by agents on dairy related subjects was not significantly related (i.e. multiple correlation) to the background and training characteristics of agents. It also states that each independent variable was not significantly related to time spent by agents on selected groups of dairy subjects.

Data presented in Table III thru VI indicate that none of the training and background characteristics were significantly related (multiple correlation) to time spent on any group of dairy subjects. This is not sufficient evidence to reject the first part of the null hypothesis. The number of hours undergraduate training is significantly related to time spent by agents on breeding (Table I) and feeding (Table II) in a negative manner. The number of hours graduate credit in dairying is positively related to time spent by agents on breeding subjects (Table I). These three significant relationships are sufficient evidence to reject the part of the null hypothesis that states that each independent variable was not significantly related to time spent by agents on selected groups of dairy subjects.

Influence of the Agents' Interest and Attitude Toward Dairying and
Job Satisfaction and Job Performance Rating Scores on Time Spent on
Selected Dairy Subjects

This part of the study deals with the interest and attitude factors of agents which were determined by a series of attitude test from which

ranking scores were obtained. These scores were used to determine the comparative interest and attitudes of the agents. The time spent on each group of subjects (breeding, feeding, housing and management, record keeping, "other" and all dairy subjects) will be correlated to the interest and attitude factors and the results of each correlation that is significant will be discussed.

Influence of agents' interest and attitude toward dairying and job satisfaction and job performance rating scores on time spent on breeding subjects. Table VII shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between nine interest and attitude test scores of the agents in 39 counties and the amount of time they devoted to dairy breeding subjects in FY 1971-72. None of the nine test score variables, when taken independently, were significantly related to time spent by agents on dairy breeding subjects. Two variables (decision making test score and effectiveness rating score) tended to have a negative correlation coefficient, while the other seven variables (importance of dairying score, score on interest in dairying test, multiple choice test score, self-confidence score, interest-attitude scale, dairy job satisfaction score and receptiveness of clientele score) tended to have a positive correlation coefficient. All of the coefficients were below the acceptable .05 level of significance.

The multiple correlation coefficient was not significant at any step in the multiple regression analysis. The nine interest and attitude

TABLE VII

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON DAIRY BREEDING SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Agents' Interest and Attitude	Time Spent on Dairy Breeding Subjects			
	r	R	R ²	% Change in R ²
Importance of dairying score	0.23	0.23	0.053	5.3
Score on interest in dairy	0.01	0.30	0.091	3.8
Score on multiple choice test	0.20	0.38	0.144	5.3
Decision making test score	-0.11	0.43	0.188	4.4
Self-confidence score in dairy	0.06	0.48	0.233	4.5
Effectiveness rating score	-0.06	0.51	0.256	2.3
Interest-attitude dairy scale	0.13	0.51	0.261	0.5
Dairy job satisfaction score	0.13	0.53	0.276	1.5
Receptiveness of clientele score	0.07	0.54	0.287	1.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

variables accounted for nearly 29 percent of the variation in time spent by agents on housing and management subjects.

Based on the data in Table VII none of the interest and attitude variables showed any significant relationships with time spent on dairy breeding subjects and therefore can not be used to predict the amount of time agents will spend on this subject.

Influence of agents' interest and attitude toward dairying and job satisfaction and job performance rating scores on time spent on feeding subjects. The Coefficient of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between six interest and attitude test scores of the agents in 39 selected Tennessee counties and the amount of time they spent on dairy feeding subjects in FY 1971-72 is shown in Table VIII. The dairy job satisfaction score showed a slight (.10 level) positive correlation ($r = .26$) with time spent on dairy feeding subjects. The decision making test score variable showed a tendency to be negatively correlated. The remaining variables (importance of dairying score, interest-attitude dairy scale, self-confidence score and receptiveness of clientele score) all tended to show a positive correlation coefficient. All of the coefficients were low and did not achieve the .05 level of significance.

The multiple correlation coefficient was not significant at the .05 level at any step in the multiple regression analysis. The six entering variables in the multiple regression accounted for nearly 11 percent of the variation in time spent by agents of dairy feeding

TABLE VIII

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON DAIRY FEEDING SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Agents' Interest and Attitude	Time Spent on Dairy Feeding Subjects			% Change in R ²
	r	R	R ²	
Dairy job satisfaction score	0.26 ^d	0.26 ^d	0.066	6.6
Importance of dairying score	0.23	0.28	0.076	1.0
Decision making test score	-0.05	0.29	0.086	1.0
Interest-attitude dairy scale	0.22	0.31	0.097	1.1
Self-confidence score in dairy	0.16	0.32	0.104	0.7
Receptiveness of clientele score	0.19	0.33	0.107	0.3

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

subjects. The dairy job satisfaction score accounted for 6.6 percent of this variation.

Very briefly this data indicate that none of the interest and attitude variables presented in Table VIII can be used as reliable predictors of time agents will spend on dairy feeding subjects.

Influence of agents' interest and attitude toward dairying and job satisfaction and job performance rating scores on time spent on housing and management subjects. Data presented in Table IX show the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between nine interest and attitude test scores of the agents in 39 Tennessee counties and the amount of time they devoted to dairy housing and management subjects in FY 1971-72. Of the nine interest and attitude variables studied four were significantly related to time spent by agents on housing and management subjects when taken independently. A significant (.05 level) relationship existed between the importance of dairying score ($r = .37$), the self-confidence score in dairying ($r = .32$), the interest-attitude dairy scale ($r = .32$) and the score on interest in dairy ($r = .33$) and the time they spent on this dairy subject. The receptiveness of clientele score showed a slight (.10 level) relationship ($r = .26$) with time spent on dairy housing and management subjects. One variable, the score on the multiple choice test, which tended to have a negative correlation coefficient, while the three other remaining variables (effectiveness rating score, dairy job satisfaction score and decision

TABLE IX

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON DAIRY HOUSING AND MANAGEMENT
SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Agents' Interest and Attitude	Time Spent on Dairy Housing and Management Subjects			
	r	R	R ²	% Change in R ²
Importance of dairying score	0.37 ^c	0.37 ^c	0.140	14.0
Self-confidence score in dairy	0.32 ^c	0.41 ^c	0.165	2.5
Interest-attitude dairy scale	0.32 ^c	0.43	0.183	1.8
Score on multiple choice test	-0.09	0.44	0.193	1.0
Effectiveness rating score	0.04	0.45	0.206	1.3
Score on interest in dairy	0.33 ^c	0.47	0.217	1.1
Dairy job satisfaction score	0.21	0.48	0.235	1.8
Decision making test score	0.04	0.49	0.241	0.6
Receptiveness of clientele score	0.26 ^d	0.49	0.245	0.4

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

making test score) all had very low coefficients and did not achieve the .05 level of significance.

Of the nine interest and attitude variables only two of the variables (importance of dairying score and self-confidence score) were significantly related (.05 level) in the multiple regression analysis. The nine interest and attitude variables accounted for nearly 25 percent of the variation in time spent on dairy housing and management subjects. The importance of dairying score accounted for 14 percent of the variation and the self-confidence score in dairying accounted for 2.5 percent of the variation in time spent on these dairy subjects.

The data in Table IX indicate that as the agents' scores on the importance of dairying test, self-confidence test, interest-attitude scale and interest in dairying test increase the time agents spent on dairy housing and management subjects increase. The best predictors of the amount of time agents will spend on dairy housing and management subjects and the combined scores from the importance of dairying test and the self-confidence in dairying test.

Influence of agents' interest and attitude toward dairying and job satisfaction and job performance rating scores on time spent on record keeping subjects. Table X shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight interest and attitude test scores of agents in 39 counties and the amount of time they devoted to dairy record keeping subjects in FY 1971-72. Two of the eight interest and attitude variables were slightly significant at .10 level. The decision making test score

TABLE X

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON DAIRY RECORD KEEPING SUBJECTS
IN 39 SELECTED TENNESSEE COUNTIES

Agents' Interest and Attitude	Time Spent on Dairy Record Keeping Subjects			
	r	R	R ²	% Change in R ²
Decision making test score	-0.26 ^d	0.26 ^d	0.069	6.9
Receptiveness of clientele score	0.25 ^d	0.37	0.135	6.6
Score on multiple choice test	0.16	0.39	0.156	2.1
Interest-attitude dairy scale	0.21	0.40	0.159	0.3
Importance of dairying score	0.14	0.40	0.162	0.3
Score on interest in dairy	0.22	0.41	0.166	0.4
Dairy job satisfaction score	0.15	0.42	0.175	0.9
Effectiveness rating score	0.14	0.43	0.181	0.6

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

showed a slight negative correlation ($r = -.26$) and the receptiveness of clientele score showed a slight positive correlation ($r = .25$). The other six variables (score on the multiple choice test, interest-attitude scale, importance of dairying test, interest in dairying test, dairy job satisfaction test and effectiveness rating test) showed a trend toward a positive correlation. All of the variables showed a low coefficient correlation and failed to achieve the .05 level of significance.

None of the interest and attitude variables were significantly related at the .05 level in the multiple regression analysis. The eight variables accounted for a little over 18 percent of the variation in time agents spent on record keeping subjects. The decision making test score accounted for 6.9 percent of the variation and the receptiveness of clientele score accounted for 6.6 percent of the variation in time spent on this dairy subject.

Data presented in Table X show that none of the agents' interest and attitude test scores were significantly related and therefore they can not be used as reliable predictors of time agents will spend on dairy record keeping subjects.

Influence of agents' interest and attitude toward dairying and job satisfaction and job performance rating scores on time spent on "other" dairy subjects. The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between nine interest and attitude test scores of the agents in 39 counties and the amount of

time they devoted to "other" dairy subjects in FY 1971-72 is shown in Table XI. Of the nine interest and attitude variables six, when taken independently, were significantly related to time spent by agents on "other" dairy subjects. A very highly significant (.001 level) relationship exists between the interest-attitude dairy scale ($r = .53$), the score on interest in dairying ($r = .53$) and receptiveness of clientele score ($r = .49$) and the amount of time agents spent on "other" dairy subjects. A highly significant (.01 level) correlation exists between the self-confidence score ($r = .42$), the dairy job satisfaction score ($r = .45$) and the importance of dairying score ($r = .41$) and the amount of time agents spent on these "other" dairy subjects. The decision making test score (which tended to show a negative correlation coefficient), the effectiveness rating score and the score on the multiple choice test all had low correlation coefficients and did not achieve the minimum .05 level of significance.

The multiple correlation coefficient was significant to at least the .05 level in six of the nine steps in the multiple regression analysis. The nine variables accounted for over 35 percent of the variation in time spent by agents on "other" dairy subjects. The agents' interest-attitude in dairying scale variable accounted for 28.5 percent of this variation.

The data in Table XI indicate that as the scores on the interest-attitude dairy scale, interest in dairying test, self-confidence test, dairy job satisfaction test, importance of dairying test and receptiveness of clientele test increased the amount of time the agents spent

TABLE XI

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON "OTHER" DAIRY SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Agents' Interest and Attitude	Time Spent on "Other" Dairy Subjects			
	r	R	R ²	% Change in R ²
Interest-attitude dairy scale	0.53 ^a	0.53 ^a	0.285	28.5
Effectiveness rating score	0.23	0.55 ^b	0.306	2.1
Score on interest in dairy	0.53 ^a	0.56 ^b	0.316	1.0
Self-confidence score in dairy	0.42 ^b	0.57 ^b	0.329	1.3
Dairy job satisfaction score	0.45 ^b	0.58 ^b	0.337	0.8
Decision making test score	-0.05	0.59 ^b	0.343	0.6
Importance of dairying score	0.41 ^b	0.59 ^c	0.349	0.6
Score on multiple choice test	0.17	0.59	0.353	0.4
Receptiveness of clientele score	0.49 ^a	0.60	0.354	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

on "other" dairy subjects increased. The best predictor of the amount of time agents will spend on "other" dairy subjects is the agents' rating on the dairy interest-attitude scale.

Influence of agents' interest and attitude toward dairying and job satisfaction and job performance rating scores on time spent on all dairy subjects. Table XII shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight interest and attitude test scores of the agents in 39 selected Tennessee counties and the amount of time devoted to all dairy subjects in FY 1971-72. From among the eight interest and attitude variables five, when taken independently, were significantly related to time spent by agents on all dairy subjects. A very highly significant (.001 level) relationship exists between the interest-attitude dairy scale ($r = .55$), importance of dairying score ($r = .48$), interest in dairying score ($r = .52$) and receptiveness of clientele score ($r = .49$) and the time agents spent on all dairy subjects. There was a highly significant (.01 level) correlation between the agents' score on the dairy job satisfaction scale ($r = .44$) and the time agents devoted to all dairy subjects. The decision making test score (which tended to be negatively correlated), the effectiveness rating score and the score on the multiple choice test all had low correlation coefficients and did not achieve the minimum .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The eight interest and attitude

TABLE XII

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON ALL DAIRY SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Agents' Interest and Attitude	Time Spent on All Dairy Subjects			
	r	R	R ²	% Change in R ²
Interest-attitude dairy scale	0.55 ^a	0.55 ^a	0.299	29.9
Effectiveness rating score	0.19	0.56 ^b	0.309	1.0
Importance of dairying score	0.48 ^a	0.57 ^b	0.324	1.5
Decision making test score	-0.06	0.58 ^b	0.336	1.2
Score on interest in dairy	0.52 ^a	0.59 ^b	0.343	0.7
Dairy job satisfaction score	0.44 ^b	0.60 ^b	0.359	1.6
Score on multiple choice test	0.13	0.60 ^c	0.364	0.5
Receptiveness of clientele score	0.49 ^a	0.61 ^c	0.368	0.4

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

variables accounted for a total of 36.8 percent of the variation in time spent by agents on all dairy subjects. The agents' interest-attitude in dairying score accounted for nearly 30 percent of this variation in time spent by the agents on all dairy subjects.

The data in Table XII indicate that as the agents' scores on the interest-attitude scale, importance of dairying test, interest in dairying test, dairy job satisfaction score and receptiveness of clientele test increase the amount of time agents devoted to all dairy subjects increased. The best predictor of the amount of time agents will spend on all dairy subjects is the score of the agents on the interest-attitude dairy scale.

The null hypothesis states that the total time spent by agents on related dairy subjects was not significantly related (i.e. multiple correlation) to the interest and attitude of agents. It also states that each independent variable was not significantly related to time spent by agents on selected groups of dairy subjects.

Data presented in this section of the study indicate that there were significant relationships between the agents' interest and attitude and time spent on selected groups of dairy subjects. The interest and attitude dairy scale and the importance of dairying score are significantly related to time spent by agents of all dairy subjects (Table XII), "other" dairy subjects (Table XI) and housing and management subjects (Table IX). Agents' scores on interest in dairying, dairy job satisfaction and receptiveness of clientele scores are significantly related to time agents spent on all dairy subjects (Table XII) and on

"other" dairy subjects (Table XI). The self-confidence in dairying score is significantly related to time spent on all dairy subjects (Table XII) and on housing and management subjects (Table IX). Based on these data the second part of the null hypothesis is rejected which states that each independent variable was not significantly related to time agents spent on selected groups of dairy subjects. Table XII shows that the multiple correlation coefficient was significant at each step in the multiple regression analysis. This data rejects the first part of the null hypothesis that states that the total time spent by agents on related dairy subjects was not significantly related to the interest and attitude of agents.

Influence of Agents' General Dairy and Farm Knowledge on Time Spent on Selected Dairy Subjects

This part of the study concerns the relationship between the amount of time agents devoted to each selected group of dairy subjects (breeding, feeding, housing and management, record keeping, "other", and all dairy subjects) and their scores on various dairy and farm knowledge test. The results of each set of correlations will be discussed separately and then the total section will be summarized.

Influence of agents' general dairy and farm knowledge on time spent on breeding subjects. Table XIII shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eleven general dairy and farm knowledge test scores of agents in 39 counties and the amount of time they devoted to dairy

TABLE XIII
 INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
 ON TIME SPENT IN FY 1971 AND FY 1972 WITH :
 DAIRY FARMERS ON DAIRY BREEDING
 SUBJECTS IN 39 SELECTED
 TENNESSEE COUNTIES

Agents' Knowledge	Time Spent on Dairy Breeding Subjects			% Change in R ²
	r	R	R ²	
Score on building planning test	0.30 ^c	0.30 ^c	0.089	8.9
Score on abnormal milk test	-0.26 ^d	0.41 ^c	0.169	8.0
Score on nutrition test	0.26 ^d	0.47 ^c	0.223	5.4
Score on general dairying test	0.25 ^d	0.49 ^c	0.245	2.2
Score on waste disposal test	0.01	0.50 ^c	0.250	0.5
Score on artificial breeding test	0.20	0.50	0.255	0.5
Score on farm planning test	0.12	0.51	0.259	0.4
Score on record keeping test	0.08	0.51	0.261	0.2
Score on quality feed test	0.07	0.51	0.262	0.1
Score on Ext. communications test	0.06	0.51	0.263	0.1
Score on milking management test	0.01	0.51	0.264	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

breeding subjects during FY 1971-1972. Of the eleven dairy and farm knowledge variables studied only one, when taken independently, was significantly related to time spent by agents on breeding subjects. A significant relationship (.05 level) exists between the score on the building planning test ($r = .30$) and the time they spent on dairy breeding subjects. The score on the abnormal milk test indicated a negative correlation coefficient which was slightly significant. Two other variables (agent scores on the nutrition test and the general dairying test) also show a slight significant relationship, but these two variables had a positive correlation coefficient. These latter variables and the other seven positively correlated variables (scores on the waste disposal, artificial breeding, farm planning, record keeping, quality feed, Extension communications, and milking management tests) had low coefficients and did not achieve the .05 level of significance.

The multiple correlation coefficient was significant at the first five steps (scores on the building planning, abnormal milk, nutrition, general dairying and waste disposal tests) in the multiple regression analysis. The eleven knowledge variables accounted for over 26 percent of the variation in time agents spent on breeding subjects. The score on the building planning test accounted for nearly nine percent of this variation, the score abnormal milk test accounted for eight percent while the score on the nutrition test accounted for over five percent of the variation in time agents spent on dairy breeding subjects.

Data in Table XIII indicated that as the agents scored higher on the building planning test they spent more time on dairy breeding subjects. The data further indicate that from among the agents' knowledge variables the best predictors of the time they will spend on dairy breeding subjects are the combined scores from the building planning, abnormal milk and the nutrition tests.

Influence of agents' general dairy and farm knowledge on time spent on feeding subjects. The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between ten general dairy and farm knowledge test scores of agents in 39 selected Tennessee counties and the amount of time they spent on dairy feeding subjects in FY 1971-72 is shown in Table XIV. Only one of the ten dairy and farm variables studied was significant when taken independently. A significant negative relationship (.05 level) existed between agents' scores on the abnormal milk test ($r = -.34$) and time agents devoted to dairy feeding subjects. Agents' scores on the building planning test indicated a slightly significant (.10 level) positive correlation coefficient ($r = .28$) with time agents spent on dairy feeding subjects. Other knowledge variables (scores on farm planning, artificial breeding and Extension program development tests) tended to have a negative correlation coefficient while the remaining variables (scores on waste disposal, milking management, quality feed, general dairying and Extension communications tests) tended to have a positive correlation coefficient. These latter coefficients were extremely low and did not achieve the .05 level of significance.

TABLE XIV

INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH
DAIRY FARMERS ON DAIRY FEEDING
SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Agents' Knowledge	Time Spent on Dairy Feeding Subjects			
	r	R	R ²	% Change in R ²
Score on abnormal milk test	-0.34 ^c	0.34 ^c	0.117	11.7
Score on building planning test	0.28 ^d	0.46 ^b	0.210	9.3
Score on farm planning test	-0.07	0.49 ^c	0.245	3.5
Score on waste disposal test	0.09	0.52 ^c	0.271	2.6
Score on milking management test	0.16	0.52 ^c	0.275	0.4
Score on artificial breeding test	-0.03	0.53 ^c	0.277	0.2
Score on quality feed test	0.09	0.53	0.279	0.2
Score on general dairying test	0.06	0.53	0.281	0.2
Score on Ext. program dev. test	-0.01	0.53	0.281	0.0
Score on Ext. communications test	0.12	0.53	0.281	0.0

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

The multiple correlation coefficient was significant within the .05 level at the first six steps (scores on the abnormal milk, building planning, farm planning, waste disposal, milking management and artificial breeding tests) in the multiple regression analysis. The ten knowledge variables in the equation accounted for over 28 percent of the variation in time agents spent on dairy feeding subjects. Agents' scores on the abnormal milk test accounted for nearly 12 percent of this variation and their scores on the building planning test accounted for over nine percent of the variation in time spent by agents on dairy feeding subjects.

The data in Table XIV show that as the agents scored lower on the abnormal milk test they spent more time on dairy feeding subjects. The best predictors of time agents will spend on dairy feeding, from among the agents' knowledge variables, are their scores on the abnormal milk test and the building planning test.

Influence of agents' general dairy and farm knowledge on time spent on housing and management subjects. Table XV shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between ten general dairy and farm knowledge test scores of agents in 39 counties and the amount of time they devoted to dairy housing and management subjects during FY 1971-72. None of the ten knowledge variables were significantly related to time spent by agents on housing and management when correlated independently. Seven of these knowledge variables (scores on record keeping, Extension program

TABLE XV
 INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
 ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
 FARMERS ON DAIRY HOUSING AND MANAGEMENT
 SUBJECTS IN 39 SELECTED
 TENNESSEE COUNTIES

Agents' Knowledge	Time Spent on Dairy Housing and Management Subjects			
	r	R	R ²	% Change in R ²
Score on record keeping test	-0.21	0.21	0.045	4.5
Score on general dairying test	0.18	0.30	0.088	4.3
Score on Ext. program dev. test	-0.11	0.34	0.114	2.6
Score on quality feed test	-0.21	0.36	0.133	1.9
Score on farm planning test	0.16	0.38	0.142	0.9
Score on artificial breeding test	-0.15	0.39	0.152	1.0
Score on waste disposal test	0.05	0.39	0.154	0.2
Score on milking management test	-0.05	0.40	0.158	0.4
Score on building planning test	-0.06	0.40	0.159	0.1
Score on abnormal milk test	-0.17	0.40	0.160	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

development, quality feed, artificial breeding, milking management, building planning and abnormal milk tests) tended to have a negative correlation coefficient. Three of these dairy and farm knowledge variables (scores on general dairying, farm planning and waste disposal tests) showed a positive correlation coefficient. All of the coefficients were very low and did not achieve the acceptable .05 level of significance.

The multiple correlation coefficient was not significant at any step in the multiple regression analysis. These ten dairy and farm knowledge variables accounted for 16 percent of the variation in time agents spent on dairy housing and management subjects.

The data presented in Table XV indicate that none of the dairy and farm knowledge test score variables can be used as adequate predictors of the amount of time agents will spend on dairy housing and management subjects.

Influence of agents' general dairy and farm knowledge on time spent on dairy record keeping subjects. The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eleven general dairy and farm knowledge test scores of agents in 39 counties and the amount of time they devoted to dairy record keeping subjects in FY 1971-72 is shown in Table XVI. Of the eleven dairy and farm knowledge variables studied only one, when taken independently, was significantly related to time agents spent on dairy record keeping subjects. A highly significant (.01 level) relationship existed between

TABLE XVI

INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON DAIRY RECORD KEEPING SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Agents' Knowledge	Time Spent on Dairy Record Keeping Subjects			
	r	R	R ²	% Change in R ²
Score on farm planning test	0.43 ^b	0.43 ^b	0.182	18.2
Score on Ext. communications test	-0.21	0.55 ^b	0.300	11.8
Score on building planning test	0.25 ^d	0.59 ^b	0.349	4.9
Score on general dairying test	0.26 ^d	0.61 ^b	0.376	2.7
Score on artificial breeding test	-0.04	0.64 ^b	0.404	2.8
Score on milking management test	-0.19	0.65 ^b	0.417	1.3
Score on abnormal milk test	0.04	0.65 ^b	0.428	1.1
Score on Ext. program dev. test	0.14	0.66 ^b	0.432	0.4
Score on waste disposal test	0.02	0.66 ^c	0.436	0.4
Score on quality feed test	0.08	0.66 ^c	0.441	0.5
Score on nutrition test	0.03	0.67 ^b	0.443	0.2

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

the score on the farm planning test ($r = .43$) and the time they spent on dairy record keeping subjects. The scores on the building planning and general dairy tests indicated a slightly (.10 level) significant trend. Three of the dairy and farm knowledge variables (scores on the Extension communication, artificial breeding and milking management tests) tended to have a negative correlation coefficient. The remaining knowledge variables (scores on abnormal milk, Extension program development, waste disposal, quality feed and nutrition tests) had positive correlation coefficients. All the coefficients except the farm planning test coefficient were low and did not achieve the .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The eleven dairy and farm knowledge variables accounted for over 44 percent of the variation in time agents spent on dairy record keeping subjects. Two of the independent variables account for 30 percent of this variation. One of the variables (score on the farm planning test) accounted for 18.2 percent of this variation and another variable (score on the Extension communications test) accounted for 11.8 percent of this variation.

The data described in Table XVI indicated that as the agents scored higher on the farm planning test they spent more time on dairy record keeping subjects. From these data the best predictor of the amount of time agents will spend on dairy record keeping subjects is their score on the farm planning test.

Influence of agents' general dairy and farm knowledge on time spent on "other" dairy subjects. Table XVII shows the Coefficients

TABLE XVII

INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON "OTHER" DAIRY SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Agents' Knowledge	Time Spent on "Other" Dairy Subjects			
	r	R	R ²	% Change in R ²
Score on general dairying test	0.29 ^d	0.29 ^d	0.086	8.6
Score on waste disposal test	-0.07	0.35	0.120	3.4
Score on farm planning test	0.24	0.39	0.154	3.4
Score on milking management test	-0.04	0.42	0.176	2.2
Score on building planning test	0.15	0.44	0.198	2.2
Score on Ext. program dev. test	-0.07	0.45	0.206	0.8
Score on artificial breeding test	0.12	0.46	0.211	0.5
Score on nutrition test	0.08	0.46	0.216	0.5
Score on quality feed test	-0.01	0.47	0.218	0.2
Score on record keeping test	0.10	0.47	0.219	0.1
Score on Ext. communications test	0.09	0.47	0.220	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eleven general dairy and farm knowledge test scores of agents in 39 Tennessee counties and the amount of time they spent on "other" dairy subjects in FY 1971-72. From among the eleven knowledge variables taken independently, all had low coefficients and none were within the acceptable .05 level of significance. One variable (score on the general dairying test) was within the .10 level of significance. Four variables (scores on the waste disposal, milking management, Extension program development and quality feed tests) tended to have negative correlation coefficients, while positive correlation coefficients were noted for the remaining six variables (scores on farm planning, building planning, artificial breeding, nutrition, record keeping and Extension communications tests).

The multiple correlation coefficient was not significant to the .05 level at any step in the multiple regression analysis. The eleven dairy knowledge variables accounted for a total of 22 percent of the variation in time spent by agents on "other" dairy subjects.

Based on the data in Table XVII none of the dairy and farm knowledge variables can be used to accurately predict how much time agents will spend on "other" dairy subjects.

Influence of agents' general dairy and farm knowledge on time spent on all dairy subjects. Table XVIII shows Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between ten general dairy and farm knowledge test scores of agents

TABLE XVIII

INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
ON TIME SPENT IN FY 1971 AND FY 1972 WITH DAIRY
FARMERS ON ALL DAIRY SUBJECTS IN 39
SELECTED TENNESSEE COUNTIES

Agents' Knowledge	Time Spent on All Dairy Subjects			Change in R ²
	r	R	R ²	
Score on general dairying test	0.31 ^c	0.31 ^c	0.097	9.7
Score on building planning test	0.22	0.38 ^c	0.143	4.6
Score on abnormal milk test	-0.20	0.42 ^c	0.173	3.0
Score on waste disposal test	-0.02	0.44	0.193	2.0
Score on Ext. program dev. test	-0.03	0.46	0.210	1.7
Score on quality feed test	-0.05	0.47	0.217	0.7
Score on farm planning test	0.23	0.47	0.220	0.3
Score on milking management test	-0.03	0.47	0.222	0.2
Score on artificial breeding test	0.01	0.47	0.225	0.3
Score on record keeping test	0.06	0.47	0.225	0.0

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

in 30 selected Tennessee counties and the amount of time they devoted to all dairy subjects during FY 1971-72. Of the ten knowledge variables studied only one, when taken independently, was significantly related to time spent by agents on all dairy subjects. A significant (.05 level) relationship existed between the score on the general dairying test ($r = .31$) and the time agents spent on all dairy subjects. Five of the knowledge variables (scores on the abnormal milk, waste disposal, Extension program development, quality feed, and milking management tests) had negative correlation coefficients. Four of the variables (scores on the building planning, farm planning, artificial breeding and record keeping tests) tended to have positive correlation coefficients.

The multiple correlation coefficient was significant at the .05 level in three of the ten steps in the multiple regression analysis. These ten variables accounted for 22.5 percent of the variation in time spent by agents on all dairy subjects. The score on the general dairying test accounted for nearly 10 percent of this variation.

From the data in Table XVIII it is indicated that as agents scored higher on the general dairying test they spent more time on all dairy subjects. Also based on the data in this table, the most reliable predictor of the amount of time agents will spend on all dairy subjects from among the dairy and farm knowledge variables is the agents' score on the general dairying test.

The null hypothesis states that the total time spent by agents on related dairy subjects was not significantly related (i.e. multiple

correlation) to the test scores made by agents on various test. It also states that each independent variable was not significantly related to time spent by agents on selected groups of dairy subjects.

Data presented in this section indicate that there were significant relationships between the agents' scores on dairy and farm knowledge test and time spent on selected groups of dairy subjects. The score agents made on the building planning test was significantly related to the time agents spent on dairy breeding subjects (Table XIII). The score agents made on the abnormal milk test was significantly related to the time agents devoted to dairy feeding subjects (Table XIV). The score agents made on the farm planning test had a highly significant relationship with the amount of time agents spent on dairy record keeping subjects (Table XVI). The score agents made on the general dairying test was significantly related to the time agents devoted to all dairy subjects (Table XVIII). These significant relationships reject the second part of the null hypothesis. Table XVI shows a significant multiple correlation at each step in the analysis. These data are sufficient to reject the first part of the hypothesis.

Influence of Selected County Situational Factors on the Average Amount of Time Spent by Agents on Selected Dairy Subjects

In this section each of the eight county situational factors is correlated with the amount of time agents spent on selected groups of dairy subjects (breeding, feeding, housing and management, record keeping, "other" and all dairy subjects). Each group of subjects will

be discussed separately with significant relationships emphasized and then a brief summary of the section will be given.

Influence of selected county situational factors on time spent by agents on breeding subjects. Table XIX gives the Coefficients of Correlations (r), multiple correlation (R) and multiple determinations (R^2) between eight selected county situational factors in 39 counties and the amount of time agents devoted to dairy breeding subjects during FY 1971-72. Of the eight county situational factors studied, only one, when taken independently, was significantly related to time spent by agents on breeding subjects. A significant (.05 level) relationship existed between the total county income from dairying ($r = .36$) and the time agents spent on dairy breeding subjects. The number of Grade-A dairymen in the county and the number of dairy farms in the county also were positively related (.10 level) to the amount of time agents spent on dairy breeding subjects. The number of men Extension agents in the county along with the average number of cattle per dairy herd tended to have a negative correlation coefficient. The remaining variables (average pounds of milk produced in the county, percent of county income from dairying and the number of dairymen using 21 recommended practices) all tended to have a positive correlation coefficient. All of the coefficients except the total county income from dairying were low and did not achieve the acceptable .05 level of significance.

The multiple correlation coefficient was significant at the first five steps in the multiple correlation analysis. The eight county

TABLE XIX

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
AVERAGE AMOUNT OF TIME AGENTS WORKED IN FY 1971
AND FY 1972 WITH DAIRY FARMERS ON DAIRY
BREEDING SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Selected County Situational Factors	Time Spent on Dairy Breeding Subjects			
	r	R	R ²	% Change in R ²
Total county income from dairying	0.36 ^c	0.36 ^c	0.132	13.2
No. of men Ext. agents in county	-0.19	0.45 ^c	0.202	7.0
No. of Grade A dairymen in county	0.28 ^d	0.47 ^c	0.224	2.2
Lbs. of milk per Grade A dairyman county avg.	0.11	0.48 ^c	0.233	0.9
No. of cows in Grade A herds, county avg.	-0.14	0.49 ^c	0.241	0.8
No. of dairy farms in county	0.28 ^d	0.50	0.248	0.7
Percent county farm income from dairying	0.23	0.50	0.252	0.4
Percent of Grade A dairymen using 21 practices	0.03	0.51	0.256	0.4

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

situational factors accounted for nearly 26 percent of the variation in the time agents devoted to dairy breeding subjects. The total county income from dairying accounted for over 13 percent of this variation.

The data indicate that as the total county income from dairying increased agents spent more time on dairy breeding subjects. The best county situational factor for reliably predicting how much time the agents will spend with dairymen on dairy breeding subjects is the total county income from dairying.

Influence of selected county situational factors on time spent by agents on feeding subjects. The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between seven selected county situational factors in 39 counties and the amount of time agents spent on dairy feeding subjects in FY 1971-72 is shown in Table XX. From among the seven county situational factors three, when taken independently, were significantly related to time agents spent on dairy feeding subjects. A highly significant (.01 level) relationship existed between the total county income from dairying ($r = .42$) and the time agents spent on dairy feeding subjects. A significant (.05 level) relationship existed between the county average pounds of milk produced by Grade A dairymen ($r = .32$) and the number of dairy farms in the county ($r = .34$) and time agents devoted to dairy feeding subjects. Two variables (the number of Grade A dairymen in the county and the number of men Extension agents in the county) tended to show a slight (.10 level) relationship to time agents spent on feeding subjects.

TABLE XX

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
 AVERAGE AMOUNT OF TIME AGENTS WORKED IN FY 1971
 AND FY 1972 WITH DAIRY FARMERS ON DAIRY
 FEEDING SUBJECTS IN 39 SELECTED
 TENNESSEE COUNTIES

Selected County Situational Factors	Time Spent on Dairy Feeding Subjects			% Change in R ²
	r	R	R ²	
Total county income from dairying	0.42 ^b	0.42 ^b	0.179	17.9
Lbs. of milk per Grade A dairymen county avg.	0.32 ^c	0.49 ^b	0.238	5.9
No. of cows in Grade A herds, county avg.	-0.16	0.51 ^b	0.262	2.4
No. of Grade A dairymen in county	0.27 ^d	0.54 ^b	0.290	2.8
No. of men Ext. agents in county	0.25 ^d	0.54 ^c	0.296	0.6
Percent of Grade A dairymen using 21 practices	0.08	0.55 ^c	0.299	0.3
No. of dairy farms in county	0.34 ^c	0.55	0.302	0.3

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

The two remaining variables, the average number of cows per Grade A herd in the county, which had a negative correlation coefficient, and the number of dairymen using the 21 recommended dairy production practices, which had a positive correlation coefficient, also failed to achieve the acceptable .05 level of significance.

The multiple correlation coefficient was significant at six of the seven steps in the multiple regression analysis. The seven county situational factors accounted for over 30 percent of the variation in the time agents spent on dairy feeding subjects. Two independent variables accounted for nearly 24 percent of this variation. One variable (the total county income from dairying) accounted for 17.9 percent of the variation and one variable (the county average pounds of milk per Grade A dairyman) accounted for 5.9 percent of this variation in time agents spent on dairy feeding subjects.

Data in Table XX indicate that as the total income from dairying increased, as the county average pounds of milk produced by Grade A dairymen increased and as the number of dairy farms in the county increased the amount of time agents spent with dairymen on dairy feeding subjects increased. The best county situational factors to use for predicting the amount of time agents will spend on dairy feeding subjects are the total county income from dairying and the county average pounds of milk produced per Grade-A producer.

Influence of selected county situational factors on time spent by agents on housing and management subjects. Table XXI shows the

TABLE XXI

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
AVERAGE AMOUNT OF TIME AGENTS WORKED IN FY 1971
AND FY 1972 WITH DAIRY FARMERS ON DAIRY
HOUSING AND MANAGEMENT SUBJECTS IN
39 SELECTED TENNESSEE COUNTIES

Selected County Situational Factors	Time Spent on Dairy Housing and Management Subjects			
	r	R	R ²	% Change in R ²
Percent county farm income from dairying	0.59 ^a	0.59 ^a	0.351	35.1
No. of Grade A dairymen in county	0.53 ^a	0.62 ^b	0.379	2.8
No. of men Ext. agents in county	0.08	0.62 ^b	0.387	0.8
No. of dairy farms in county	0.17	0.63 ^b	0.398	1.1
No. of cows in Grade A herds, county avg.	-0.25 ^d	0.63 ^b	0.400	0.2
Total county income from dairying	0.42 ^b	0.63 ^b	0.402	0.2
Percent of Grade A dairymen using 21 practices	-0.04	0.63 ^b	0.403	0.1
Lbs. of milk per Grade A dairyman, county avg.	0.04	0.64 ^b	0.404	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

Coefficient of Correlation (r), multiple correlation (R) and multiple determination (R^2) between eight selected county situational factors in 39 counties and the amount of time agents devoted to dairy housing and management subjects in FY 1971-72. Only three of the eight county situational factors studied, when taken separately, were significantly related to time spent by agents on dairy housing and management subjects. A very highly significant (.001 level) relationship existed between the percent of county income from dairying ($r = .59$) and the number of Grade A dairymen in the county ($r = .53$) and time devoted by agents to dairy housing and management subjects. A highly significant (.01 level) relationship existed between the total county income from dairying ($r = .42$) and time agents spent on dairy housing and management subjects. The average number of cows per herd and the percent of dairymen using the 21 recommended practices had negative correlation coefficients. The number of men Extension agents in the county and the average pounds of milk produced by Grade A dairymen in the county tended to have positive correlation coefficients. These latter coefficients were very low and did not achieve the acceptable .05 level of significance.

The multiple correlation coefficient was highly significant to at least the .01 level at each step in the multiple regression analysis. The eight county situational factors accounted for over 40 percent of the variation in the time agents spent on dairy housing and management subjects. The percent of the county farm income from dairying accounted for more than 35 percent of this variation.

Briefly, the data in Table XXI indicate that as the income from dairying in the county rose and as the number of Grade A dairymen in the county increased the agent spent more time with dairymen on housing and management subjects. The best county situational factor for predicting how much time agents will spend on dairy housing and management subjects is the percent of the county income from dairying.

Influence of selected county situational factors on time spent by agents on dairy record keeping subjects. The Data in Table XXII show the Coefficient of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight selected county situational factors in 39 selected Tennessee counties and the amount of time agents devoted to dairy record keeping subjects in FY 1971-72. None of the county situational factors had coefficients high enough to achieve the .05 level of significance. The average number of cattle per Grade A dairy herd in the county and the number of Grade A dairymen in the county tended to show a slight (.10 level) relationship, though not within acceptable limits, to the time agents spent on dairy record keeping subjects. Two variables (the percent of dairymen using 21 recommended dairy practices and the number of men Extension agents in the county) had negative correlation coefficients. The percent of county farm income from dairying, the total county income from dairying, the number of dairy farms in the county and the average number of pounds of milk produced per Grade-A producer had very low positive correlation coefficients with time agents spent on dairy record keeping subjects.

TABLE XXII

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
 AVERAGE AMOUNT OF TIME AGENTS WORKED IN FY 1971
 AND FY 1972 WITH DAIRY FARMERS ON DAIRY
 RECORD KEEPING SUBJECTS IN 39
 SELECTED TENNESSEE COUNTIES

Selected County Situational Factors	Time Spent on Dairy Record Keeping Subjects			% Change in R ²
	r	R	R ²	
No. of cows in Grade A herds, county avg.	0.28 ^d	0.28 ^d	0.080	8.0
No. of Grade A dairymen in county	0.27 ^d	0.46 ^b	0.209	12.9
Percent of Grade A dairymen using 21 practices	-0.04	0.48 ^c	0.228	1.9
No. of men Ext. agents in county	-0.11	0.49 ^c	0.237	0.9
Percent county farm income from dairying	0.06	0.49 ^c	0.244	0.7
Total county income from dairying	0.18	0.50	0.247	0.3
No. of dairy farms in county	0.05	0.50	0.250	0.3
Lbs. of milk per Grade A dairyman, county avg.	0.12	0.50	0.252	0.2

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

The multiple correlation coefficient was significant at acceptable levels at four of the eight steps (number of Grade A dairymen in the county, percent of dairymen using 21 recommended dairy practices, number of men Extension agents in the county and percent county farm income from dairying) in the multiple regression analysis. These eight county situational factors accounted for over 25 percent of the variation in time the agents devoted to dairy record keeping subjects. Two independent variables accounted for nearly 21 percent of this variation. One variable (the county average number of cattle per Grade-A herd) accounted for eight percent of this variation and another variable (the number of Grade A dairymen in the county) accounted for nearly 13 percent of the variation in time agents devoted to dairy record keeping subjects.

The data in Table XXII indicate that none of these county situational factors can be used as reliable predictors of the time agents will spend on dairy record keeping subjects.

Influence of selected county situational factors on time spent by agents on "other" dairy subjects. The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight selected county situational factors in 39 counties and the amount of time agents devoted to "other" dairy subjects during FY 1971-72 is shown in Table XXIII. Of the eight county situational factors studied four, when taken independently, were significantly related to time spent by agents on "other" dairy subjects. A very highly significant (.001 level) relationship existed between the number of Grade A dairymen

TABLE XXIII

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
AVERAGE AMOUNT OF TIME AGENTS WORKED IN FY 1971
AND FY 1972 WITH DAIRY FARMERS ON "OTHER"
DAIRY SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Selected County Situational Factors	Time Spent on "Other" Dairy Subjects			% Change in R ²
	r	R	R ²	
No. of Grade A dairymen in county	0.72 ^a	0.72 ^a	0.521	52.1
Percent county farm income from dairying	0.60 ^a	0.74 ^b	0.543	2.2
Percent of Grade A dairymen using 21 practices	-0.14	0.74 ^b	0.548	0.5
Lbs. of milk per Grade A dairyman, county avg.	0.14	0.75 ^b	0.557	0.9
No. of men Ext. agents in county	0.05	0.75 ^b	0.563	0.6
Total county income from dairying	0.58 ^a	0.75 ^b	0.569	0.6
No. of dairy farms in county	0.33 ^c	0.76 ^b	0.571	0.2
No. of cows in Grade A herds, county avg.	-0.19	0.76 ^b	0.573	0.2

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

in the county ($r = .72$), the percent of the farm income from dairying ($r = .60$) and the total county income from dairying ($r = .58$) and the time agents spent on "other" dairy subjects. A significant (.05 level) relationship existed between the number of dairy farms in the county ($r = .33$) and the amount of time agents spent on "other" dairy subjects. The percent of Grade A dairymen using the 21 recommended dairy practices and the county average number of dairy cows per Grade A herd had negative correlation coefficients. The county average pounds of milk per Grade A dairyman and the number of men Extension agents had positive correlation coefficients. These latter coefficients were very low and did not achieve the acceptable .05 level of significance.

The multiple correlation coefficient was highly significant (.01 level) at each step in the multiple regression analysis. These eight selected county situational factors accounted for over 57 percent of the variation in the amount of time agents spent on "other" dairy subjects. One variable (the number of Grade A dairymen in the county) accounted for over 52 percent of this variation.

The data in Table XXIII indicate that as the number of Grade A dairymen, the percent of county farm income from dairying, the total county income from dairying and the number of dairy farms in the county increased the amount of time the agents devoted to "other" dairy subjects increased. Based on the data presented, the county situational factor that will best predict the amount of time agents will spend on "other" dairy subjects is the number of Grade A dairymen in the county.

Influence of selected county situational factors on time spent by agents on all dairy subjects. Table XXIV shows the Coefficient of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight selected county situational factors in 39 counties and the amount of time agents devoted to all dairy subjects during FY 1971-72. Of the eight county situational factors studied four, when taken independently, were significantly related to time spent by agents on all dairy subjects. A very highly significant (.001 level) relationship existed between the number of Grade A dairymen in the county ($r = .75$), the percent of the county income from dairying ($r = .64$) and the total county income from dairying ($r = .65$) and the time agents devoted to all dairy subjects. A highly significant (.01 level) relationship existed between the number of dairy farms in the county ($r = .39$) and the time agents spent on all dairy subjects. The percent of Grade A dairymen using the 21 recommended practices and the county average number of dairy cows per Grade A herd had negative correlation coefficients. The county average number of pounds of milk and the number of men Extension agents in the county had positive correlation coefficients. These latter four coefficients were very low and failed to achieve the .05 level of significance.

The multiple correlation coefficient was highly significant (.01 level) at each step in the multiple regression analysis. These eight county situational factors accounted for nearly 62 percent of the variation in time agents devoted to all dairy subjects. One variable (the number of Grade A dairymen in the county) accounted for nearly 56 percent of this variation.

TABLE XXIV

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
 AVERAGE AMOUNT OF TIME AGENTS WORKED IN FY 1971
 AND FY 1972 WITH DAIRY FARMERS ON ALL DAIRY
 SUBJECTS IN 39 SELECTED
 TENNESSEE COUNTIES

Selected County Situational Factors	Time Spent on All Dairy Subjects			% Change in R ²
	r	R	R ²	
No. of Grade A dairymen in county	0.75 ^a	0.75 ^a	0.555	55.5
Percent county farm income from dairying	0.64 ^a	0.77 ^b	0.588	3.3
Lbs. of milk per Grade A dairyman, county avg.	0.22	0.78 ^b	0.606	1.8
Percent of Grade A dairymen using 21 practices	-0.07	0.78 ^b	0.609	0.3
No. of men Ext. agents in county	0.05	0.78 ^b	0.611	0.2
No. of dairy farms in county	0.39 ^b	0.78 ^b	0.613	0.2
No. of cows in Grade A herds, county avg.	-0.19	0.78 ^b	0.615	0.2
Total county income from dairying	0.65 ^a	0.78 ^b	0.615	0.0

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

The data indicate that as the number of Grade A dairymen in the county, the percent of the county farm income from dairying, the total county income from dairying and the number of dairy farms in the county increased the amount of time agents spent on all dairy subjects increased. Further, the data in Table XXIV indicate that the number of Grade A dairymen in the county is the best predictor of the amount of time agents will spend on all dairy subjects.

The null hypothesis states that the total time spent by agents on related dairy subjects was not significantly related (i.e. multiple correlation) to county situational factors. The hypothesis also states that each independent variable was not related to time spent by agents on selected groups of dairy subjects.

Data in this section of the study indicate that there were relationships between the county situational factors and the time agents spent on selected groups of dairy subjects. The relationships summarized below support a rejection of the null hypothesis. The number of Grade A dairymen in the county and the percent of county farm income from dairying were very highly significantly related (.001 level) to time agents spent on all dairy subjects (Table XXIV), "other" dairy subjects (Table XXIII) and housing and management subjects (Table XXI). The total county income from dairying was very highly significantly related (.001 level) to time agents spent on all dairy subjects (Table XXIV), "other" dairy subjects (Table XXIII), very significantly related (.01 level) to time agents spent on dairy feeding subjects (Table XX) and significantly related (.05 level) to time agents devoted to dairy

breeding subjects (Table XIX). The number of dairy farmers in the county was very significantly related (.01 level) to the amount of time agents spent on all dairy subjects (Table XXIV), significantly related (.05 level) to time agents spent on "other" dairy subjects (Table XXIII) and to the amount of time agents spent on dairy feeding subjects (Table XX). Finally, the county average pounds of milk per Grade A dairymen is significantly related (.05 level) to the amount of time agents spent on dairy feeding subjects (Table XX). These data are sufficient to reject the second part of the hypothesis. Data in Tables XXI, XXIII and XXIV show that the multiple correlation coefficient was significant at each step in the analysis. These data are sufficient to reject the portion of the hypothesis concerning time spent on housing and management, "other" and all dairy subjects.

Influence of the Number of Grade A Dairymen Using Selected Individual Recommended Dairy Practices on the Amount of Time Spent by Agents on Selected Dairy Subjects

Individual recommended dairy practices were used in this part of the study as independent variables for correlation to time spent by agents on groups of dairy subjects (breeding, feeding, housing and management, record keeping, "other", and all dairy subjects). Each of the individual numbered practices corresponds to the number of the practice on the University of Tennessee "GRADE A MILK PRODUCTION PRACTICE CHECKLIST" (Appendix B). The results of each correlation that is significant within acceptable limits will be discussed.

Influence of the number of Grade A dairymen using selected individual recommended dairy practices on time spent by agents on breeding subjects. Table XXV shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 20 recommended dairy practices used by dairymen in 39 counties and the amount of time agents devoted to dairy breeding subjects during FY 1971-72. Of the 20 recommended practices variables only one, when taken independently, was significantly related to the time agents spent on dairy breeding subjects. A significant (.05 level) relationship existed between the use of practice number 19 (use of a recommended method of fly control around barns, loafing and milking areas) ($r = .35$) and the time agents spent on breeding subjects. A negative correlation coefficient existed between nine variables (the use of practices number 1, 4, 7, 9-13, and 15) and the time agents spent on breeding subjects. A positive correlation coefficient existed between ten variables (the use of practices number 2, 3, 5, 6, 14, 16, 17, 18, 20 and 21) and the amount of time agents devoted to dairy breeding subjects. All the latter coefficients were very low and did not achieve the .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The use of these 20 recommended dairy practices accounted for nearly 59 percent of the variation in time agents devoted to dairy breeding subjects. Five of these independent variables accounted for nearly 40 percent of this variation. The use of practice number 19 accounted for 11.9 percent of this variation,

TABLE XXV

INFLUENCE OF THE NUMBER OF GRADE A DAIRYMEN USING SELECTED
RECOMMENDED DAIRY PRACTICES ON THE TIME SPENT
IN FY 1971 AND FY 1972 BY AGENTS WITH
DAIRY FARMERS ON DAIRY BREEDING
SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Selected Practices Used	Time Spent on Dairy Breeding Subjects			% Change in R ²
	r	R	R ²	
Use of practice number 19	0.35 ^c	0.35 ^c	0.119	11.9
Use of practice number 9	-0.13	0.45 ^b	0.199	8.0
Use of practice number 3	0.22	0.52 ^b	0.269	7.0
Use of practice number 20	0.29 ^d	0.57 ^b	0.326	5.7
Use of practice number 12	-0.18	0.63 ^b	0.396	7.0
Use of practice number 11	-0.23	0.66 ^b	0.433	3.7
Use of practice number 5	0.04	0.67 ^b	0.451	1.8
Use of practice number 16	0.04	0.69 ^b	0.476	2.5
Use of practice number 2	0.16	0.71 ^b	0.498	2.2
Use of practice number 4	-0.10	0.73 ^b	0.529	3.1
Use of practice number 15	-0.02	0.73 ^b	0.539	1.0
Use of practice number 1	-0.10	0.74 ^b	0.547	0.8
Use of practice number 21	0.27	0.74 ^b	0.552	0.5
Use of practice number 14	0.05	0.75 ^b	0.561	0.9
Use of practice number 6	0.08	0.75 ^b	0.565	0.4
Use of practice number 7	-0.24	0.76 ^b	0.573	0.8
Use of practice number 10	-0.16	0.76 ^b	0.577	0.4
Use of practice number 18	0.08	0.76 ^b	0.583	0.6
Use of practice number 17	0.07	0.77 ^b	0.585	0.2
Use of practice number 13	-0.11	0.77 ^b	0.587	0.2

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

practice number 9 accounted for eight percent, practice number 3 accounted for seven percent, practice number 20 accounted for nearly six percent and use of practice number 12 accounted for seven percent of the variation in the time agents spent on dairy breeding subjects.

Briefly, this data indicated that as the number of Grade A dairymen using practice number 19 (use of a recommended method of fly control around barns, loafing and milking areas) increased the amount of time agents devoted to dairy breeding subjects increased. Based on the data in Table XXV the use of practice number 19 is the best predictor of the amount of time agents will spend on dairy breeding subjects.

Influence of the number of Grade A Dairymen using selected individual recommended dairy practices on time spent by agents on feeding subjects...

The Coefficients of Correlation (r), multiple correlations (R) and multiple determinations (R^2) between 17 recommended dairy practices used by dairymen in 39 counties in Tennessee and the amount of time agents spent on dairy feeding subjects during FY 1971-72 is shown in Table XXVI. Only two of the 17 independent variables, when taken separately, were significantly related to the time agents devoted to dairy feeding subjects. A significant (.05 level) relationship existed between the use of practice number 18 (proper preparation of cows for milking) ($r = .37$) and the use of practice number 3 (allowing at least a 60 day period from calving to breeding) ($r = .33$) and the amount of time agents devoted to dairy feeding subjects. Other practice use variables (use of practice number 1, 2, 11, 17, 19 and 21) tended to show positive

TABLE XXVI

INFLUENCE OF THE NUMBER OF GRADE A DAIRYMEN USING SELECTED
RECOMMENDED DAIRY PRACTICES ON THE TIME SPENT
IN FY 1971 AND FY 1972 BY AGENTS WITH
DAIRY FARMERS ON DAIRY FEEDING
SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Selected Practices Used	Time Spent on Dairy Feeding Subjects			% Change in R ²
	r	R	R ²	
Use of practice number 18	0.37 ^c	0.37 ^c	0.134	13.4
Use of practice number 3	0.33 ^c	0.45 ^b	0.199	6.5
Use of practice number 19	0.26 ^d	0.50 ^b	0.254	5.5
Use of practice number 9	-0.10	0.54 ^b	0.296	4.2
Use of practice number 8	-0.01	0.58 ^b	0.331	3.5
Use of practice number 1	0.20	0.60 ^c	0.354	2.3
Use of practice number 13	-0.24	0.61 ^b	0.376	2.2
Use of practice number 12	-0.02	0.62 ^c	0.394	1.8
Use of practice number 5	-0.08	0.63 ^c	0.402	0.8
Use of practice number 14	-0.18	0.64 ^c	0.414	1.2
Use of practice number 7	-0.02	0.65 ^c	0.425	1.1
Use of practice number 11	0.10	0.66 ^c	0.436	1.1
Use of practice number 17	0.15	0.66	0.437	0.1
Use of practice number 21	0.14	0.66	0.438	0.1
Use of practice number 10	-0.10	0.66	0.439	0.1
Use of practice number 2	0.12	0.66	0.440	0.1
Use of practice number 6	-0.08	0.66	0.441	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

correlation coefficients while some practice use variables (use of practice number 5-10 and 12-14) tended to have negative correlation coefficients. These latter coefficients failed to achieve the acceptable .05 level of significance.

The multiple correlation coefficient was significant through the first 12 steps in the multiple regression analysis. The use of these 17 recommended dairy practice variables accounted for over 44 percent of the time agents spent on dairy feeding subjects. The use of two of these independent variables accounted for nearly 20 percent of this variation. One of these variables (practice number 18) accounted for over 13 percent of the variation while the use of the second variable (practice number 3) accounted for nearly seven percent of the variation in time agents spent on dairy feeding subjects.

The data in Table XXVI indicate that as the number of Grade A dairymen using practice number 18 (proper preparation of cows for milking) and practice number 3 (allowing at least a 60 day period from calving to breeding) increased that the amount of time agents spent on dairy feeding subjects increased. The best predictor of the amount of time agents will spend on dairy feeding subjects from among the recommended practices is the use of practice number 18 and practice number 3.

Influence of the number of Grade A dairymen using selected individual recommended dairy practices on time spent by agents on housing and management subjects. Table XXVII shows the Coefficients

TABLE XXVII

INFLUENCE OF THE NUMBER OF GRADE A DAIRYMEN USING SELECTED
RECOMMENDED DAIRY PRACTICES ON THE TIME SPENT
IN FY 1971 AND FY 1972 BY AGENTS WITH
DAIRY FARMERS ON DAIRY HOUSING
AND MANAGEMENT SUBJECTS IN
39 SELECTED TENNESSEE
COUNTIES

Selected Practices Used	Time Spent on Dairy Housing and Management Subjects			
	r	R	R ²	% Change in R ²
Use of practice number 21	-0.37 ^c	0.37 ^c	0.133	13.3
Use of practice number 3	0.28 ^d	0.43 ^c	0.186	5.3
Use of practice number 14	-0.07	0.48 ^b	0.225	3.9
Use of practice number 17	0.19	0.53 ^b	0.276	5.1
Use of practice number 18	-0.06	0.56 ^b	0.311	3.5
Use of practice number 7	-0.17	0.58 ^b	0.337	2.6
Use of practice number 6	0.03	0.61 ^c	0.370	3.3
Use of practice number 2	0.01	0.62 ^b	0.386	1.6
Use of practice number 15	-0.12	0.63 ^c	0.396	1.0
Use of practice number 5	0.07	0.64 ^c	0.413	1.7
Use of practice number 16	-0.01	0.66 ^c	0.433	2.0
Use of practice number 8	-0.06	0.67 ^b	0.451	1.8
Use of practice number 20	-0.09	0.67	0.455	0.4
Use of practice number 4	0.12	0.67	0.456	0.1
Use of practice number 10	-0.01	0.68	0.457	0.1
Use of practice number 1	0.05	0.68	0.458	0.1
Use of practice number 13	0.06	0.68	0.459	0.1
Use of practice number 12	0.03	0.68	0.461	0.2
Use of practice number 19	-0.01	0.68	0.462	0.1
Use of practice number 11	-0.11	0.68	0.463	0.1
Use of practice number 9	0.20	0.68	0.464	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 21 recommended dairy practices used by dairymen in 39 counties and the amount of time agents devoted to dairy housing and management subjects during FY 1971-72. Of the 21 recommended practices variables only one, when taken independently, was significantly related to time agents spent on dairy housing and management subjects. The use of practice number 21 (at least 75 percent of cows freshen in the fall) showed a significant (.05 level) negative correlation ($r = -.37$) with time agents spent on dairy housing and management subjects. Other practice use variables (use of practice number 7, 8, 10, 11, 14-16 and 18-20) also tended to have a negative correlation coefficient. The remaining practice use variables (use of practice 1-6, 9, 12, 13 and 17) tended to have positive correlation coefficients. These latter coefficients were low and did not achieve the .05 level of significance.

The multiple correlation coefficient was significant through the first 12 steps in the multiple regression analysis. The 21 recommended practices variables accounted for over 46 percent of the variation in the amount of time agents spent on dairy housing and management subjects. The use of practice number 21 accounted for over 13 percent of this variation.

As indicated by the data in Table XXVII, the amount of time agents spent on dairy housing and management increased as the dairymen decreased their use of recommended practice number 21. The best predictor of the amount of time agents will spend on dairy housing and management subjects from among the recommended dairy practices is the use of practice number 21 (at least 75 percent of cows freshen in the fall).

Influence of the number of Grade A dairymen using selected individual recommended dairy practices on time spent by agents on record keeping subjects. The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 21 recommended dairy practices used by dairymen in 39 counties and the amount of time agents devoted to dairy record keeping practices during FY 1971-72 is shown in Table XXVIII. Only one of the 21 recommended practice variables was significantly related to the amount of time agents spent on record keeping practices when taken separately. The use of practice number 13 (maintaining a 12-14 month calving interval) showed a significant (.05 level) negative correlation ($r = -.35$) with time agents spent on dairy record keeping subjects. Other practice use variables (use of practice number 4, 6, 9, 10, 12, 14, 15, 17 and 19-21) also tended to have negative correlation coefficients. The remaining practice use variables (use of practice number 1, 2, 3, 5, 7, 8, 11, 16 and 18) had positive correlation coefficients. These latter coefficients were low and did not reach the acceptable .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The 21 recommended practice variables accounted for nearly 74 percent of the variation in the time agents devoted to dairy record keeping subjects. The use of practice number 13 accounted for 12 percent of this variation and the use of practice number 5 (provision of high quality silage) accounted for nearly 13 percent of this variation even though it was not a significant variable.

TABLE XXVIII

INFLUENCE OF THE NUMBER OF GRADE A DAIRYMEN USING SELECTED
RECOMMENDED DAIRY PRACTICES ON THE TIME SPENT
IN FY 1971 AND FY 1972 BY AGENTS WITH
DAIRY FARMERS ON DAIRY RECORD
KEEPING SUBJECTS IN 39
SELECTED TENNESSEE
COUNTIES

Selected Practices Used	Time Spent on Dairy Record Keeping Subjects			
	r	R	R ²	% Change in R ²
Use of practice number 13	-0.35 ^c	0.35 ^c	0.120	12.0
Use of practice number 6	-0.19	0.43 ^c	0.188	6.8
Use of practice number 5	0.07	0.56 ^b	0.314	12.6
Use of practice number 17	-0.08	0.62 ^b	0.387	7.3
Use of practice number 8	0.17	0.67 ^b	0.455	6.8
Use of practice number 18	0.19	0.69 ^b	0.480	2.5
Use of practice number 21	-0.10	0.71 ^b	0.500	2.0
Use of practice number 14	-0.07	0.72 ^b	0.524	2.4
Use of practice number 16	0.16	0.74 ^b	0.549	2.5
Use of practice number 11	0.13	0.75 ^b	0.566	1.7
Use of practice number 9	-0.15	0.77 ^b	0.587	2.1
Use of practice number 20	-0.12	0.78 ^b	0.613	2.6
Use of practice number 19	-0.09	0.80 ^b	0.637	2.4
Use of practice number 12	-0.27 ^d	0.82 ^b	0.670	3.3
Use of practice number 3	0.09	0.84 ^b	0.699	2.9
Use of practice number 1	0.17	0.85 ^b	0.720	2.1
Use of practice number 7	0.15	0.85 ^b	0.731	1.1
Use of practice number 10	-0.19	0.86 ^b	0.733	0.2
Use of practice number 4	-0.21	0.86 ^b	0.734	0.1
Use of practice number 2	0.07	0.86 ^b	0.735	0.1
Use of practice number 15	-0.07	0.86 ^b	0.737	0.2

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

Based on the data in Table XXVIII, as the number of dairymen using practice number 13 (maintaining a 12-14 month calving interval) decreased the amount of time agents spent on dairy record keeping practices increased. The best practice use variable to predict the amount of time agents will spend on record keeping subjects is the use of practice number 13.

Influence of the number of Grade A dairymen using selected individual recommended dairy practices on time spent by agents on "other" dairy subjects. Table XXIX shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 21 recommended dairy practices used by dairymen in 39 counties and the amount of time agents devoted to "other" dairy subjects during FY 1971-72. From among the 21 recommended practices variables only one of these independent variables, when taken independently, was significantly related to the time spent by agents on "other" dairy subjects. The use of practice number 21 (at least 75 percent of cows freshen in the fall) showed a significant (.05 level) negative correlation coefficient ($r = -.37$) with time they spent on "other" dairy subjects. Other practice use variables (use of practice number 1, 2, 6, 7, 9, 10, 15, 16, and 18-20) also had negative correlation coefficients. The remaining practice use variables (use of practice number 3, 4, 5, 8, 11-14 and 17) tended to have positive correlation coefficients. All of these latter variables were low and did not reach the acceptable level of significance.

TABLE XXIX

INFLUENCE OF THE NUMBER OF GRADE A DAIRYMEN USING SELECTED
RECOMMENDED DAIRY PRACTICES ON THE TIME SPENT
IN FY 1971 AND FY 1972 BY AGENTS WITH
DAIRY FARMERS ON "OTHER" DAIRY
SUBJECTS IN 39 SELECTED
TENNESSEE COUNTIES

Selected Practices Used	Time Spent on "Other" Dairy Subjects			
	r	R	R ²	% Change in R ²
Use of practice number 21	-0.37 ^c	0.37 ^c	0.137	13.7
Use of practice number 7	-0.28	0.46 ^b	0.215	7.8
Use of practice number 11	0.01	0.50 ^b	0.249	3.4
Use of practice number 9	-0.14	0.54 ^b	0.290	4.1
Use of practice number 2	-0.01	0.57 ^b	0.323	3.3
Use of practice number 14	0.03	0.59 ^b	0.352	2.9
Use of practice number 5	0.10	0.62 ^b	0.387	3.5
Use of practice number 3	0.16	0.64 ^b	0.411	2.4
Use of practice number 16	-0.05	0.66 ^c	0.438	2.7
Use of practice number 1	-0.08	0.68 ^b	0.462	2.4
Use of practice number 20	-0.04	0.69 ^b	0.477	1.5
Use of practice number 12	0.01	0.71 ^b	0.503	2.6
Use of practice number 19	-0.09	0.72 ^c	0.516	1.3
Use of practice number 10	-0.14	0.72 ^c	0.524	0.8
Use of practice number 18	-0.05	0.73 ^c	0.533	0.9
Use of practice number 17	0.05	0.74 ^c	0.540	0.7
Use of practice number 4	0.13	0.74 ^c	0.545	0.5
Use of practice number 6	-0.14	0.75 ^c	0.556	1.1
Use of practice number 8	0.08	0.75 ^c	0.561	0.5
Use of practice number 13	0.15	0.75 ^c	0.564	0.3
Use of practice number 15	-0.07	0.75 ^c	0.570	0.6

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

The multiple correlation coefficient was significant at each step in the multiple regression analysis. These independent variables accounted for 57 percent of the variation in time agents devoted to "other" dairy subjects. The use of practice number 21 accounted for nearly 14 percent of this variation.

Data in Table XXIX indicate that as the number of dairymen using practice number 21 decreased the amount of time agents spent on "other" dairy subjects increased. To predict the amount of time agents will devote to "other" dairy subjects, the use of practice number 21 (at least 75 percent of cows freshen in the fall) is the best practice use variable to use.

Influence of the number of Grade A dairymen using selected individual recommended dairy practices on time spent by agents on all dairy subjects. Table XXX shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 19 recommended dairy practices used by dairymen in 39 selected Tennessee counties and the amount of time agents devoted to all dairy subjects in FY 1971-72. Of the 19 recommended practices variables studied only two, when taken independently, were significantly related to time spent by agents on all dairy subjects. A significant (.05 level) negative relationship between the use of practice number 21 (at least 75 percent of cows freshen in the fall) ($r = -.31$) and the time they spent on all dairy subjects. The use of practice number 3 (allowing at least a 60 day period from calving to breeding) showed a significant (.05 level)

TABLE XXX

INFLUENCE OF THE NUMBER OF GRADE A DAIRYMEN USING SELECTED
RECOMMENDED DAIRY PRACTICES ON THE TIME SPENT
IN FY 1971 AND FY 1972 BY AGENTS WITH
DAIRY FARMERS ON ALL DAIRY SUBJECTS
IN 39 SELECTED TENNESSEE COUNTIES

Selected Practices Used	Time Spent on All Dairy Subjects			% Change in R ²
	r	R	R ²	
Use of practice number 21	-0.31 ^c	0.31 ^c	0.094	9.4
Use of practice number 3	0.30 ^c	0.40 ^b	0.161	9.7
Use of practice number 10	0.17	0.51 ^b	0.256	9.5
Use of practice number 7	-0.24	0.54 ^b	0.290	3.4
Use of practice number 14	-0.03	0.60 ^b	0.366	7.6
Use of practice number 5	0.08	0.62 ^b	0.389	2.3
Use of practice number 1	-0.03	0.65 ^b	0.418	2.9
Use of practice number 9	-0.08	0.66 ^b	0.442	2.4
Use of practice number 13	-0.01	0.68 ^b	0.468	2.6
Use of practice number 16	0.07	0.70 ^b	0.488	2.0
Use of practice number 20	-0.01	0.73 ^b	0.532	4.4
Use of practice number 6	-0.13	0.74 ^b	0.547	1.5
Use of practice number 4	0.06	0.75 ^c	0.555	0.8
Use of practice number 17	0.18	0.75 ^c	0.557	0.2
Use of practice number 2	0.06	0.75 ^c	0.562	0.5
Use of practice number 12	-0.04	0.75 ^c	0.567	0.5
Use of practice number 19	0.01	0.76 ^c	0.571	0.4
Use of practice number 8	0.09	0.76 ^c	0.572	0.1
Use of practice number 18	0.11	0.76 ^c	0.573	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

positive correlation ($r = .30$) with time agents spent on all dairy subjects. Other practice use variables (use of practice number 2-5, 8, 10 and 16-19) also tended to have positive correlation coefficients while some other practice use variables (use of practice number 1, 6, 7, 9, 12-14 and 20) tended to have negative correlation coefficients. These latter coefficients were low and failed to achieve the acceptable .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The 19 recommended practices variables accounted for over 57 percent of the variation in time agents spent on all dairy subjects. Three of these variables accounted for nearly 29 percent of this variation. Three of these variables (use of practice 3, 10 and 21) each accounted for over nine percent of the variation in time agents spent on all dairy subjects.

Briefly, this data indicated that as the number of farmers using practice number 21 (at least 75 percent of cows freshen in the fall) decreased the amount of time agents devoted to all dairy subjects increased. The reverse of this was true for the use of practice number 3, because as the number of farmers using practice number 3 (allowing at least a 60 day period from calving to breeding) increased the amount of time agents spent on all dairy subjects also increased. Further, the data in Table XXX indicate that the best predictor of time agents will spend on all dairy subjects from among the practice use variables is a combination use of practices number 3 and 21.

The null hypothesis states that time spent by agents on dairy related subjects was not significantly related to individual recommended practices. It also states that each independent variable was not significantly related (i.e. multiple correlation) to time agents spent on selected groups of dairy subjects.

Data in this section of the study indicate that there were significant relationships between individual recommended dairy practices and time agents spent on selected groups of dairy subjects. The use of practice number 21 (at least 75 percent of cows freshen in the fall) showed a significant negative relationship (.05 level) to time agents spent on all dairy subjects (Table XXX), "other" dairy subjects (Table XXIX) and on dairy housing and management subjects (Table XXVII). The use of practice number 3 (allowing at least a 60 day period from calving and breeding) showed a significant positive relationship (.05 level) to time agents spent on all dairy subjects (Table XXX) and time agents spent on dairy feeding subjects (Table XXVI). The use of practice number 19 (use of a recommended method of fly control around barns, loafing and milking areas) was significantly related to time agents devoted to dairy breeding subjects (Table XXV). The use of practice number 18 (proper preparation of cows for milking) was significantly related to the time spent by agents on dairy feeding subjects (Table XXVI). The use of practice number 13 (maintaining a 12-14 month calving interval) showed a significant negative relationship to the amount of time agents devoted to dairy record keeping subjects (Table XXVIII). These relationships support the rejection of the first portion of the

null hypothesis. The multiple correlation coefficient was significant at each step in the analysis in Tables XXV, XXVIII, XXIX and XXX. These data were sufficient to reject the portion of the hypothesis concerning the time spent by agents on breeding, record keeping, "other" and all dairy subjects.

II. FACTORS INFLUENCING CONTACTS MADE BY AGENTS IN SELECTED DAIRY SUBJECT MATTER AREAS WITH DAIRY CLIENTELE

The second part of this study relates the number of contacts made by agents with selected agent characteristics, county situation variables and use of recommended dairy practices by Grade A dairymen. The number of dairy contacts made was reported on weekly TEMIS reports and submitted to the state Extension office where the compounded TEMIS information for this study was obtained. Factors possibly influencing the number of contacts made were correlated to the actual number of contacts made in order to determine which factors would be the best predictors of contacts made. The null hypothesis for this part of the study was that there was no significant relationship (i.e. coefficient of correlation and multiple correlation) between the number of contacts agents made with dairy clientele and any of the independent variables.

Influence of the Training and Background Experience of Agents on the Total Number of Dairy Contacts Made by Agents

The first group of factors to be correlated with the number of contacts agents made with dairy clientele are the agents' background

and training factors. Data in Table XXXI show the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between six background and training characteristics of the agents in 39 counties and the number of contacts they made with dairy clientele during FY 1971-72. When taken independently, none of the agents' background and training characteristics were significantly related (.05 level) to the total number of dairy contacts made. The number of hours of undergraduate credits earned tended to show a negative correlation coefficient.

The multiple correlation coefficient was not significant at any step in the multiple regression analysis. The six background and training variables accounted for over ten percent of the variation in the number of contacts made with dairy clientele. The highest degree earned accounted for 3.5 percent of the variation which is the largest percent of the variation in the number of contacts agents made.

Based on the data in Table XXXI none of the background and training variables can be used to accurately predict the number of contacts agents will make with dairy clientele.

The null hypothesis states that the total number of dairy contacts made by agents with dairy clientele was not significantly related (i.e. coefficient of correlation and multiple correlation) to the background and training characteristics of agents. There is not sufficient evidence in Table XXXI to reject the hypothesis.

TABLE XXXI

INFLUENCE OF THE TRAINING AND BACKGROUND EXPERIENCE
OF AGENTS ON THE TOTAL NUMBER OF DAIRY CONTACTS
MADE IN FY 1971 AND FY 1972 IN 39 SELECTED
TENNESSEE COUNTIES

Background and Training of Agents	Total Number of Dairy Contacts Made			
	r	R	R ²	% Change in R ²
Highest degree earned	0.19	0.19	0.035	3.5
No. hrs. ungrad. credit dairy	-0.14	0.24	0.058	2.3
Undergraduate grade point average	0.17	0.27	0.073	1.5
No. years in Extension	0.04	0.28	0.080	0.7
No. years in present position	0.01	0.31	0.097	1.7
No. hrs. grad. credit dairy	0.05	0.32	0.102	0.5

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

Influence of Agents' Interest and Attitude on the Total Number of Dairy Contacts Made by Agents

Table XXXII shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight interest and attitude test scores of the agents in 39 counties and the number of contacts they made with dairy clientele during FY 1971-72. Of the eight interest and attitude variables five, when taken independently, were significantly related to the number of contacts agents made. A very highly significant (.001 level) positive relationship existed between the receptiveness of clientele score ($r = .60$), the importance of dairying score ($r = .50$), the self-confidence score in dairying ($r = .51$) and the interest-attitude dairy scale ($r = .59$) and the number of contacts made by agents with dairy clientele. A highly significant (.01 level) positive relationship existed between the dairy job satisfaction score ($r = .43$) and the number of contacts agents made with dairymen. The remaining variables (effectiveness rating score, multiple choice test score and decision making test score) failed to achieve the .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The eight interest and attitude variables accounted for nearly 44 percent of the variation in the number of contacts agents made with dairy clientele. The receptiveness of clientele accounted for over 36 percent of this variation.

The data in Table XXXII indicate that as agents scored higher on the receptiveness of clientele, importance of dairying, dairy job

TABLE XXXII

INFLUENCE OF AGENTS' INTEREST AND ATTITUDE TOWARD DAIRYING
AND JOB SATISFACTION AND JOB PERFORMANCE RATING SCORE
ON THE TOTAL NUMBER OF DAIRY CONTACTS MADE IN
FY 1971 AND FY 1972 IN 39 SELECTED
TENNESSEE COUNTIES

Agents' Interest and Attitude	Total Number of Dairy Contacts Made			
	r	R	R ²	% Change in R ²
Receptiveness of clientele score	0.60 ^a	0.60 ^a	0.364	36.4
Effectiveness rating score	0.26 ^d	0.62 ^b	0.382	1.8
Importance of dairying score	0.50 ^a	0.64 ^b	0.413	3.1
Score on multiple choice test	0.06	0.65 ^b	0.425	1.2
Self-confidence score in dairy	0.51 ^a	0.66 ^b	0.433	0.8
Dairy job satisfaction score	0.43 ^b	0.66 ^b	0.436	0.3
Decision making test score	0.02	0.66 ^b	0.437	0.1
Interest-attitude dairy scale	0.59 ^a	0.66 ^b	0.438	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

satisfaction, self-confidence in dairying tests and on the interest-attitude scale the number of contacts they made increased. The best interest and attitude variable for predicting the number of contacts agents will make with dairy clientele is the score made on the receptiveness of clientele test by the agents.

The null hypothesis states that the total number of contacts made by agents with dairy clientele was not significantly related (i.e. coefficient of correlation and multiple correlation) to the interest and attitude of agents. The data presented in Table XXXII show that there were significant relationships between the agents' interests and attitude and the number of contacts they made. The receptiveness of clientele score, importance of dairying score, self-confidence in dairying score the interest-attitude dairy scale and the dairy job satisfaction score were all significantly related to the number of dairy contacts made by agents. The multiple correlation was significant at each step in the analysis. Based on these data the null hypothesis is rejected.

Influence of Agents' General Dairy and Farm Knowledge on the Total Number of Dairy Contacts Made by Agents

Table XXXIII shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 12 general dairy and farm knowledge test scores of agents in 39 counties and the number of contacts they made with dairy clientele during FY 1971-72. When taken independently, none of the knowledge variables were

TABLE XXXIII

INFLUENCE OF AGENTS' GENERAL DAIRY AND FARM KNOWLEDGE
ON THE TOTAL NUMBER OF CONTACTS MADE IN FY 1971
AND FY 1972 WITH DAIRY FARMERS IN 39
SELECTED TENNESSEE COUNTIES

Agents' Knowledge	Total Number of Dairy Contact Made			
	r	R	R ²	% Change in R ²
Score on building planning test	0.22	0.22	0.050	5.0
Score on waste disposal test	-0.20	0.32	0.104	5.4
Score on Ext. communications test	0.13	0.41	0.167	6.3
Score on abnormal milk test	0.06	0.42	0.180	1.3
Score on general dairying test	0.04	0.45	0.199	1.9
Score on artificial breeding test	-0.09	0.47	0.219	2.0
Score on record keeping test	-0.04	0.48	0.232	1.3
Score on quality feed test	0.07	0.49	0.243	1.1
Score on farm planning test	0.07	0.50	0.252	0.9
Score on milking management test	-0.08	0.52	0.266	1.4
Score on nutrition test	0.08	0.52	0.271	0.5
Score on Ext. program dev. test	-0.10	0.52	0.272	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

significantly related to the number of dairy contacts agents made. The scores on the waste disposal, artificial breeding, record keeping, milking management and Extension program development tests all tended to have negative correlation coefficients. The scores on the building planning, Extension communications, abnormal milk, general dairying, quality feed, farm planning and nutrition tests had positive correlation coefficients. All of the coefficients were very low and failed to achieve the acceptable .05 level of significance.

The multiple correlation coefficient was not significant at any step in the multiple regression analysis. The 12 agent knowledge variables accounted for over 27 percent of the variation in the number of contacts made by agents with dairy clientele. Three of these independent variables accounted for almost 17 percent of this variation. Two variables (scores on the building planning test and on the waste disposal test) each accounted for five percent or over of this variation while one variable (score on the Extension communications test) accounted for over six percent of the variation in the number of dairy contacts agents made.

Based on these data none of the agent knowledge variables can be used as accurate predictors of the number of contacts agents will make with dairy clientele.

The null hypothesis stated that the total number of contacts made by agents with dairy clientele was not significantly related (i.e. coefficient of correlation and multiple correlation) to the test scores made by agents on various test on dairy and related subjects.

Data presented in Table XXXIII was not conclusive and failed to reject the null hypothesis.

Influence of Selected County Situational Factors on the Total Number of Dairy Contacts Made by Agents

Table XXXIV shows the Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between eight selected county situational factors in 39 counties and the total number of contacts agents made with dairy clientele during FY 1971-72. Of the eight county situation factors studied four, when taken independently, were significantly related to the number of contacts agents made. A very highly significant (.001 level) relationship existed between the number of Grade A dairymen in the county ($r = .68$), the percent of the county farm income from dairying ($r = .57$) and the total county income from dairying and the number of contacts agents made with dairy clientele. A highly significant (.01 level) relationship existed between the number of men Extension agents in the county ($r = .41$) and the number of contacts made by agents. The number of dairy farms in the county, the county average number of cows per Grade A herd (negatively correlated), the county average number of pounds of milk produced by Grade A dairymen and the number of Grade A dairymen using 21 recommended practices all had low correlation coefficients and did not reach the acceptable .05 level of significance.

The multiple correlation coefficient was significant at each step in the multiple regression analysis. The eight county situational

TABLE XXXIV

INFLUENCE OF SELECTED COUNTY SITUATIONAL FACTORS ON THE
AVERAGE NUMBER OF DAIRY CONTACTS MADE IN FY 1971
AND FY 1972 WITH DAIRY FARMERS IN 39 SELECTED
TENNESSEE COUNTIES

Selected County Situational Factors	Total Number of Dairy Contacts Made			
	r	R	R ²	% Change in R ²
No. of Grade A dairymen in county	0.68 ^a	0.68 ^a	0.467	46.7
No. of men Ext. agents in county	0.41 ^b	0.80 ^b	0.647	18.0
Percent county farm income from dairying	0.57 ^a	0.82 ^b	0.669	2.2
No. of dairy farms in county	0.28 ^d	0.83 ^b	0.683	1.4
Total county income from dairying	0.68 ^a	0.84 ^b	0.712	2.9
No. of cows in Grade A herds, county avg.	-0.22	0.85 ^b	0.719	0.7
Lbs. of milk per Grade A dairyman, county avg.	0.14	0.85 ^b	0.719	0.0
Percent of Grade A dairymen using 21 practices	0.06	0.85 ^b	0.719	0.0

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

factors accounted for nearly 72 percent of the variation in the number of contacts agents made with dairy clientele. Two variables accounted for nearly 65 percent of this variation. One of these variables (number of Grade A dairymen in the county) accounted for nearly 47 percent of the variation and another variable (number of men Extension agents in the county) accounted for 18 percent of the variation in the number of contacts agents made with dairy clientele.

These data indicate that as the number of Grade A dairymen in the county, the number of men Extension agents in the county, the percent of county farm income from dairying and the total county income from dairying increased the number of contacts made by agents with dairy clientele increased. The best county situational factor for predicting the number of contacts agents will make with dairy clientele is the combined use of two factors, the number of Grade A dairymen in the county and the number of men Extension agents in the county.

The null hypothesis stated that the total number of contacts made by agents with dairy clientele was not significantly related (i.e. coefficient of correlation and multiple correlation) to the county situational factors. The number of Grade A dairymen in the county, the number of men Extension agents in the county, the percent of county farm income from dairying and the total county income from dairying are all significantly related to the number of contacts made by agents. Also, the multiple correlation coefficient was significant at each step in the analysis. These data presented in Table XXXIV are sufficient to reject the null hypothesis.

Influence of the Number of Grade A Dairymen Using Selected Recommended Dairy Practices on the Number of Dairy Contacts Made by Agents

The Coefficients of Correlation (r), multiple correlation (R) and multiple determinations (R^2) between 18 recommended dairy practices used by dairymen in 39 selected Tennessee counties and the number of contacts made by agents with dairy clientele during FY 1971-72 is shown in Table XXXV. None of the selected recommended dairy practices were significantly related to the number of contacts agents made when taken independently. The use of some practices by Grade A dairymen (practice number 1, 3-5, 8, 9, 12, 13, 15-17 and 20) tended to show positive correlation coefficients with number of dairy contact agents made while the use of other practices (practice number 2, 6, 7, 10, 14 and 21) tended to show negative correlation coefficients.

The multiple correlation coefficient was not significant at any of the steps in the multiple regression analysis. The 18 practice use variables accounted for over 36 percent of the variation in the number of contacts agents made with dairy clientele.

Based on these data the percent of Grade A dairymen using selected recommended dairy practices can not be used as accurate predictors of the number of contacts that will be made by agents with dairy clientele.

The null hypothesis states that none of the individual recommended dairy practices were significantly related (i.e. coefficient of correlation and multiple correlation) to the total number of dairy contacts agents made. Data in Table XXXV was inconclusive and failed to reject the null hypothesis.

TABLE XXXV

INFLUENCE OF THE NUMBER OF DAIRYMEN USING SELECTED RECOMMENDED
DAIRY PRACTICES ON THE NUMBER OF CONTACTS MADE IN
FY 1971 AND FY 1972 BY AGENTS WITH DAIRY
FARMERS CONCERNING THE USE OF
RECOMMENDED DAIRY PRACTICES
IN 39 SELECTED TENNESSEE
COUNTIES

Selected Practices Used	Total Number of Dairy Contacts Made			
	r	R	R ²	% Change in R ²
Use of practice number 17	0.21	0.21	0.045	4.5
Use of practice number 6	-0.17	0.28	0.078	3.3
Use of practice number 5	0.18	0.33	0.108	3.0
Use of practice number 14	-0.08	0.38	0.148	4.0
Use of practice number 16	0.07	0.44	0.190	4.2
Use of practice number 7	-0.16	0.46	0.214	2.4
Use of practice number 3	0.12	0.48	0.234	2.0
Use of practice number 21	-0.08	0.49	0.244	1.0
Use of practice number 13	0.14	0.50	0.254	1.0
Use of practice number 20	0.10	0.52	0.274	2.0
Use of practice number 9	0.01	0.54	0.293	2.0
Use of practice number 2	-0.07	0.55	0.299	0.6
Use of practice number 15	0.15	0.56	0.313	1.4
Use of practice number 4	0.03	0.57	0.326	1.3
Use of practice number 1	0.08	0.59	0.346	2.0
Use of practice number 8	0.09	0.60	0.358	1.2
Use of practice number 10	-0.10	0.60	0.365	0.7
Use of practice number 12	0.05	0.60	0.366	0.1

^aSignificant at the .001 level

^bSignificant at the .01 level

^cSignificant at the .05 level

^dSignificant at the .10 level

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

I. INTRODUCTION

The Tennessee Agricultural Extension Service administrative and supervisory staffs need information from various sources in order to do their jobs properly. This study deals with various predictors of time utilized by Extension agents and predictors of contacts made by agents with dairy clientele. This information should be of help to supervisors and administrators in the area of staffing and programming to better serve the needs of the Tennessee dairy industry.

II. PURPOSES

The specific purposes of this study were to determine the relationships, if any, between various independent variables and groups of independent variables (i.e. background and training factors of agents, county situation factors, knowledge, interest and attitude of agents and clientele use of recommended dairy practices) and two major dependent variables (i.e. time spent by agents on various groups of dairy subjects and contacts made by agents with dairy clientele).

III. METHODS USED

Population and Sample

This study used two populations. The first population consisted

of Grade A dairymen in 39 Tennessee counties which had at least 40 percent of their total agricultural income from dairying and/or which had an annual income of at least three-quarters-of-a-million dollars. From each of these counties ten dairymen were picked for this study by using the Nth number sampling technique. The second population consisted of the county Extension personnel in these 39 Tennessee counties that had major responsibility for the dairy Extension work in those counties.

Dependent and Independent Variables

The dependent variables in this study were correlated with each group of independent variables and with each individual independent variable.

The dependent variables used in this study were:

1. Time agents spent on dairy breeding subjects
2. Time agents spent on dairy feeding subjects
3. Time agents spent on dairy housing and management subjects
4. Time agents spent on dairy record keeping subjects
5. Time agents spent on "other" dairy subjects
6. Time agents spent on all dairy subjects
7. Contacts agents made with all dairy clientele.

The independent variables were separated into five major groups. Each group of variables and each individual variable were correlated to each of the dependent variables. The different groups of independent variables and the listing of individual independent variables within each group are listed below.

Background and training factors of agents.

1. Number of hours of undergraduate credit in dairying
2. Undergraduate grade point average
3. Number of hours of graduate credit in dairying
4. Highest degree earned
5. Number of years in present position
6. Number of years in Extension

Interest and attitude factors of agents.

1. Interest and attitude dairy scale score
2. Effectiveness rating score
3. Importance of dairying score
4. Decision making test score
5. Score on interest in dairying
6. Dairy job satisfaction score
7. Receptiveness of clientele score
8. Total score on multiple choice test
9. Self-confidence score in dairying

Agents' knowledge factors.

1. Score on general dairying test
2. Score on building planning test
3. Score on abnormal milk test
4. Score on waste disposal test
5. Score on Extension program development test
6. Score on quality feed test
7. Score on farm planning test

8. Score on milking management test
9. Score on record keeping test
10. Score on artificial breeding test
11. Score on nutrition test
12. Score on Extension communications test.

Selected county situational factors.

1. Number of Grade A dairymen in the county
2. Percent of the county farm income from dairying
3. Pounds of milk per Grade A dairyman, county average
4. Percent of Grade A dairymen using 21 recommended dairy practices
5. Number of men Extension agents in the county
6. Number of dairy farms in the county
7. Number of cows in Grade A herds, county average
8. Total county income from dairying.

The 21 recommended dairy production practices on the University of Tennessee's "GRADE A MILK PRODUCTION PRACTICE CHECKLIST" also were used as independent variables.

Sources of Data

Data on this study consisted of information obtained from (1) Tennessee Extension Management Information System (TEMIS), (2) Extension education files, (3) Extension personnel files, (4) dairy Extension records, (5) supervisors, administrators, and dairy subject matter specialists, (6) college transcripts, (7) county Extension workers, and (8) 391 selected Grade A dairy farmers across Tennessee in 39 counties.

Methods of Analysis

A Stepwise Multiple Regression Computer Program was used to analyze data in this study. This analysis gave a Coefficient of Correlation (r) that denoted a relationship between two variables. It also gave a multiple correlation coefficient (R) which showed the relationship between a dependent variable and two or more independent variables. The coefficient of multiple determination (R^2) was used to show the variance (expressed in percent) in the dependent variable that is dependent upon, associated with or predicted by independent variables. Finally, the analysis gave the percent change in R^2 which is the variance accounted for by each individual independent variable.

IV. SUMMARY OF FINDINGS

The null hypothesis was that none of the independent variables were related (i.e. coefficient of correlation and multiple correlation) to time spent by agents or contacts made by agents with dairy clientele.

Data presented in this study reject a major portion of the null hypothesis. Presented below is a brief outline of significantly related variables that could be used as predictors of the time agents will spend or contacts they will make. Each item listed below rejects some portion of the null hypothesis.

1. The more hours of graduate credit and the fewer hours of undergraduate credit an agent had in dairying the more time he spent with dairymen on dairy breeding subjects.

2. The fewer the number of hours of undergraduate credit in dairying an agent had the more time he spent with dairymen on dairy feeding subjects.

3. The higher an agent scored on the importance of dairying test, self-confidence test in dairying, interest-attitude dairy scale and the interest in dairying test the more time he spent with dairymen on housing and management subjects.

4. The higher an agent scored on the interest-attitude dairy scale, interest in dairying test, self-confidence in dairying test, dairy job satisfaction test, importance of dairying test and the receptiveness of clientele test the more time he spent with dairymen on "other" dairy subjects.

5. The higher an agent scored on the interest-attitude dairy scale, importance of dairying test, dairy job satisfaction test, interest in dairying test and the receptiveness of clientele test the more time he spent with dairymen on all dairy subjects.

6. The more an agent scored on the building planning test the more time he spent with dairymen on dairy breeding subjects.

7. The lower the agents' scored on the abnormal milk test the more time he spent with dairymen on dairy feeding subjects.

8. The higher the agents' scored on the farm planning test the more time he spent with dairy clientele on dairy record keeping subjects.

9. The higher an agent scored on the general dairying test the more time he spent with dairymen on all dairy subjects.

10. The higher the total county income from dairying, the higher the county average pounds of milk per Grade A dairyman and the larger the number of dairy farms in the county the more time the agent spent with dairy clientele on dairy feeding subjects.

11. The higher the percentage of the total county farm income from dairying, the higher the total county income from dairying and the more Grade A dairymen in the county the more time the agent spent with dairy clientele on dairy housing and management subjects.

12. The greater the total county income from dairying the more time the agent spent with dairymen on dairy breeding subjects.

13. The more Grade A dairymen in the county, the higher the percent of the total county farm income from dairying, the higher the total county income from dairying and the more dairy farms there are in the county the more time agents spent with dairy clientele on "other" dairy subjects.

14. The more Grade A dairymen in the county, the larger the percentage of the total county farm income from dairying, the more dairy farms in the county and the larger the total county income from dairying the more time agents spent with dairy clientele on all dairy subjects.

15. As the number of dairy farmers using practice number 19 (recommended method of fly control) increased, the more time agents spent with them on dairy breeding subjects.

16. As the number of dairymen using practice number 18 (proper preparation of cows for milking) and practice number 3 (allowing 60 days from calving to breeding) increased, the more time agents spent with dairymen on dairy feeding subjects.

17. As the number of dairymen using practice number 3 (allowing 60 days from calving to breeding) increased, the more time agents spent with dairymen on all dairy subjects.

18. As the use of practice number 21 (at least 75 percent of cattle freshen in the fall) decreased among dairymen, the more agents spent with dairymen on housing and management, "other" and all dairy subjects.

19. As the number of dairymen using practice number 13 (using a 12-14 month calving interval) decreased, the more time agents spent with dairymen on dairy record keeping subjects.

20. The higher an agent scored on the receptiveness of clientele test, the importance of dairying test, the self-confidence test, the dairy job satisfaction test and the interest-attitude dairy scale the more he made contacts with dairy clientele.

21. As the number of Grade A dairymen in the county, the number of men Extension agents in the county, the percentage of the total county farm income from dairying and the total income from dairying increased in the county the more contacts agents made with dairy clientele.

V. CONCLUSIONS

Based on the findings of this study the following conclusions were made:

1. It was concluded that none of the selected background and training factors could be used to effectively predict time agents would spend on all dairy subjects. There were indications that the fewer the number of undergraduate hours and the more the graduate training the more likely agents would spend more time with dairy farmers. This idea is based on general trends presented in the data, but not based on significant relationships.

2. It was concluded that of the agents' interest and attitude factors studied the best interest and attitude factor for predicting time agents would spend with Grade A dairymen is the agents' score on the interest-attitude scale. Also, it was concluded that the agents' interest in dairying and his satisfaction with his job has a lot to do with the time he will spend with dairymen.

3. It was concluded that from among the agents' knowledge on general dairying and farming factors studied that the best indicator of time agents will spend with Grade A dairymen is the agents' score on the general dairying test.

4. It was concluded that of the county situational factors studied the best predictor of time agents will spend with Grade A dairymen is the total number of Grade A dairymen in the county. Also, county situational factors that could be used as predictors of time agents will spend with Grade A dairymen are the percent of county income from dairying and the total county income from dairying.

5. It was concluded that of the 21 selected individual recommended dairy practices that only the use of practice number 21 (at least 75 percent of cattle freshen in the fall) had any value as far as predicting time agents would spend with Grade A dairy farmers--the relation being negative.

6. It was concluded that of the variables studied only the receptiveness of clientele score and the number of Grade A dairymen in the county had any value for predicting the number of contacts an agent would make with dairymen.

Among the variables correlated to time spent and contacts made by agents it was concluded that the overall best predictor of time that agents will spend with dairymen is the number of Grade A dairymen in the county. The more dairymen there are in the county, apparently the better the agents' knowledge of dairying and the agents' attitude toward dairying also will affect the time he spends with dairymen, but the number of dairymen has the greatest influence on the time he will spend and the contacts he will make.

VI. RECOMMENDATIONS

Based upon the findings of this study it is recommended that:

1. State administrative and supervisory staff place considerable emphasis on TEMIS data printouts and county agricultural survey data in an effort to determine if agents are utilizing their time in areas that need the greatest amount of work.
2. County agents study county agricultural surveys in order to determine more closely which areas of work they should spend the most time. If they are spending too much time in unneeded areas, they should adjust their POWP's and POW's to correct their schedules of time to include more work in needed areas.

Recommendations for Further Study

1. A similar study to the present one should be conducted in Tennessee to study the relationship between similar independent variables and time spent and contacts made in each important work area of

agriculture. By having the results of such studies, then a more thorough job could be done in the assignment of agents to counties according to their work related characteristics and the county situation and the specific work assignment.

2. An in-depth study into the few factors in this study having the highest correlations and accounting for the highest percent of variation in time spent and contacts should be made. Such a study should include investigation into how and why these factors were related to time spent on dairy subjects and contacts made with dairy clientele.

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APPENDICES



APPENDIX A



Counties involved in the procurement of data for this study

Bedford
Blount
Bradley
Cannon
Cocke
Coffee
Davidson
Fayette
Franklin
Gibson
Giles
Greene
Hamblen
Hamilton
Hawkins
Henry
Jefferson
Knox
Lawrence
Lincoln
Loudon
McMinn
Macon
Maury
Monroe
Obion
Polk
Rhea
Robertson
Rutherford
Sequatchie
Smith
Sullivan
Sumner
Washington
Weakly
White
Williamson
Wilson



APPENDIX B

THE AGRICULTURAL EXTENSION SERVICE, UNIVERSITY OF TENNESSEE
Knoxville, Tennessee

GRADE A MILK PRODUCTION PRACTICE CHECKLIST

Name _____ Address _____
 County _____ Date _____ Tenure Status _____ No. _____
 Total number of Cows in Herd _____ Number Registered _____ Number Grade _____
 Herd Average _____ lbs. milk _____ lbs. fat.

RECOMMENDED PRACTICE (See explanatory guide sheet)	YES	NO
1. Was the majority of your herd bred to a bull with a plus A.I. (artificial insemination) proof last year (i.e. his artificially sired daughters' production exceeded that of their herdmates)?		
2. Were heifers bred to freshen at 24-27 months of age?		
3. Was a period of at least 60 days following calving allowed each cow prior to breeding?		
4. Was an adequate amount of stored forage provided so that each cow had all the hay and/or silage that she could consume every day?		
5. Was high quality hay and/or silage (alfalfa - bud to 1/10 bloom stage; grasses and small grains - in the boot to early bloom stage; corn for silage - in the dent stage) provided last year?		
6. Was an adequate amount (1 to 2 acres per cow) of improved pasture (e.g. Ladino and orchard grass) provided last year?		
7. Was an adequate amount of summer pasture (1/4 to 1/2 acre per cow) provided?		
8. Was an all-grain concentrate mixture (i.e. one not containing ground hay, etc.) fed to your milking herd?		
9. Was grain fed according to production with special attention to assure that high producers got enough grain (i.e. 1 to 3 or 1 to 4)?		

10. Was forage fed last year based on U. T. Forage Testing Laboratory recommendations?		
11. Were adequate milk production records kept last year (DHIA, DHIR, OS, or WADAM)?		
12. Was an average dry period of 60 days per cow provided last year?		
13. Was a 12 - 14 month calving interval maintained last year?		
14. Did you raise at least .75% of herd replacements?		
15. Were adequate herd records (heat, health, identification) maintained?		
16. Were separate feeding and loafing areas provided for milking herd?		
17. Was the milking system checked every 6 months to see that it was functioning properly as to pulsation rate and vacuum level?		
18. Was each cow prepared properly for milking (including the use of a strip cup, or its equivalent, on each quarter) before the machine was attached?		
19. Was a recommended method of fly control systematically used around barns, loafing and milking areas?		
20. Was the advice of professional dairy workers obtained with regard to management of your herd?		
21. Did at least 75% of your cows freshen in the fall last year?		

Tennessee ET&S 416L1
2/12/70



APPENDIX C

Name _____ County _____

A SCALE FOR MEASURING INTEREST IN AND ATTITUDE (related-rank order comparison) TOWARD
THE FOLLOWING WORK OR AUDIENCE AREAS*

Work or Audience Areas	Personal Interest	Feeling of Self-Confidence	Receptiveness of Clientele to Extension's Assistance	Personal Satisfaction from Job Accomplishment	Importance in County
BEEF					
SWINE					
DAIRY					
CHOPS					
HORICULTURE					
FORESTRY					
COMMUNITY & RESOURCE DEV.					
POULTRY					

Directions: Above is a list of statements about work on audience areas. Please rank each statement on each of the work or audience areas. Ranking of work or audience areas should be made in degree of from most to least (1 through 8).

*Peace, Rural Allen, "Factors Associated with County Extension Agent Dairy Educational Program Effectiveness in Selected Tennessee Counties." (Unpublished Doctorial Dissertation, University of Tennessee, June, 1972), p. 170.

APPENDIX D



TABLE XXXVI
DATA ON BACKGROUND AND TRAINING FACTORS **

Respondent Number	1*	2	3	4	5	6	7
1	M.S.	2.79	41	3	23	9	5.00
2	B.S.	1.96	4	0	24	8	4.00
3	M.S.	1.93	6	3	18	3	5.62
4	M.S.	2.49	9	0	11	11	6.25
5	M.S.	2.93	4	12	17	16	7.25
6							
7	M.S.	3.40	14	34	22	6	2.12
8	B.S.	2.78	7	0	22	16	4.88
9	B.S.	2.09	8	0	24	22	4.88
10	M.S.	2.45	46	3	21	10	10.00
11	M.S.	3.08	6	3	37	35	6.88
12	B.S.	2.07	9	0	17	8	4.00
13	M.S.	2.66	7	3	24	22	1.88
14	B.S.	2.86	31	3	35	24	18.00
15	M.S.	2.17	6	3	17	15	9.38
16	B.S.	3.27	6	0	37	37	1.62
17	M.S.	2.92	9	0	13	2	7.50
18	M.S.	2.13	6	3	17	3	4.62
19	M.S.	2.50	6	6	11	4	2.88
20	B.S.	2.54	48	0	13	6	.75
21	M.S.	2.97	6	3	25	18	3.62
22	B.S.	1.94	3	3	32	16	2.62
23	M.S.	2.83	6	3	7	3	4.50
24	B.S.	2.69	7	0	20	1	19.88
25	M.S.	1.98	9	0	5	2	5.88
26	B.S.	3.34	3	0	22	16	1.00
27	B.S.	2.06	3	3	32	28	0.00
28	M.S.	1.98	9	15	14	4	3.25
29	M.S.	2.45	29	3	15	2	3.25
30	M.S.	2.54	0	15	14	10	0.00
31	B.S.	2.19	6	0	16	6	1.75
32	B.S.	3.26	6	3	43	37	2.50
33	B.S.	2.24	6	0	37	36	3.38
34	M.S.	2.52	6	0	8	2	1.25
35	B.S.	1.97	6	0	31	14	2.12
36	M.S.	3.08	6	0	32	31	4.75

TABLE XXXVI (continued)

Respondent Number	1*	2	3	4	5	6	7
37	M.S.	3.55	3	0	29	13	5.50
38	M.S.	3.24	6	15	12	12	9.00
39	B.S.	2.05	6	0	19	15	1.00
40	B.S.	2.86	6	0	31	20	5.62
41	B.S.	2.29	6	0	18	7	20.62
42	B.S.	2.67	7	0	22	4	4.50

* Refer to key to number headings following these tables.

** Peace, Rural Allen, "Factors Associated with County Extension Agent Dairy Educational Program Effectiveness in Selected Tennessee Counties." (Unpublished Doctorial Dissertation, University of Tennessee, June, 1972), pp. 210-223.

TABLE XXXVII
DATA ON COUNTY SITUATION FACTORS**

Respondent Number	8*	9	10	11	12
1	3.6	23	553,210	16	2
2	5.8	64	861,589	31	2
3	23.4	232	2,620,955	75	2
4	4.4	56	948,370	22	3
5	14.8	153	1,186,710	47	2
6					
7	17.2	633	1,890,658	61	2
8	30.2	424	1,853,228	75	2
9	35.8	645	2,429,698	51	3
10	27.3	75	1,345,955	33	4
11	30.5	393	2,435,322	97	2
12	11.4	302	1,574,368	47	3
13	41.5	608	3,081,133	124	3
14	15.3	410	811,232	32	3
15	23.9	518	1,862,672	78	2
16	17.8	364	1,605,630	46	3
17	26.9	486	2,296,978	74	2
18	18.9	369	1,373,290	61	2
19	17.5	254	1,177,019	48	2
20	28.6	4	256,298	14	2
21	29.2	88	1,421,265	99	2
22	18.0	37	697,878	32	3
23	26.4	14	248,506	20	2
24	48.1	264	2,773,207	140	2
25	34.8	122	1,795,461	97	2
26	27.3	256	1,285,961	45	2
27	22.2	22	317,222	23	2
28	19.4	466	916,879	8	2
29	17.5	456	1,100,409	20	2
30	29.5	223	608,439	15	2
31	22.3	160	916,754	41	2
32	22.0	241	758,096	15	1
33	26.1	221	1,540,061	70	2
34	25.3	274	963,636	36	2
35	21.5	547	1,398,089	33	3
36	21.9	68	902,266	51	2
37	25.6	83	1,662,467	70	3

TABLE XXXVII (continued)

Respondent Number	8*	9	10	11	12
38	36.4	1563	5,842,213	139	3
39	31.4	69	1,192,781	59	2
40	26.0	293	1,406,888	46	3
41	33.5	700	3,086,803	104	2
42	15.1	394	833,478	29	2

* Refer to key to number headings following these tables.

** Peace, Rural Allen, "Factors Associated with County Extension Agent Dairy Educational Program Effectiveness in Selected Tennessee Counties." (Unpublished Doctorial Dissertation, University of Tennessee, June, 1972), pp. 210-223.

TABLE XXXVIII
DATA ON INTEREST AND ATTITUDE FACTORS**

Respondent Number	13*	13a	13b	13c	13d	13e
1	25	5	5	5	5	5
2	28	5	5	6	7	5
3	28	6	5	5	5	7
4	20	3	4	4	5	4
5	33	6	5	8	8	6
6						
7	29	5	6	5	6	7
8	35	7	7	8	6	7
9	39	8	8	8	8	7
10	38	8	8	8	6	8
11	31	6	5	7	6	7
12	33	6	7	6	8	6
13	40	8	8	8	8	8
14	34	7	7	6	7	7
15	34	7	6	7	7	7
16	30	5	5	6	7	7
17	25	4	3	5	6	7
18	27	6	7	3	6	5
19	31	6	6	7	6	6
20	33	7	7	6	6	7
21	35	8	6	7	7	7
22	34	6	6	8	7	7
23	21	4	2	4	4	7
24	39	8	8	8	7	8
25	38	8	7	8	7	8
26	34	7	7	6	7	7
27	28	6	6	4	5	7
28	34	7	7	6	7	7
29	26	5	6	5	5	5
30	29	6	5	5	6	7
31	30	5	5	5	8	7
32	33	8	6	7	7	5
33	33	7	6	7	6	7
34	21	5	6	5	5	6
35	33	8	7	7	5	6
36	19	5	5	2	3	4
37	39	7	8	8	8	8

TABLE XXXVIII (continued)

Respondent Number	13*	13a	13b	13c	13d	13e
38	40	8	8	8	8	8
39	32	5	6	7	6	8
40	30	6	6	6	6	6
41	40	8	8	8	8	8
42	15	3	4	3	4	1

* Refer to key to number headings following these tables.

** Peace, Rural Allen, "Factors Associated with County Extension Agent Dairy Educational Program Effectiveness in Selected Tennessee Counties." (Unpublished Doctorial Dissertation, University of Tennessee, June 1972), pp. 210-223.

TABLE XXXIX

SCORES ON MULTIPLE-CHOICE TEST**

Respondent Number	15*	16	17	18	19	20	21	22	23	24	25	26	27
1	1	6	1	7	14	4	0	6	7	7	5	4	60
2	6	6	5	5	15	5	2	10	10	6	7	4	81
3	13	9	6	5	11	8	6	10	10	5	7	8	99
4	3	6	7	4	11	3	1	8	7	5	6	0	62
5	7	8	7	5	16	9	6	8	11	3	7	3	90
6													
7	8	4	9	5	12	3	2	10	7	8	4	6	72
8	12	3	10	7	11	4	1	7	7	9	4	7	85
9	10	8	5	7	10	3	2	10	7	2	6	4	73
10	11	4	3	3	10	6	2	7	6	5	3	1	60
11	7	4	2	2	10	1	6	7	7	6	7	4	62
12	8	4	5	4	10	2	4	10	7	3	3	3	62
13	8	4	5	4	12	4	1	8	5	6	5	3	66
14	6	7	1	4	13	4	2	11	6	4	6	4	67
15	7	8	3	3	12	7	0	8	7	8	3	5	69
16	10	5	3	4	11	0	4	3	8	4	7	6	64
17	9	5	7	4	11	7	3	6	6	7	5	6	74
18	8	5	5	1	8	3	4	7	11	4	4	3	67
19	7	5	4	4	11	-1	1	7	7	6	6	8	66
20	8	3	8	5	12	2	4	6	8	5	8	4	73
21	8	7	8	7	12	3	7	10	11	6	8	6	94
22	4	1	1	4	7	3	1	7	4	3	6	3	44
23	8	6	5	4	10	7	1	6	7	8	4	3	69
24	8	4	6	7	10	3	0	6	6	4	6	6	65
25	10	5	7	8	12	4	2	11	12	7	8	7	93
26	10	4	7	2	11	7	5	10	8	6	7	1	80

TABLE XXXIX (continued)

Respondent Number	15*	16	17	18	19	20	21	22	23	24	25	26	27
27	4	3	0	4	8	2	4	4	11	4	6	4	54
28	7	5	8	5	12	0	4	10	10	8	8	5	82
29	10	8	11	4	13	3	4	7	8	4	7	4	83
30	11	8	5	4	10	4	1	10	5	5	7	4	74
31	7	4	5	5	14	-1	1	11	8	6	6	7	73
32	8	7	8	3	15	0	1	8	7	3	7	4	71
33	5	4	4	8	7	3	1	8	7	4	7	5	64
34	10	6	5	5	8	5	0	11	10	9	7	5	80
35	2	4	4	2	10	4	4	7	8	5	6	4	59
36	6	8	4	3	12	2	1	8	4	6	3	3	60
37	10	5	4	4	14	6	1	11	7	4	8	3	76
38	4	9	4	4	15	3	5	11	8	5	7	5	81
39	10	4	3	3	10	-2	2	10	5	5	4	1	54
40	10	8	9	7	11	4	1	11	7	8	7	4	86
41	11	9	6	5	11	3	2	10	8	6	6	6	84
42	7	8	4	4	7	4	5	8	8	5	7	5	73

* Refer to key to number headings following these tables.

** Peace, Rural Allen, "Factors Associated with County Extension Agent Dairy Educational Program Effectiveness in Selected Tennessee Counties." (Unpublished Doctorial Dissertation, University of Tennessee, June, 1972), pp. 210-223.

TABLE XL
DATA ON WORK RELATED FACTORS

Respondent Number	28a*	28b	28c	29a	29b	29c	30	31	32	33	34
1	9	3	12	68	104	172	14	168	95	263	36
2	14	3	17	165	308	473	28	197	70	267	26
3	18	8	26	164	389	553	21	130	48	178	27
4	20	10	30	244	151	395	13	192	68	260	26
5	17	6	23	123	154	277	12	192	69	262	26
6											
7	29	4	33	251	343	594	18	139	91	230	40
8	18	15	33	129	1392	1521	46	161	101	262	38
9	23	12	36	166	554	720	20	168	57	225	25
10	13	4	16	149	962	1111	14	157	99	256	39
11	30	25	55	684	1779	2463	45	161	74	234	32
12	36	22	56	362	365	727	13	193	50	243	21
13	72	14	86	2343	2489	4831	56	206	55	261	21
14	18	23	39	123	483	596	15	180	86	266	32
15	21	19	41	231	685	922	22	156	76	232	33
16	21	2	23	168	217	385	17	141	109	250	44
17	20	16	36	185	963	1148	32	188	79	267	30
18	30	4	34	689	393	1082	32	143	22	164	13
19	35	2	37	472	209	681	18	207	52	260	20
20	12	2	14	326	20	346	25	207	50	257	19
21	93	3	95	2278	392	2670	28	211	59	270	22
22	37	5	41	1544	156	1700	43	154	96	250	39
23	14	6	20	200	99	299	15	163	111	274	41
24	121	11	132	2749	1270	4019	30	240	102	340	30
25	66	15	81	1318	890	2208	29	270	104	374	28
26	12	1	13	108	186	294	15	104	150	253	59

TABLE XL (continued)

Respondent Number	28a*	28b	28c	29a	29b	29c	30	31	32	33	34
27	32	2	34	175	62	232	7	218	51	268	19
28	26	3	29	228	115	343	12	165	99	264	37
29	8	3	12	52	292	544	28	202	58	260	22
30	32	11	43	307	771	1075	21	235	64	299	21
31	39	4	42	272	144	416	10	242	32	274	12
32	18	3	21	169	97	266	12	231	51	288	18
33	19	3	22	251	62	313	14	214	79	293	27
34	19	13	31	380	500	780	25	194	86	281	31
35	39	7	46	274	380	654	19	187	68	255	27
36	16	6	22	428	117	545	25	104	144	248	58
37	10	6	15	104	832	936	63	121	102	224	46
38	70	15	85	17	1950	3662	43	163	104	267	34
39	29	2	31	174	89	263	9	181	66	247	27
40	45	11	56	742	840	1582	29	170	93	264	35
41	77	22	99	6	499	1015	10	186	68	254	27
42	20	2	22	226	107	333	15	172	100	272	37

* Refer to key to number headings following these tables.

** Peace, Rural Allen, "Factors Associated with County Extension Agent Dairy Educational Program Effectiveness in Selected Tennessee Counties." (Unpublished Doctorial Dissertation, University of Tennessee, June, 1972), pp. 210-223.

KEY TO NUMBER HEADINGS ON DATA SHEET IN
TABLES XXXVI, XXXVII, XXXVIII, XXXIX, XL**

Table XXXVI Background and Training Factors

1. Highest degree earned
2. Undergraduate grade point average
3. Number of hours undergraduate credits in dairying
4. Number of hours of graduate credits in dairying
5. Number of years of experience in Extension
6. Number of years of experience in present position
7. Number of man-days dairy specialists spent in county

Table XXXVII County Situation Factors

8. Percent of farm income in county where assigned received from dairying
9. Number of dairy farms in the county
10. Income from dairying
11. Number of Grade A farms in county
12. Number of Men Extension Agents assigned to the county

Table XXXVIII Interest and Attitude Factors

13. Total score on interest and attitude scale
- 13a. Agent's personal interest in dairying
- 13b. Self-confidence of agent in his dairy subject-matter competency
- 13c. Agent perception of the ease of working with dairymen or receptiveness of dairymen to his assistance

13d. Job satisfaction derived from his feeling of accomplishment
in dairy program.

13e. Agent perception of the relative importance of dairying in
the county

Table XXXIX Score on Multiple-Choice Test

15. Nutrition and feeding
16. Dairy records and record keeping
17. Artificial breeding, sire selection and genetics
18. Farm planning and management principles
19. Production of quality feed
20. Abnormal milk
21. Milking management
22. Buildings and farmstead planning
23. Waste disposal
24. Extension Dairy Program Development
25. Extension communication
26. General dairying
27. Total multiple-choice test score

Table XL Work Related Factors

- 28a. Man-days agents devoted to individual contact methods with
dairy clientele
- 28b. Man-days agents devoted to group and mass media methods with
dairy clientele
- 28c. Total man-days agents devoted to dairy educational work
- 29a. Number of individual contacts made by agents with dairy
clientele

- 29b. Number of group contacts made by agents with dairy clientele
- 29c. Total number of contacts made with dairy clientele
- 30. Number of contacts per man-days devoted to dairy work
- 31. Total man-days worked by agent out-of-office
- 32. Total man-days worked by agent in-office
- 33. Total man-days worked by agent
- 34. Percent in-office is of total time worked by agent

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TABLE XLI

EFFECTIVENESS RATING SCORES OF AGENTS, ON CONDUCTING THE DAIRY
EDUCATIONAL PROGRAM IN SELECTED TENNESSEE COUNTIES BY
DISTRICT SUPERVISORS, ASSOCIATE SUPERVISORS, AND
DAIRY SPECIALISTS**

Respondent Number	Super- visors	Associate Supervisors	Dairy Spec. A	Dairy Spec. B	Dairy Spec. C	Dairy Spec. D	Dairy Spec. E
1	119	141	134		116	122	
2	114	137	73		88	116	
3	129	138	97		139	123	
4	110	141	120		95	116	
5	125	144	148	128	151	127	
6							
7	104	101	66	110	61	114	106
8	133	122	128	104	112	118	135
9	124	148	91	101	66		114
10	126	107	149	131	115	118	128
11	105	81	69	89	70	111	119
12	159	131	151	134	144	123	134
13	117	133	88	93	107	117	112
14	99	125	125		91	118	113
15	122	119	93		136	118	124
16	115	87	92	93	62	116	111
17	127	135	94	99	94	118	117
18	103	53	94	88	96		
19	137	143	122	117	97		127
20	118	106	97	90	73		
21	97	86	99	106	113	117	
22	63	89	72	95	69		
23	120	119	118	112	108		
24	151	146	153	135	150	123	
25	134	153	113	109	142		
26	151	150	129	138	118		130
27	54	62	57	75	65		
28	119	116	95	114	92		127
29	127	123	143	93	93		128
30	133	144	146	143	83		131
31	105	109	60	60	89		117
32	83	95	66	90	78		116
33	106	89	61	59	76		
34	135	142	127	90	111		
35	116	103	110	118	117		

TABLE XLI (continued)

Respondent Number	Super- visors	Associate Supervisors	Dairy Spec. A	Dairy Spec. B	Dairy Spec. C	Dairy Spec. D	Dairy Spec. E
36	110	84	62	74	114		
37	140	147	126	140	149		
38	152	148	152	150	155	121	
39	103	94	83	70	90		
40	149	145	152	121	146	118	
41	133	122	145	122	148	122	
42	137	140	152	148	133	118	

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TABLE XLII

MINIMUM, MEAN, MAXIMUM AND RANGE OF THE FACTORS INCLUDED IN THE STUDY**

Selected Factor	Minimum	Mean	Maximum	Range
Highest degree earned	1.0	1.54	2.0	1.0
Undergraduate grade point average	1.9	2.58	3.6	1.7
No. hrs. undergrad. credit hrs. dairy	0.0	10.20	48.0	48.0
No. hrs. grad. credit dairy	0.0	3.39	34.0	34.0
No. yrs. Extension	5.0	21.63	43.0	38.0
No. yrs. present position	1.0	13.51	37.0	36.0
No. man-days spec. in county	0.0	5.24	21.0	21.0
Percent county farm income dairy	4.0	23.76	48.0	44.0
No. dairy farms in county	14.0	293.31	999.0	985.0
No. dollars (1000) dairy	249.0	1508.07	5842.0	5593.0
No. Grade A dairy farms in county	8.0	54.71	140.0	132.0
No. men Ext. agents in county	1.0	2.29	3.0	2.0
Score on interest in dairy	3.0	6.22	8.0	5.0
Self confidence	2.0	6.07	8.0	6.0
Receptiveness	2.0	6.15	8.0	6.0
Dairy job satisfaction	3.0	6.32	8.0	5.0
Importance of dairying	1.0	8.00	7.0	6.0
Total interest and attitude scale	15.0	31.12	40.0	25.0
Effectiveness rating score	63.0	113.05	146.0	83.0
Total multiple-choice score	44.0	72.15	99.0	55.0
Score--nutrition section	1.0	7.76	13.0	12.0
Score--record keeping	1.0	5.88	9.0	8.0
Score--artificial breeding & genetics	0.0	5.22	11.0	11.0
Score--farm planning	1.0	4.56	8.0	7.0
Score--quality feed	7.0	11.20	16.0	9.0
Score--abnormal milk	0.0	3.51	9.0	9.0
Score--milking management	0.0	2.54	7.0	7.0
Score--building planning	3.0	8.39	11.0	8.0
Score--waste disposal	4.0	7.63	12.0	8.0
Score--Ext. program development	2.0	5.46	9.0	7.0
Score--Ext. communications	3.0	5.98	8.0	5.0
Score--general dairying	0.0	4.34	8.0	8.0
Man-days devoted to dairy work ind.	8.0	31.05	99.0	91.0
Man-days devoted to dairy work other	1.0	9.05	33.0	32.0
Man-days devoted to dairy work total	12.0	40.00	132.0	120.0
No. of individual contacts--dairy	52.0	508.51	2749.0	2697.0
No. of group contacts--dairy	20.0	522.20	2089.0	2069.0
No. of total contacts--dairy	172.0	1028.02	4031.0	3859.0
No. of contacts per man-day	7.0	23.27	63.0	56.0

TABLE XLII (continued)

Selected Factor	Minimum	Mean	Maximum	Range
Man-days out-of-office	104.0	180.80	270.0	166.0
Man-days in-office	22.0	78.95	150.0	128.0
Man-days total	164.0	259.90	374.0	210.0
Percent in-office time is of total	12.0	30.37	59.0	47.0

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VITA

Sherwin Dean Northcutt was born in Hopkinsville, Kentucky, on July 9, 1946. He attended elementary school at Coalmont, Tennessee, and was graduated from Grundy County High School in June of 1964. That same June he entered the University of Tennessee.

In September 1966 he enlisted in the U.S. Army. On August 10, 1967, he was commissioned from The Infantry School at Fort Benning, Georgia as a Second Lieutenant. During his four years in the Army he served at various stations in the United States, Panama and in Viet Nam with the 3rd Battalion, 12th Infantry of the 4th Infantry Division. He separated from the Army with the rank of Captain in August, 1970.

After separation from service he returned to the University of Tennessee in September, 1970. He obtained a Bachelor of Science Degree in Forestry Management in June, 1972. After graduation he received a graduate assistantship at the University of Tennessee Agricultural Extension Education Department. He earned a Master of Science Degree in Agriculture majoring in Agricultural Extension Education in August, 1973. He is a member of the Xi Sigma Pi honorary Forestry fraternity.

He is married to the former Sharon Sue Ellis of Columbia, Tennessee.