Womens Farm/Ranch task participation: Time, Importance, and Factors Influencing Time Spent
by Cecilia Dawn Gallagher

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Home Economics.
Montana State University

Abstract:
Gallatin County farm/ranch couples were surveyed to determine differences between wives' and husbands' perceptions of hours of farm/ranch task participation by the wives by use of paired t tests of means for each of nine categories of farm/ranch work. Differences between wives' and husbands' perceptions of importance of the tasks performed by the wives were tested by use of the sign test. Further, analysis of variance tests were employed for each of the nine task categories to determine if there was a difference between the mean number of hours of farm/ranch work performed by women as classified by these variables: age and number of their children; the education levels, ages and hours of employment of both spouses; the wives' prior farm/ranch experience and task preference; presence of wives' names on land documents; and size of the farm/ranch operation.

There was no statistically significant difference between the means of the wives' and husbands' perceptions of hours of the wives' farm/ranch task participation for any of the nine task categories. In 6 of the 9 categories, of those couples in which both persons reported time spent by the wife at task performance, the number of men reporting a higher importance rating for those tasks than did their wives was significantly greater than the number of women who reported a higher rating than did their husbands. No significant differences were found among the mean number of hours spent by women at farm/ranch work as classified by the age and number of their children, wives' employment, and presence of wives' names on land documents. Some categories of farm tasks did appear to be affected by education, age, husbands' employment, wives' prior farm/ranch experience, wives' task preference, or size of the operation.

In this study, wives and husbands appeared to have similar perceptions about the amount of time women spend at farm/ranch work. Men reported higher importance ratings for that work than did their wives more often than women reported higher ratings than did their husbands. Of the nine task categories, record keeping was the only one in which the mean number of hours spent by the wives was not significantly affected by any of the variables. Task preference significantly affected the mean number of hours spent at more of the 9 categories than did any other variable.

WOMEN'S FARM/RANCH TASK PARTICIPATION: TIME, IMPORTANCE, AND FACTORS INFLUENCING TIME SPENT

by

Cecilia Dawn Gallagher

A thesis submitted in partial fulfillment
of the requirements for the degree

of

Master of Science

in

Home Economics

MONTANA STATE UNIVERSITY
Bozeman, Montana

July 1987

APPROVAL

of a thesis submitted by

Cecilia Dawn Gallagher

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citation, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

7/23/87
Date

Margaret Briggs
Chairperson, Graduate Committee

Approved for the Major Department

7/23/87
Date

Margaret Briggs
Head, Major Department

Approved for the College of Graduate Studies

7-31-87
Date

Graduate Dean

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a master's degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library. Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of source is made.

Requests for permission for extended quotation from or reproduction of this thesis in whole or in parts may be granted by the copyright holder.

Signature Celia Gallagher

Date July 23, 1987

ACKNOWLEDGMENTS

A special thanks to members of my committee, Dr. Margaret Briggs, chair, Dr. Eric Strohmeyer, and Dr. Jeff Larson. Dr. Briggs is greatly appreciated for her support, willing assistance, and accommodation of the process, as is Dr. Strohmeyer for his capable assistance with statistics and his support of the students of MSU. The input of Dr. Ramona Marotz-Baden during the time she served on my committee is also appreciated. Terry Wolfe, Marsha Goetting, Dr. Al Suvak, and Dale Olsen all generously offered assistance in numerous ways. Deborah Cunningham Haynes assisted me in learning the word processing system and in the final printing, as well as offering friendship and moral support throughout. The idea for this project evolved through our discussions about the topic of women's work. I also appreciate the technical assistance and quality printing provided by Debby and Computerland. I am very grateful to Dr. Larry Ellerbruch for his time and help running the statistical tests and for teaching this novice the mechanics of computers and the statistics program. Finally, a sincere thanks to my family and friends for their moral support, especially to my wonderful spouse for the many ways he endured and supported me in this endeavor.

TABLE OF CONTENTS

TABLE OF CONTENTS - continued

LIST OF TABLES

LIST OF TABLES - continued

LIST OF TABLES - continued

ABSTRACT

Gallatin County farm/ranch couples were surveyed to determine differences between wives' and husbands' perceptions of hours of farm/ranch task participation by the wives by use of paired *t* tests of means for each of nine categories of farm/ranch work. Differences between wives' and husbands' perceptions of importance of the tasks performed by the wives were tested by use of the sign test. Further, analysis of variance tests were employed for each of the nine task categories to determine if there was a difference between the mean number of hours of farm/ranch work performed by women as classified by these variables: age and number of their children; the education levels, ages and hours of employment of both spouses; the wives' prior farm/ranch experience and task preference; presence of wives' names on land documents; and size of the farm/ranch operation.

There was no statistically significant difference between the means of the wives' and husbands' perceptions of hours of the wives' farm/ranch task participation for any of the nine task categories. In 6 of the 9 categories, of those couples in which both persons reported time spent by the wife at task performance, the number of men reporting a higher importance rating for those tasks than did their wives was significantly greater than the number of women who reported a higher rating than did their husbands. No significant differences were found among the mean number of hours spent by women at farm/ranch work as classified by the age and number of their children, wives' employment, and presence of wives' names on land documents. Some categories of farm tasks did appear to be affected by education, age, husbands' employment, wives' prior farm/ranch experience, wives' task preference, or size of the operation.

In this study, wives and husbands appeared to have similar perceptions about the amount of time women spend at farm/ranch work. Men reported higher importance ratings for that work than did their wives more often than women reported higher ratings than did their husbands. Of the nine task categories, record keeping was the only one in which the mean number of hours spent by the wives was not significantly affected by any of the variables. Task preference significantly affected the mean number of hours spent at more of the 9 categories than did any other variable.

INTRODUCTION

The American farmer: the vision in the mind's eye is likely a man in a pair of overalls, with a weathered face shaded from the sun by a hat, a symbol of strength and independence. It is quite likely that the vision did not include a woman; the term farmer does not often connote woman.

However, according to census data, there are about half a million women engaged in farm work (Pearson, 1980), and there are many more women not classified by census requirements as employed in agriculture. These women fill roles from manual farm laborer to farm partner to owner/operator. In spite of sizable numbers and tremendous contributions, women are, as Hill (1981) notes, the invisible farmers of America. A number of factors, which will be discussed later, contribute to this invisibility.

According to the research literature, these invisible farm/ranch women fill a variety of roles and perform a variety of tasks. They are homemakers, mothers, community volunteers, members in organizations, wage-earners in the labor market, and farm workers.

Research indicates that their work week may be as high as 99-113 hours (Boulding, 1980).

If farm women's work is so unrecognized in society, in spite of an apparent extensive workload, is the same true within their individual families? Do the spouses of farm women recognize the extent of their wives' participation in the farm/ranch operation? There is a limited amount of research which suggests that farm husbands may slightly underestimate their wives' contributions (Boulding, 1980; International Harvester Farm Forum cited in Boulding, 1980; Jones and Rosenfeld, 1981). It can be argued that a farm/ranch woman's contribution to the family and farm, and the perception by the family members of that contribution, affects the interactions within the family. Underestimating the contribution of a member may lead to the undervaluing of that member. Given the magnitude of the range of tasks farm/ranch women perform and the time required to perform them, bringing attention to these women's contributions can be important for their legal, psychic, emotional, and economic benefit.

Farm/ranch women are very often unpaid for their farm/ranch work. They are responsible for household work and child care for which they also, in the majority of cases, receive no wage. Rosenfeld (1984) points out

that women in our society contribute a disproportionate amount of unpaid labor.

This unpaid female labor force, including farm and non-farm women, is often at a serious financial disadvantage. Credit may be difficult for them to obtain. They may have no personal social security coverage and, until recently, limited access to individual retirement plans. Scholl (1983b) gives an excellent summary of unemployment and disability coverage. As of 1976, unemployment coverage was extended to most agricultural workers, but few states cover all agricultural workers. Persons working for relatives are generally ineligible for unemployment coverage. In Montana, coverage was not available for family farm workers as of that year.

Farm/ranch women may also have no disability coverage (Scholl, 1983b). They may face the loss of jointly accumulated assets on divorce or death of a spouse. On January 1, 1982, the unlimited marital deduction became effective which allows the estate of one spouse to go to the surviving spouse without taxation. But in certain states, those spouses may still have to prove ownership and involvement in the farming operation in order to avoid state estate taxes (Scholl, 1983b).

Not only are farm/ranch women affected by these financial circumstances, but their families may be as

well. How would a farm/ranch woman's family replace her service were she to become disabled without disability insurance? Certainly any children would be affected by her financial circumstances in the case of her divorce or widowhood.

It is apparent that farm/ranch women, and thus their families, are very often in financially tenuous positions due in large part to the fact that their significant contributions to their families and farms or ranches go unacknowledged and especially monetarily unacknowledged. As Boulding (1980) points out, the legal and economic status and social recognition of the contributions that farm/ranch women make are nowhere near what these contributions warrant. Further study to document their work and delineate factors affecting that work is in order.

Statement of Purpose

There are many roles and tasks that deserve attention in addressing the issue of the "invisible" (Hill, 1981) women farmers. The purpose of this study was to examine the husbands' and wives' perceptions of women's time spent at farm/ranch tasks, and to determine if there was a difference in their perceptions. As noted in the literature review, Jones and Rosenfeld (1981) found that there was a tendency for men to

slightly underestimate their wives' farm/ranch task participation.

This study also sought to examine husbands' and wives' perceptions of the importance of the wives' farm/ranch tasks to the success of the farm business, and to determine if there was a difference in those perceptions. Hill (1981) believes that time and task inventories are not sufficient measures of the extent of farm/ranch women's contributions. To get at the extent of these contributions, she recommended obtaining information about the importance of these tasks to the farm/ranch operation. Information from this study demonstrated not only how much work these women did, but also gave some indication of how critical their contribution was to the successful operation of their family farm businesses.

Finally, the study sought to determine if there was a relationship between the women's farm/ranch task participation (defined by the wives' estimates of their time spent at those tasks) and a variety of other variables including age and number of children, age of both spouses, education level of both spouses, off-farm employment of both spouses, the wife's prior farm/ranch experience, her preference for farm/ranch work, the presence of the wife's name on land documents, and the size of the operation. Other studies, which will be

discussed in the literature review, have suggested that these factors influence wives' participation in farm/ranch tasks. Time estimates for a variety of tasks were used as measures of participation because, regardless of the number of tasks a woman performs, there is the same finite number of hours each day available for that participation. Jones and Rosenfeld (1981) note the logic of assuming that the more farm/ranch tasks a person does, the more time he or she will be likely to spend at farm work. They recommended that work involvement measures contain a time dimension as well as the diversity dimension used in their study.

Hypotheses

The following hypotheses were tested by this study.

1. Wives and husbands will have different perceptions of the extent of the wives' farm/ranch task participation, with the wives' perceptions being higher.
2. Wives' and husbands' perceptions of the importance of the wives' farm/ranch task contributions are independent of gender.
3. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by the age of their children: no

children, children 12 years and younger, children 13 years and older, and children in both groups.

4. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by the number of their children: 0 children living at home, 1 child, 2 children, 3 children, or 4 children.

5. a. There is no difference between the mean number of hours of farm/ranch work performed by women as classified by their level of education: having completed grade school through having completed high school, and having some college through having a graduate degree.

   b. There is no difference between the mean number of hours of farm/ranch work performed by women as classified by their husbands' level of education: having completed grade school through having completed high school, and having some college through having a graduate degree.

6. a. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by their age group: 18-35 years, 36-50 years, 51-65 years, and over 65 years.

   b. There is no difference among the mean number of hours of farm/ranch work performed by women as

classified by their husbands' age group: 18-35 years, 36-50 years, 51-65 years, and over 65 years.

7. a. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by their weekly hours of off-farm employment: 0 hours, 1-15 hours, 16-39 hours, and 40 or more hours.

   b. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by their husbands' weekly hours of off-farm employment: 0 hours, 1-15 hours, 16-39 hours, and 40 or more hours.

8. There is no difference between the mean number of hours of farm/ranch work performed by women as classified by prior farm/ranch experience: having lived on a farm or ranch while growing up or not having lived on a farm or ranch while growing up.

9. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by their task preference: preference for household work including child care, preference for farm/ranch work, or equal preference for both.

10. There is no difference between the mean number of hours of farm/ranch work performed by women as classified by the presence or absence of the

woman's name on land documents (including documents for leased land).

11. There is no difference among the mean number of hours of farm/ranch work performed by women as classified by the size of their farm/ranch operations: 20-160 acres, 161-320 acres, 321-640 acres, 641-1280 acres, 1281-2560 acres, 2561-3840 acres, and over 3840 acres.

For hypotheses 3-11, the women's estimates of their time spent at task performance defined their farm/ranch task participation. A person performing a particular task is probably more aware of the time it takes to do it than one who may or may not be around to see it done and possibly has never performed the tasks in question. Following this logic, since women were the ones actually performing the tasks in question, their estimates were probably a closer reflection of reality than were their husbands' estimates.

Specific Objectives

In order to obtain information to test the hypotheses and fulfill the purpose of the study, the specific objectives were:

1. To obtain estimates, from both wives and husbands, of the wife's participation in farm/ranch tasks.

2. To compare the estimates of the wives' farm/ranch task participation that have been obtained from the couples.

3. To obtain perceptions from both wives and husbands, of the importance of the wife's farm/ranch tasks to the success of the family farm business.

4. To compare the wives' and husbands' perceptions of the importance of the wife's farm/ranch tasks.

5. To determine if the wives' farm/ranch task participation is affected by these variables: age of children, number of children, age of both spouses, education level of both spouses, off-farm employment of both spouses, the wife's prior farm/ranch experience, her preference for farm/ranch work, the presence of the wife's name on land documents, and the size of the operation.

Need for the Study

There are a number of studies on what farm/ranch women do in the various roles they fill. From these, one can derive a number of areas on farm women's farm/ranch work that need further research.

First, very little has been done on men's perceptions of women's contributions to farm/ranch labor and on what factors affect those perceptions. Two recent studies (International Harvester Farm Forum, 1975, cited

in Boulding, 1980; Jones and Rosenfeld, 1981) provide some evidence that men slightly underestimate women's contribution. Since the evidence is not conclusive, more study is in order.

Second, a number of studies address the importance of including the context in which farm women work in studies of these women. Farm families are very often closely intertwined with the farm business (Elbert, 1981; Hill, 1981), so that each functions in and around the other. Rosenfeld (1984) and Hedlund and Berkowitz (1978) also note that there is not a distinct line between farm work and family. Colman (1981) and Hill (1981) agree that the most appropriate analysis of family and farm would consider the two separate systems, the family and the farm, acknowledging that they are integrated in different ways and to varying degrees in different situations. Though Flora (1981) also discusses the importance of considering the degree to which the production unit and the household unit "interpenetrate", she suggests a different perspective. She notes that farm women are not necessarily part of the family farm. Therefore, the household and how it fits into the farm business should be the unit of analysis.

Often, extended family members such as parents, siblings, and in-laws are involved in the farm business. This kinship network plays a large part in the lives of

some farm women and in the business arrangements (Hill, 1981) and the operation of the farm (Colman, 1981).

This inseparable interaction of many farm women with their families, kinship structures, and the agricultural production unit complicates research on farm women's work. One solution to this problem is the use of a theoretical perspective for analysis which would accommodate inclusion of these interactions. After a review of a variety of family theories, Social Choice Theory emerged as one which would allow comprehensive consideration of the variety of factors involved in farm women's farm/ranch work and the context within which they work. This theory will be discussed later in the paper.

Finally, though there are a number of articles on farm women, research on the farm/ranch work of Montana women is scarce. The American Farm Women Survey (Jones and Rosenfeld, 1981) was a national survey and would have included, but not been specific to, Montana farm and ranch families. Only one study has been done specifically on Montana farm/ranch women's work (Goetting, Fogel, and Howland, 1982). This study had a non-random sample of only five women. Though the study provided a fairly complete listing of tasks that women perform, it was not designed to provide documentation of women's task performance. Since Montana has a large

agricultural base, more information on the work of farm families would be useful. The information in this study, though specific to Gallatin County, contributes to a slowly increasing body of knowledge on an important shrinking population, farm families and farm women specifically.

Definitions

1. Farm/ranch operation - In order to exclude hobby farms and include families who consider the family farm lifestyle as a primary goal, but who need off-farm employment for cash flow (and/or desire self-actualization), the definition of farm/ranch operation will include the following conditions:

a. The family farm will conform to the definition outlined by the Montana Women Involved in Farm Economics organization; i.e. it is a "form of commercial enterprise in which the management decisions are made by a family engaged in the production of food or fiber for profit, which is intended to provide the major source of income and capital for investment." This definition does not specify which members of the family make the decision nor the process in which they make them. Thus, it allows for the variety of nuclear and extended family arrangements that may exist in farm/ranch families.

b. The operator(s) primarily identify themselves as farmers, or the family as a farm family, although they

may have another occupation to provide cash for the farming operation and/or family, or to provide self-actualization.

c. The family lives in the rural area on some part of the farm or ranch.

2. Farm/ranch task - Any work done related to the production of agricultural goods on the farm/ranch operation. There may be some overlap of production for commercial use and production for family use.

3. Farm/ranch woman - Any rural woman living on a farm or ranch operation, qualified by Definition 1. Hereafter farm/ranch woman may be shortened to farm woman for the sake of brevity.

Limitations

1. Time estimates of various tasks are limited by the accuracy of the person's recall of previous events.

2. Surveys were completed during the spring. Because of the immediacy of the tasks pressing in the spring, women may have been predisposed to more accurate recall of tasks that occur in the spring than tasks that occur during the other seasons.

3. There is a possibility that women may have inadvertently neglected to record some tasks. Boulding (1980) notes that some tasks seem so basic to farm women that they may forget to mention them in their reports of the

tasks that they perform. Consequently, the time spent and the tasks performed may be underestimated by the women.

Assumptions

1. It is assumed that a person who actually performs a task has more knowledge about the magnitude of the task and about his or her own personal involvement in the task than an observer would have. Therefore, because farm/ranch women are performing the tasks being inventoried, it is assumed that their self-reports will more nearly reflect reality than the reports of their spouses, who may or may not observe their wives at farm work.

2. Social Choice theory includes some basic assumptions about human behavior which have been synthesized by F. Ivan Nye (1982) from the initial work on this theory; those pertinent to this study are summarized below.

   a. Human beings and their behaviors are rational, though the information and predictions upon which behavior is based are not always accurate.

   b. Individuals and groups make choices that will minimize costs and maximize rewards (i.e. yield the greatest profit.)

c. In order to obtain rewards, people must undergo costs. People realize that their choices of costs and rewards affect others who are members of groups to which they belong and may alter choices in order to alter affects of those choices on other group members.

d. Humans initiate action as well as react to circumstances.

e. The norm of reciprocity applies to behavior between individuals and to behavior between individuals and groups. (This notion is commonly known as the Golden Rule.)

f. Behavior will not be repeated unless it has been rewarded, unless not repeating that behavior will be too costly to the individual.

g. Getting what one feels one deserves results in satisfaction, getting less than what one feels one deserves results in anger and getting more than one feels one deserves results in guilt.

h. Individuals feel rewarded when they inflict costs on someone they perceive as having hurt them, although the "costs of receiving punishment usually are greater than the rewards of inflicting it" (Nye, 1982, p. 23).

i. Though generally most people in a particular society will agree whether a specific thing is

considered a cost or a reward, individuals will assign different worth to relationships, objects, experiences, etc.

j. The more someone has of a particular thing, "the less additional units of it are worth" (Nye, 1982, p. 23).

The previous pages have provided a basis for some understanding of the background of this project. It would be useful for the reader to have information about other studies that deal with the work of farm/ranch women. Following is a review of the literature providing such information about the roles, responsibilities and work of farm/ranch women.

LITERATURE REVIEW

Research Issues

Several authors (Colman, 1981; Elbert, 1981; Flora, 1981; Hill, 1981) have addressed the challenge of doing research on farm women. From them, one learns of the paucity of research: there is an array of topics dealing with farm women that needs to be addressed. They offer a variety of philosophical perspectives within which to view these topics and they discuss the lack of satisfactory research techniques. The following paragraphs review their comments in more detail.

Hill (1981) reviews several areas in which research on farm women is needed and addresses some research methodology problems. According to her, it is important to consider the context within which farm women work. They are often bound up within family and kinship structures and those structures are enmeshed with the family farm business. Also at issue is the "politics" of defining and valuing of women's work. Hill notes that some tasks performed by farm women are not defined as "real work" by some agricultural economists, who have historically acknowledged only men's labor; women's work has been dismissed as unimportant.

The question arises: How much work must women do to be counted as farmers? There are limits in methodology in both time-use studies and survey research. Hill suggests assessing the importance of a task as well as the time spent, to get a more accurate idea of the extent of a woman's contribution.

Hill's work evoked a variety of responses from other authors. Colman's (1981) commentary on Hill's (1981) article concurs with Hill's idea that the farm and the farm family are two separate systems that are integrated in various ways and to varying degrees, depending on the situation. He suggests that these two systems, the farm and the farm family, are an appropriate context for evaluating the effects of off-farm work on family and farm and task participation.

Elbert (1981) and Hill (1981) seem to agree on the complexity of the context in which farm women work, though there is a philosophical difference in values underlying their comments. Elbert sees Hill's stance as making liberation or women's rights the issue; freedom from kinship restraints would mean liberation. He argues that this model of liberation based on autonomy is not applicable to farm women in their lives of integrated family and farm systems, for they have family ties which link them to the production unit.

(One of those ties is intergenerational transfer of that production unit.)

Flora (1981) suggests that the issue of rights for women which Hill (1981) addresses may be a class issue, and that the household should be the unit of analysis. Women have a vested interest in maintaining their class status and will adapt to defend it. Flora's belief is that researchers should study how changes in farm women's work are related to changes in structures in agriculture, which she also sees as a class issue, as well as how work changes are related to family life cycle issues.

Each of the authors mentioned thus far has discussed limitations of and directions for research on farm/ranch women. This thesis project, though limited in size and scope, attempts to include some suggestions of the aforementioned authors.

This thesis project is unable to collect any long-term data on changes in farm women's work on the farm, or how kinship or outside structures have affected these changes. However, it does address the issue of the extent of women's involvement in farm work by assessing the importance of the tasks performed by the women, as perceived by both men and women. It also attempts to partially address the issue of family context by documenting spouses' perceptions of wives' farm/ranch

task participation, perceptions of importance of those tasks, comparing husbands' and wives' perceptions, and placing those perceptions within a viable theoretical framework which can explain family interactions.

The theoretical perspective of Social Choice theory allows interpretation of the social nature of the family structures within which farm women live and work. It provides the theoretical focus for the interpretation of the results of this research.

Theoretical Perspective

The concepts of costs, rewards, outcomes and alternatives are the basis for a variety of social behavior theories including Learning theory, Behavior Modification, Behaviorism, Exchange theory, Cost-Benefit Analysis, Rational Choice theory, and Equity theory, among others (Nye, 1982). Social Choice expands and incorporates ideas in these theories. It has its basis in the ideas that "...humans avoid costly behavior and seek rewarding statuses, relationships, interaction, and feeling states to the end that their profits are maximized" (Nye, 1982, p. 14). People will incur some costs in obtaining rewards and will have to forego some rewards to avoid some costs.

Rewards are satisfactions, experiences, and social interactions one enjoys. Costs are statuses, feelings

and interactions one dislikes. They include punishments, which are things one dislikes, and rewards foregone. Sources of costs and rewards include social approval, autonomy, ambiguity, security, money, value, opinion and agreement, and equality. A profit is a situation where rewards outweigh the costs.

People have individual standards they set for evaluating their costs and rewards which are called comparison levels. They evaluate their present situation in light of alternatives presently available to them (level of alternatives). The theory assumes a norm of reciprocity, meaning that people help people who help them, and that they do not injure those who help them.

Nye (1982) offers a set of basic theoretical propositions. Briefly, individuals choose the alternative offering the most profit. If costs are equal, they will choose the alternative with the greatest reward. If the rewards are equal, they choose the alternative with the fewest costs. If the immediate outcomes are equal, they choose the alternative with the best long-term outcome. And if the long-term outcomes are equal, they will choose the alternative with the best immediate outcome. If other costs and rewards are equal, they will choose the alternative which provides the most social approval, autonomy, security, and value and opinion agreement. They choose relationships with

persons they consider equals, and alternatives offering the least ambiguity in terms of future outcomes and events. They will also choose alternatives that have the least monetary expense and the most financial reward.

These propositions are not limited to two-person interactions. They are generalized to primary groups, such as the family, and to society in general as well. Individuals perceive their rewards and costs as affecting and being affected by the group and will choose alternatives which consider this interaction. Important for this study is the idea of rewards from family members. Levinger (in Nye, 1982) notes that the list of reward categories compiled by Foa and Foa (1974) are money, goods, information, status, services, and love.

Social Choice theory is flexible and general. Because it is useful in explaining behavior in groups, it is useful in interpreting the data from this thesis within the context of the farm family and more specifically, the farm couple.

The Invisible Women Farmers

Hill (1981) says that farm women want to be recognized, respected, and remunerated. Goetting et al (1982) and Jones and Rosenfeld (1981) also found this desire for recognition for their work in the farm women that they interviewed. Joyce and Leadley (cited in Nickols, 1980) found that from a conference as early as 1926, as well as another in 1976, there emerged a desire for recognition of themselves as capable people who contribute to their families and their communities. Recognition and respect are forms of social approval. Remuneration is a monetary reward. It is logical to assume that if women farmers are invisible, as Hill (1981) says, then they will not receive rewards for their efforts. Farm women's expression of their desires for recognition, respect and remuneration indicates that they do feel they are being insufficiently rewarded.

A number of articles which will be discussed in this chapter indicate that women do perform many tasks and fulfill many roles in their families and their family farm businesses. If this is true, a question arises as to the factors which contribute to farm and ranch women's continued invisibility. An examination of the research literature suggests a number of those factors.

Even though women are often totally involved in their farm businesses, they may choose not to claim the title of farmer for themselves. The American Farm Women national survey (Jones and Rosenfeld, 1981) found that on tax returns, less than 3% of their sample listed themselves as farmers, and 5% called themselves farm wives. Nickols (1980) and Boulding (1980) both found that their samples did not claim the title of farmer. Several explanations are plausible. Boulding (1980) found that the women in her sample did not want to be called farmers. Some felt like it was being called a man. Others felt that they didn't "deserve" to be called a farmer.

Tax structure may also affect how farm/ranch women label themselves. Scholl (1983b) gives an excellent explanation of the economic effects of farm women changing their reported occupational status to reflect farm employment. Those effects depend largely upon the status of the farm business, that is, whether it is a corporation, partnership, or a sole proprietorship. In each case, the woman's occupation can have direct impact on the FICA and state and federal tax obligations of the farm unit, and in some states, unemployment and disability obligations. For example, in some cases, women may avoid calling themselves employees of the operation or operators to avoid mandatory FICA withdrawals (Jones

and Rosenfeld, 1981). Since the farm woman's well-being is so integrated with the well-being of the farm business, it may be of immediate benefit to herself, her family, and the farm business to list herself in the occupational category that would be least expense for the farm business. Also, if a woman is employed at paid off-farm labor, she may feel legally obliged to report the off-farm employment as her occupation (Jones and Rosenfeld, 1981); tax forms do not usually allow space for reporting more than one occupation.

Hill (1981) addresses a subtle political issue which is another factor contributing to farm/ranch women's invisibility. Men who live on farms are assumed to be farmers. Women must prove their labor contributions before they call themselves farmers. She claims that agricultural economists do not count women's work as "real" work. In the context of changing gender roles and possible accompanying shifts in the balance of power within families, this political perspective is worth noting.

Finally, government data collection methods often fail to accurately account for farm/ranch women's labor contributions. The Bureau of Census requires 15 hours or more of unpaid farm work within the week the Census is taken (Boulding, 1980; Huffman, 1976; Scholl, 1983b). Farm work requirements vary from week to week so that

hours worked during the week the data is collected may be below the required 15 hours (Scholl, 1983b). This notion seems to be supported by Huffman (1976), who notes that the mid-March Census falls at a slack time on most farms. Therefore, the Census data may not be an accurate reflection of how many women really would qualify as unpaid family labor. Further, if a worker works less than 15 hours, (s)he is classified as not being in the labor force (Scholl, 1983b). Both the Bureau of Labor Statistics and the Bureau of Census classify workers by the occupation in which the most hours are worked. Consequently, farm women who may work both on and off the farm are often counted only for their off-farm labor.

The Bureau of Census also collects data for the Census of Agriculture for the purpose of obtaining information about farm units (Scholl, 1983b). Data is collected on only the one person who does most of the managing for the operation (Kalbacher, 1983; Scholl, 1983b). This is usually the husband (Kalbacher, 1983). Persons sharing equally are not identified (Kalbacher, 1983; Scholl, 1983b). Thus, women's contributions go unrecognized in government reports. The previous paragraphs note some specific factors which influence the underestimation of women's farm/ranch labor. The next section will identify the roles and responsibilit-

ies of farm women in their work that have been reported by other research.

Farm Women's Roles and Responsibilities

Literature on farm women examines the work responsibilities of farm women. Those responsibilities can be segregated into 4 basic roles. This section will discuss those 4 basic roles and the various tasks which are a part of each.

The first role is that of farm women within the family household (Bentley and Sachs, 1984; Boulding, 1980; Gasson, 1981; Hill, 1981; Nickols, 1980; Pearson, 1980; Scholl, 1982). It is generally agreed that most farm women are responsible for maintenance of their families' households. They raise, purchase, prepare and preserve food for their families; bear and raise children; clean; wash; and manage households. Boulding (1980) adapts figures from the May 1979 Farm Wife News to indicate that farm women average 58 hours per week at domestic tasks.

A second role these women fill is that of off-farm or non-farm wage earner (Bentley and Sachs, 1984; Bokemire et al, cited in Ross, 1982; Boulding, 1980; Fassinger and Schwarzweller cited in Ross, 1982; Hill, 1981; Jones and Rosenfeld, 1981;Maret and Copp, 1982; Nickols, 1980; Scholl, 1983a; Sweet (1972) cited in

Ross, 1982). According to Hill (1981), 60% of farm families get at least half of their income from off-farm sources. Farms need a cash flow to operate; often off-farm employment provides that cash flow. As Hill (1981) notes, that income may be necessary for protecting the net worth of the operation. The Bureau of the Census (in Boulding, 1980) classifies about 40% of farm women as being active in the labor force. Of that 40%, roughly one-third are counted as employed in agriculture. The remainder are employed in non-agricultural work. Though not all rural women are farm women, these figures can provide some sense of how many women in rural areas and on farms are employed off-farm. Two factors Boulding (1980) notes that affect a farm wife's off-farm employment are the farm's cash needs and the availability of work.

Farm women also bring in cash from enterprises that are not part of the main agricultural production but may be done on the farm. It might be selling garden vegetables or eggs. In any case, these enterprises are the sources of the "egg and butter money" that farm women very often earn (Boulding, 1980).

A third role that farm/ranch women fill is what Boulding (1980) describes as participation in social and civic activities (Gasson, 1981; Hill, 1981; Jones and Rosenfeld, 1980). They are active in voluntary com-

munity organizations and activities, as well as agricultural organizations, and work for churches, schools, and youth and women's groups. They participate in activities with friends and extended family members. Boulding (1980) says that the farm wife in these families is the chief organizer for these social affairs.

A fourth role many farm women fill is that of farm worker. They perform a variety of tasks, from support activities like cooking for hired help, to field work to management tasks (Boulding, 1980; Elbert, 1981; Gasson , 1981; Goetting et al, 1982; Hill, 1981; Jones and Rosenfeld, 1981; Nickols, 1980; Pearson, 1979, 1980; Sawer, 1973). Not all farm/ranch women participate in farm/ranch tasks, and those who do, do not necessarily participate in all of them. For example, the Jones and Rosenfeld (1981) study found that only 5% of their sample did all the tasks they had listed, and 2% did none. Seventeen percent of the women did at least 80% of the tasks listed.

From this review of the literature on farm/ranch women as farm workers, a logical categorization of the farm/ranch tasks that women perform emerges. Following is an inventory of those general categories synthesized from the literature.

1.) Record-keeping
2.) Running errands
3.) Fieldwork
4.) Animal care
5.) Building and equipment care and maintenance
6.) Decision-making
7.) Marketing
8.) Making major purchases
9.) Supervision, coordination and management
10.) Cooking for farm workers
11.) Obtaining information regarding farming and business
12.) Intergenerational transfer, including reproduction of children, teaching skills and passing on the farm unit.

Several researchers have found that farm women spend considerable time at farm work. Scholl (1982) discusses 2 studies. One in 1926 in Oregon showed that about 18% of the homemaker's time was spent at farmwork. A second study in 1936 in New York stated that 11% of a homemaker's time was spent at farm work. 1964 census data (cited in Huffman, 1976) indicates that farm wives who do farm work average 19.9 hours per week, with a range of 17 hours in January and March to 22.3 hours in July. Gasson (1981) cites a 1976 study which indicates that farmers on full-time holdings received assistance

from their wives averaging 17 hours per week. Boulding (1980) says that the 1964 census data is too low, and claims that women average 41 hours per week at farm work. In summer, the workday may be 18-20 hours. Nickols (1980) says that 16 to 17 hour workdays, which include farm work, are not unusual.

In describing the roles of farm women, one must keep in mind the concept of degree of involvement. Though most farm women are responsible for the domestic sphere, each one is involved to a different degree in the other 3 roles. Degree of involvement extends across a continuum from being uninvolved to total involvement.

Women seem to identify or label themselves on the basis of their degree of involvement in their various roles. Often it is the balance between the domestic sphere and their farm/ranch task participation which decides their self-definition. Reseachers also attempt to find labels for groups of farm women based on their role involvement (Boulding, 1980; Gasson, 1981; Jones and Rosenfeld, 1981; Nickols, 1980; Pearson, 1979, 1980).

From the literature one finds four basic labels based on role participation. A farm housewife (Boulding, 1980; Gasson, 1981) or farm homemaker (Pearson, 1979) is responsible for the household but not involved with the farm business. A farm wife (Boulding, 1980;

Gasson, 1981; Nickols. 1980), or agricultural helper (Pearson, 1979), sees herself as involved in the farm business with her spouse as well as being responsible for the household. Farm partners (Nickols, 1980), or agricultural partners (Pearson, 1979), consider themselves to be very involved, often equally with their spouses. They feel that they and their spouses are running the farm business as equal team members. Finally, there is a group of women farmers (Boulding, 1980), or independent producers (Pearson, 1979), who run the agricultural operation themselves. It may be due to being single or widowed or because the husband works off the farm (Boulding, 1980). It seems reasonable to assume that it could also be due to personal choice.

Jones and Rosenfeld (1981) suggest that placing qualitative labels, such as those listed above, is inappropriate. They say it is too cut-and-dried and creates a false impression of reality. Farm operatorship involves varying degrees of task participation and may be a family function.

This study was concerned with the degree of women's farm/ranch task involvement. A variety of factors affect each farm woman's participation in various roles. The following section will discuss some of the factors affecting farm women's role as farm workers.

Factors Affecting Women's Participation in Farm Work

Children may affect women's farm work participation. Women may tend to do more farm work when their children are young (Jones and Rosenfeld, 1981, cited in School, 1982). Several explanations are plausible. As children get older they may tend to take over farm tasks that were previously done by the wife. A woman's labor on the farm may be needed more in the early stages of the farm business, which is also likely to be the time when children are young.

In the Jones and Rosenfeld (1981) study, a larger number of children decreased the range of farm tasks a woman did. A number of children under age 6 decreased her participation in fieldwork without machinery, marketing and purchasing.

Age also affects women's participation in farm work (Jones and Rosenfeld, 1981). As their age increases, women's participation decreases. This may be due to decreased physical strength, because children have matured and taken over some of the farm work, or because the woman's labor input is needed in early stages of economic development of the family and family farm (Scholl, 1982).

Off-farm employment also affects women's participation. If a husband is employed, Jones and Rosenfeld (1981) found that the wife is more likely to be involved

in decision-making. If a husband is employed, the wife does more tasks (Jones and Rosenfeld, 1981; Scholl, 1982). If the wife is employed, she may be involved less in farm tasks. (Jones and Rosenfeld, 1981).

Education is another factor affecting women's farm work. Jones and Rosenfeld (1981) found that a woman with less than a high school education was less likely to participate in farm tasks than women with more than a high school education. This finding was based on percentage of tasks done at least occasionally.

Many farm women have spent much of their lives on farms. In the Jones and Rosenfeld (1981) study, women had spent an average of two-thirds of their lives on farms. The greater the proportion of time spent on a farm, the wider was the range of tasks those women performed. Nickols (1980) also reports that most of the women in her sample had grown up on farms, and had acquired many of their farm skills with that experience.

Task preference may play a role in women's participation in farm/ranch tasks. Jones and Rosenfeld (1981) and Nickols (1980) suggest that some women prefer farm work and that preference may affect their participation in such tasks. Pearson (1979, 1980) found that preference for farm work seems to be associated with a woman's self-image and her idea of appropriate role behavior. Women who disliked farm work held more traditional ideas

about roles and were frustrated that they sometimes had to be involved in what they considered masculine (farm) work. On the other hand, women who liked farm work had less traditional attitudes about appropriate role behavior and shared more values with their male counterparts.

Legal relationship to the land may affect farm task participation. Jones and Rosenfeld (1981) found that women who have legal involvement with the land, especially those who owned land, are more likely to participate in farm work.

Finally, the size of the operation also plays a role in women's farm/ranch task participation (including decision-making). Women are less likely to be involved in farm work on larger operations (Bentley and Sachs, 1984; Gasson, 1981; Jones and Rosenfeld, 1981.)

Farm Men's Perceptions of Women's Task Participation

As mentioned earlier, there is some evidence suggesting that men tend to underestimate the extent of their wives' involvement in farm/ranch task performance. Jones and Rosenfeld (1981) found that men said that their wives did 3% fewer tasks regularly (26%) than the wives' self-reports indicated (29%). The spouses showed agreement in tasks done occasionally; 51% was reported by men compared to 50% reported by women. Sixteen

to 25% of the wives said that they did more than what the husbands reported, but 10% to 20% of the husbands said that their wives did more than what their wives' self-reports indicated. Of the couples in the sample, 60% to 70% agreed on the wife's task involvement. Hence, this study provides little evidence that men underestimate women's work. The measure of involvement used in the survey was the number of tasks performed and whether the tasks were performed regularly, occasionally or never. It included no direct time measure.

Several authors discuss the 1975 International Harvester Survey (International Harvester Farm Forum, 1975, cited in Boulding, 1980; Nickols, 1980; Pearson, 1980). In that survey, when asked if the women could manage the farm alone or with help, 57% of the men responded affirmatively, compared to an 81% affirmative response by the women. Women rated their own contributions, responsibility, and involvement outside the traditional (domestic) sphere higher than did men. Seventy percent of the men, compared to 86% of the women, felt that farmwife involvement had increased from a generation ago. Fifteen percent of the men, compared to 38% of the women, said that farm tasks took half or more of the woman's time. Twenty-seven percent of the women, compared to 43% of the men, reported that farm tasks took less than 10% of the women's time.

The evidence that husbands underestimate the involvement of their wives in farm work is slight and inconclusive. This study shed further light on the topic.

METHODOLOGY

The Sample

For the purpose of this study to identify women's farm/ranch task participation as perceived by both women and their husbands, a systematic random sample of farm/ranch families was drawn from a state Agricultural Stabilization and Conservation Service (ASCS) list of farm operators in Gallatin County. Telephone numbers were located in the telephone books of the area and from the information operator. Those agricultural production unit operators for whom a telephone number could not be located were eliminated from the sample. Each family in the sample was called and the study was explained to them, including the confidentiality and anonymity of their survey responses. They were asked if they were willing to participate in the study and then were asked questions to determine if they fit the definition of farm family that was used for the study. Families were contacted until 200 couples had agreed to participate.

The Survey

A survey instrument was sent separately to each spouse in each farm couple (see Appendices A and B.)

The instrument was designed to elicit from both wives and husbands demographic information, opinions, estimates of the wife's farm/ranch task participation, and perceptions of the importance of the tasks performed. An inventory of tasks synthesized from the literature was listed along with an importance scale for each task. Participants were also asked to respond to questions about certain factors that a literature review had revealed to influence women's participation in farm/ranch work: number and age of children, age, off-farm employment, education, farm/ranch experience, task preference, legal relationship to the land, and size of the operation. Women's surveys were slightly longer than the men's, as women were asked about time spent at household and civic activities. Though the survey instrument is original, it incorporates ideas from the instruments of Goetting et al (1982) and Jones and Rosenfeld (1981). The instrument was pretested on farm couples in Montana. Suggested changes on format and content were made to refine it. Efforts to create a valid instrument included use of ideas of other authors in the field, pretesting the instrument on farm couples, and assistance during design of the instrument by a researcher on farm families.

A cover letter explaining the survey and giving directions for completing it was also included (see

Appendix C). The reverse side of the cover letter contained a consent form indicating that respondents were willing to be involved in the study and understood its intent (see Appendix D). They were requested to sign the form and return it with the completed instrument in the self-addressed stamped envelope they had also received.

Instruments were sent out between April 13, 1985 and May 14, 1985 as the contacts were made with the families. If people had not responded within approximately 10 days to 2 weeks of the mailing date of their surveys, follow-up cards were sent, asking if they needed another copy and reminding them to return their completed surveys. If they still had not responded within approximately 2 weeks of the follow-up card, they were telephoned to ask if they were still willing to participate, and told that the surveys needed to be in by the first week of June. Surveys were returned between April 16, 1985 and June 7, 1985. Three hundred and thirty-seven surveys (84.25%) were returned, from 160 couples and 17 individuals. Of those, there were 125 useable completed pairs (paired by couple) of surveys, or a 62.5% (useable) return rate.

Descriptive Information

An analysis of the descriptive information about the sample of Gallatin County farm and ranch couples

revealed the following information. The women's age ranged from 22 to 72 years of age, with a mean of 43.9 years. For men the range was 24 to 75 years of age, with a mean of 47.16 years. Thirty-five women reported having no children. Twenty families had 1 child living at home, 36 had 2 children living at home, 18 had 3, and 9 had 4. Seven women did not respond to the question.

Education levels for both genders varied from having completed grade school through having a graduate degree. Employment status also varied. Sixty-six women (52.8%) and 77 men (61.6%) did not work at paid employment off the farm/ranch operation. Twenty-two women (17.6%) and 9 men (7.2%) worked off the farm for 1-15 hours per week, while 9 women (7.2%) and 2 men (1.6%) worked 1-15 hours per week at a home business that was not the primary agricultural business. Nine women (7.2%) and 7 men (5.6%) worked 16-39 hours per week off the farm, and 7 women (5.6%) and 13 men (10.4%) spent 40 hours or more per week at off-farm employment. Of those working in a home business that was not the primary agricultural business, 3 women (2.4%) and 5 men (4%) spent 16-39 hours per week, while 2 men (1.6%) (and no women) spent 40 or more hours per week. Nine women (7.2%) and 10 men (8%) did not report employment status. A total of 50 women (40%) and 38 men (30.4%) worked at least part-time at either off-farm employment or at a

home business that was not the primary agricultural business. The primary reason for paid employment for both genders was needing money for family expenses. Other reasons included needing money for farm expenses, enjoyment of the social aspect of work, self-fulfillment, and other. Enjoyment of the social aspect of work and self-fulfillment were reported by women more often than by men. Twenty-five women, compared to 12 men, reported enjoyment of the social aspect of work as a reason for employment. Twenty-seven women, compared to 13 men, reported self-fulfillment as a reason for employment.

Of the 125 women, 71 (56.8%) reported that they had lived on a farm or ranch while growing up. The length of time that those women reported they had lived on a farm or ranch ranged from 2 years to 72 years, with a median of 35 years and mean of 37.169 years.

Nineteen women (15.2%) expressed a preference for farm or ranch work. Forty-five women (36%) preferred housework including child care, and 58 women (46.4%) preferred both equally. Three women (2.4%) did not respond to the question.

Eighty-seven of the women (69.6%) reported the presence of their names on the ownership documents for their farms or ranches, while 34 (27.2%) reported that

their names were not on those documents. Four women (3.2%) did not respond to the question.

Men's and women's reports of the size of their operations were not always consistent within couples. According to women, size of the farm/ranch operations ranged from 20 to 160 acres through over 3840 acres, with almost half of the operations (62 cases or 49.6%) being from 321-1280 acres. Men reported the same size range, with 66 cases (52.8%) being from 321-1280 acres.

In the majority of couples, both the women and the men reported that the wife held the main responsibility for running the household (110 or 88% and 108 or 86.4% respectively) and also for child care (69 or 55.2% of both women and men). However, 3 women (2.4%) and 4 men (3.2%) said that the husband was mainly responsible for running the household, while 14 women (11.2%) and 17 men (13.6%) reported that both shared equally. In no case was the husband reported to be mainly responsible for child care, but 14 women (11.2%) and 17 men (13.6%) reported that both shared equally. Fourteen women (11.2%) and 9 men (7.2%) reported an "other" response to child care responsibility.

Women were asked to estimate the number of hours per week and weeks per year they spent at housework (including child care). These estimates were multiplied to give a total number of hours per year. These totals

varied greatly. The range of hours per week was from 1 to 168 (which is the total number of hours per week), with a mean of 44.75 hours. The totals ranged from 52 hours per year to 8736 hours per year with a mean of 2305 hours. This mean includes 6 women's reports of 8736 hours per year, which is the total number of hours in a year. These latter estimates probably included 24-hour-a-day child care.

One hundred and four men (83.2%) and 104 women (83.2%) reported that the husband was mainly responsible for running the farm or ranch, while one man (.8%) said the wife was. Fourteen men (11.2%) and 17 women (13.6%) said that both husband and wife shared the responsibility equally, while 4 men (3.2%) and 3 women (2.4%) reported an "other" response. Two men (1.6%) and 1 woman (.8%) did not respond. One hundred and eighteen men (94.4%) and only 40 women (32%) considered themselves to be the main operator or one of the main operators of the farm or ranch. One hundred and fifteen men (92%) and 71 women (56.8%) believed that they could run their operations alone (using hired help if necessary) if something happened to their spouses.

Of the 125 women, 100 (80%) participated in volunteer, civic, school, church, social or agricultural organizations. They spent from 1 to 20 hours per week at from 1 to over 10 activities.

The Analyses

The intent of the survey was to gather data to test the hypotheses listed in Chapter 1. In the design of the survey instrument, tasks were categorized into these groups: field work, animal chores, equipment, building and property maintenance, errands, record keeping, coordination and management, cooking for hired help, and other. Examination of the results revealed that many specific tasks within these categories had too small a sample on which to run statistical analyses. Therefore, responses were grouped by total number of hours per task category, i.e. total hours of field work, total hours of animal chores, etc. before completing the statistical analyses. The importance ratings were averaged for the tasks reported for each category, and statistics were run using the average importance ratings, i.e. using the average importance rating for field work, for animal chores, etc.

Hypothesis 1 states that wives and husbands will have different perceptions of the extent ot the wives' farm/ranch task participation, with the wives' perceptions being higher. The independent variable was gender. The dependent variable, perception of the wives' farm/ranch task participation, was measured by time estimates rather than number of tasks performed because, regardless of the number of tasks a woman

performs, there is still the same finite number of hours each day available for that participation. A paired t test (one-tailed) was used on the couples' estimates of the wife's time spent at each specific group of farm/ranch tasks to determine any significant differences between mean scores.

Hypothesis 2 states that wives' and husbands' perceptions of the importance of the wives' farm/ranch task contribution are independent of gender. The independent variable was gender. The dependent variable was the perception of the importance of the tasks performed by the wives. The sign test was used to determine significance in the differences in wives' and husbands' perceptions of importance for each of the specific categories of tasks. Because of small sample size for specific tasks, the importance scores were averaged for each task category, and those averages were used in the statistical analysis. It is important to note that participants were asked for an importance rating only for tasks for which they had reported hours of participation by the wife.

Hypothesis 3 through Hypothesis 11 tested the effect of specific factors which the literature suggested impact the participation of farm women in farm work. Those factors included age, age and number of children, off-farm employment, education, farm/ranch

experience, task preference, legal relationship to the land, and the size of the operation.

These hypotheses were tested using one-way analysis of variance. If the F ratio was significant ($p \leq .05$), the Scheffe test was used to determine which groups had significantly different means. The dependent variable in each case was the number of hours spent by women at task performance in each of the 9 categories of tasks. The women's reports of their time, as opposed to the men's reports of the women's time, were used as the measure of hours. The assumption was made that a person performing a particular task is probably more aware of the time it takes to do it than one who may or may not be around to see that task done and possibly has never performed the task in question.

Hypothesis 3 states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by the age of their children: no children, children 12 years and younger, children 13 years and older, and children in both groups. The independent variable was the age of the children.

Hypothesis 4 states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by the number of their children: 0 children living at home, 1 child, 2

children, 3 children or 4 children. The independent variable was the number of children.

Hypothesis 5a states that there is no difference between the mean number of hours of farm/ranch work performed by women as classified by their level of education: having completed grade school through having completed high school, and having some college through having a graduate degree. The independent variable was wives'education. Hypothesis 5b states that there is no difference between the mean number of hours of farm/ranch work performed by women as classified by their husbands' level of education: having completed grade school through having completed high school, and having some college through having a graduate degree. The independent variable was husbands' education.

Hypothesis 6a states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by their age group: 18-35 years, 36-50 years, 51-65 years, and over 65 years. The independent variable was the woman's age. Hypothesis 6b states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by their husbands' age group: 18-35 years, 36-50 years, 51-65 years and over 65 years. The independent variable was husband's age.

Hypothesis 7a states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by their weekly hours of off-farm employment: 0 hours, 1-15 hours, 16-39 hours, and 40 or more hours. The independent variable was the woman's hours at off-farm employment. Hypothesis 7b states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by their husbands' weekly hours of off-farm employment: 0 hours, 1-15 hours, 16-39 hours, and 40 or more hours. The independent variable was the husband's hours at off-farm employment.

Hypothesis 8 states that there is no difference between the mean number of hours of farm/ranch work performed by women as classified by prior farm/ranch experience: having lived on a farm or ranch while growing up or not having lived on a farm or ranch while growing up. The independent variable was prior farm/ranch experience.

Hypothesis 9 states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by their task preference: preference for household work including child care, preference for farm/ranch work, or equal preference for both. The independent variable was task preference.

Hypothesis 10 states that there is no difference between the mean number of hours of farm/ranch work performed by women as classified by the presence or absence of the woman's name on land documents (including documents for leased land). The independent variable was the presence or absence of the woman's name on land documents.

Hypothesis 11 states that there is no difference among the mean number of hours of farm/ranch work performed by women as classified by the size of their farm/ranch operations: 20-160 acres, 161-320 acres, 321-640 acres, 641-1280 acres, 1281-2560 acres, 2561-3840 acres and over 3840 acres. The independent variable was the size of the operation.

The results of the statistical analyses are reported in the following chapter.

RESULTS

Questionnaires were sent to participating farm couples in Gallatin County between April 13, 1985 and May 14, 1985. The respondents returned their surveys between April 16, 1985 and June 7, 1985, with most arriving in late April and throughout May. Three hundred and thirty-seven surveys were returned, from 160 couples and 17 individuals. Of those, there were 125 useable completed paired (by couple) surveys.

Paired t-test Results for Hypothesis 1

Paired *t* tests (one-tailed) were used to test Hypothesis 1 that reads as follows: Wives and husbands will have different perceptions of the extent of the wives' farm/ranch task participation, with the wives' perceptions being higher. A separate *t* test was run for each separate farm task category: field work, animal chores, equipment, building and property maintenance, errands, record keeping, coordination and management, cooking for hired help, and other. Because the paired *t* test is a test of difference between means, all 125 cases (including those in which neither spouse reported time spent by the woman at the particular task) were used. Those cases in which neither spouse reported any

hours spent at the task by the woman would have a difference of 0 hours, indicating agreement in the perceptions of the woman and her husband. In order to understand the direction of the signs, one should note that women's hours were subtracted from men's hours in the analysis. The accepted level of significance was set at $p \leq .05$. The results for each test follow.

Field Work

The mean time spent at field work reported by women was 77.608 hours per year, with a standard deviation of 142.514. The mean time spent by women as reported by men was 93.616 hours per year, with a standard deviation of 188.388. The mean difference in hours reported by women and their husbands was 16.008 hours. The t value was 1.15, and $p=.126$, indicating that there was no statistically significant difference in the perceived number of hours women spent at field work as reported by women and their spouses (see Table 1).

In 89 of the 125 couples, at least one of the partners reported that the woman spent time at field work. In those cases, 41 men reported a higher number of hours than did their wives, 4 men reported the same

Table 1. Paired t-test results for perceived number of hours spent at field work tasks reported by women and their husbands.

Gender	Mean no. of hours	SD	SE	Mean Difference	t	p
Female	77.608	142.514	12.75	16.008	1.15	.126
Male	93.616	188.388	16.85			

Note. N = 125.
*p≤.05, one-tailed.

number of hours as did their wives, and 44 women reported a higher number of hours than did their husbands. In 36 of the couples neither spouse reported any hours spent by the woman at field work.

Animal Chores

The mean time spent in animal chores reported by women was 285.896 hours per year, with a standard deviation of 591.534. The mean time spent by women as reported by their husbands was 250.192 hours, with a standard deviation of 492.747. The mean difference in hours reported by women and their husbands was -35.704. The t value was -.87, and p=.1945, indicating that there was no statistically significant difference in the perceived number of hours women spent at animal chores as reported by women and their spouses (see Table 2).

In 92 of the 125 couples, at least one of the partners reported that the woman spent time at animal

Table 2. Paired *t*-test results for perceived number of hours spent at animal chores reported by women and their husbands.

Gender	Mean no. of hours	SD	SE	Mean Difference	t	p
Female	285.896	591.534	52.91	-35.704	-.87	.195
Male	250.192	492.747	44.07			

Note. N = 125.
*$p \leq .05$, one-tailed.

chores. In those cases, 45 men reported a higher number of hours than did their wives, 2 men reported the same number of hours as did their wives, and 45 women reported a higher number of hours than did their husbands. In 33 of the couples, neither spouse reported any hours spent by the woman at animal chores.

Equipment

Women reported spending a mean time of 25.056 hours per year performing tasks dealing with equipment. The standard deviation in this case was 56.459. Men reported that women spent a mean of 29.544 hours per year performing equipment tasks, with a standard deviation of 55.2. The mean difference in hours reported was 4.488. The *t* value was .75, and $p=.226$. This indicates that there was no statistically significant difference in the perceived number of hours women spent at equipment tasks as reported by women and their spouses (see Table 3).

Table 3. Paired *t*-test results for perceived number of hours spent at equipment tasks reported by women and their husbands.

Gender	Mean no. of hours	SD	SE	Mean Difference	t	p
Female	25.056	56.459	5.05	4.488	.75	.226
Male	29.544	55.2	4.94			

Note. *N* = 125.
*$p \leq .05$, one-tailed.

In 96 of the 125 couples, at least one of the partners reported that the woman spent time at equipment tasks. In those cases, 52 men reported a higher number of hours than did their wives. Five men reported the same number of hours that their wives reported, and 39 women reported a higher number of hours than did their husbands. In 29 couples neither of the partners reported any hours spent by the woman at equipment tasks.

Building and Property Maintenance

Women reported spending a mean of 170.04 hours per year at maintenance of farm buildings and property, with a standard deviation of 179.81. Men reported a mean of 142.48 hour per year spent by women at maintenance work, with a standard deviation of 158.98. The mean difference was in hours reported by women and their husbands was -27.56. The *t* value was -1.53, and *p*=.064. Again, there was no statistically significant difference