A STUDY OF CHANGING LAND TENURE AND LEASING ARRANGEMENTS IN SOUTHWESTERN MINNESOTA

A Thesis

Submitted to the Faculty of the Graduate School

of the University of Minnesota

By

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In Partial Fulfillment of the Requirements

for the Degree of Master of Science

March, 1966

ACKNOWLEDGMENTS

I would like personally to thank several persons for their interest and guidance during the course of this study. Dr. Rodney C. Loehr and Dr. Selman A. Engene, while acting as members of my examining committee, gave important suggestions. I am grateful to Dr. Dale Dahl for his observations and help with particular emphasis to Chapter I. Appreciation is also extended to Dr. Keith Bryant for his assistance with Chapter III. Most singularly, however, I am indebted to my major advisor, Dr. Philip M. Raup, whose countless ideas and suggestions were stimuli throughout this study.

I also wish to express appreciation for the assistance from the Department of Agricultural Economics and the North Central Regional Research Committee.

I also want to thank the residents of southwestern Minnesota who were visited during this study, for their cooperation.

Finally, I owe a special debt of gratitude to my brother, Marshall Ferster, and his wife, Barbara, for their continued confidence and encouragement during my graduate work.

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CHAPTER I

Minnesota agriculture has undergone important changes since 1950. Among these changes have been shifts in land tenure patterns. This study focuses upon changes in land tenure among a select group of individuals in southwestern Minnesota between 1951 and 1963.

The Problem

Land tenure has traditionally followed a pattern ranging from full tenancy to full ownership in the United States. The first census report in 1880 that dealt with tenancy for the United States as a whole showed that slightly more than a fourth of the nation's farms were tenant operated. This proportion gradually increased during the next decades to forty-two percent in 1930. In the late 1940's this trend was interrupted and decreases in percent of land leased by farmers were recorded.[1] Special reports and surveys have provided information regarding this transition of land tenure. These suggest that complex institutional patterns are developing under the influence of basic changes in agricultural production, product prices, technology, credit facilities, and resource use. Minnesota agriculture is characterized by increased specialization and concentration,

1. U.S. Census of Agriculture 1959 - A Graphic Summary of Farm Tenure, Vol. V, Part 6, Chapter 2, USDA, ERS and USDC, B.C. Also, Leonard A. Salter, Jr., Land Tenure in Process, Ag. Ex. Station, Univ. of Wisconsin, Res. Bul. 146, February 1943.

both geographically and in terms of commodities produced. The number of farm firms has decreased and their average size, almost regardless of measure used, has increased substantially.

In response to these developments, farmers, local farm advisers, farm credit institutions, and policy planners have become interested in learning the nature of these changes, why they occurred, and what can be expected in the future. This study attempts to give some insight into the changes in land tenure processes over time, and to study the reasons for these changes.

Scope

This study is concerned with land tenure and leasing arrangements. Land tenure is defined as "the relationships among men in regard to the holding of rights in land."[1] One way that this complex set of relationships has been subdivided is into three major divisions: (1) full ownership, (2) part ownership, and (3) full tenancy. An operational definition of the position of any one individual in this tenure spectrum is provided by the ratio of land owned to land leased. Alternatively, this can be expressed in terms of the percentage that land owned by the farm operator is of total land farmed. For the full owner, this percentage is 100. For the full tenant, zero. This percentage, total land owned divided by total land farmed, will be used in

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2. Harris, The Origin of the Land Tenure System in the U.S., Iowa State College Press, 1953, p. 4.

the following analysis as a measure of the degree to which land ownership has been achieved.[1]

A leasing arrangement may be defined as "a contract by which the landlord conveys his rights of use and possession in a given property to a tenant for a definite period of time in return for a specified rental payment."[2] All leases will be classified in one of the following ways: (1) cash, (2) crop-share, (3) crop-share-cash, and (4) livestock share.[3]

This study is concerned with agricultural land tenure and farm lease arrangements in southwestern Minnesota. This eleven county area was defined as Economic Area 8 in Minnesota by the 1950 and 1954 Census of Agriculture (see Figure 1). The counties are (from east to west, north to south): Lincoln, Lyon, Pipestone, Murray, Cottonwood, Watonwan, Rock, Nobles, Jackson, Martin, and Faribault. There were three basic reasons for selecting southwestern Minnesota.

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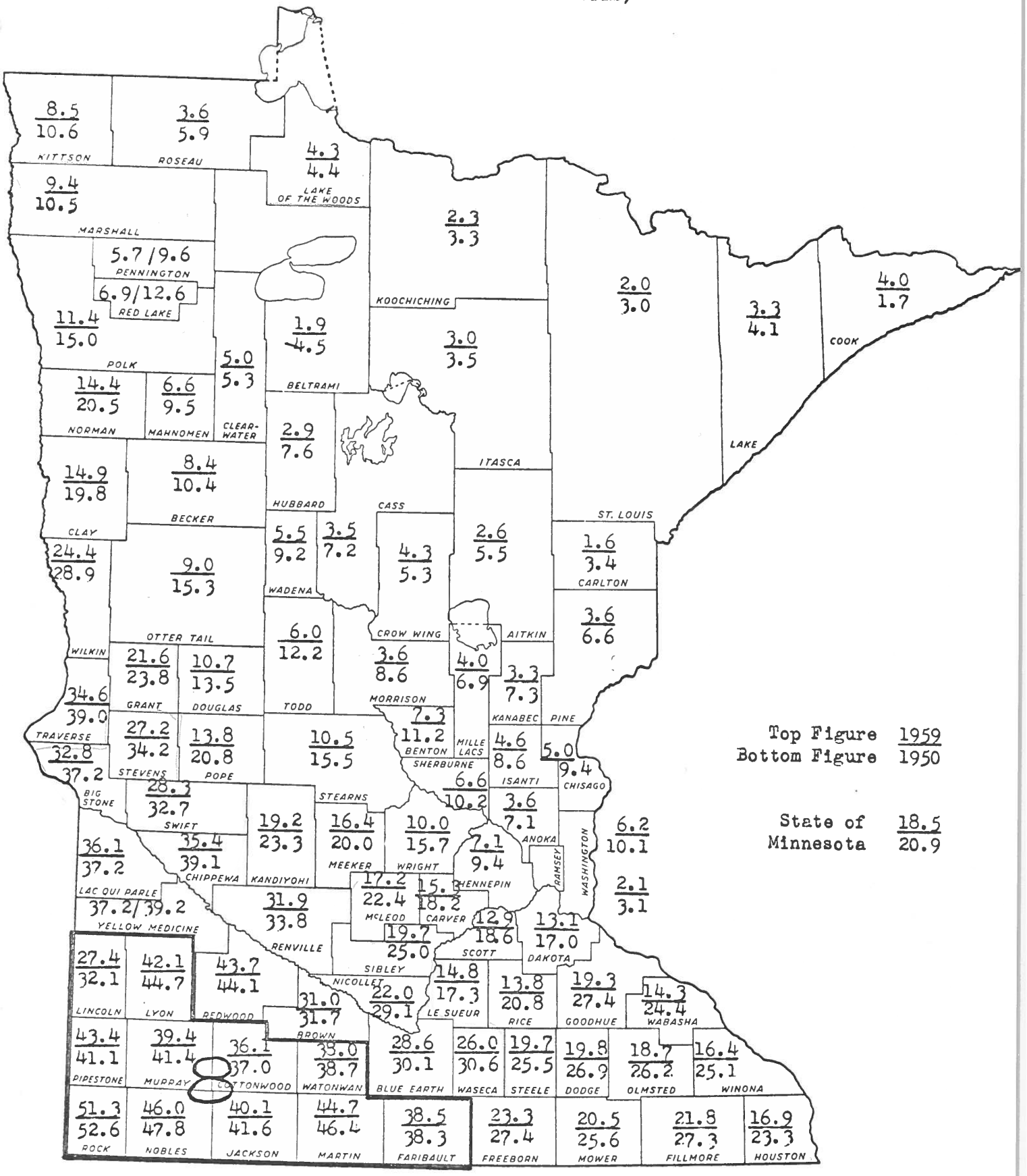
1. Total land farmed includes all land owned or rented and operated as a farm unit by any one operator.

2. A lease may be oral or written. All leases covering periods of more than one year in some states and more than three years in other states must be in writing to be legal. In Minnesota all oral leases are valid for only one year. Minnesota Statutes, 513.04, 513-.05.

3. Although the U.S. Census of Agriculture 1959, Vol. I, Part 15, p. xxii, also includes croppers, other tenants, and unspecified tenants, this study is concerned only with the four major types of tenants in this eleven county area.

Proportion of Tenancy in Minnesota, 1950 and 1959*

(Farms Operated by Full Tenants as a Per Cent of All Farms)



Top Figure 1959
Bottom Figure 1950

State of Minnesota 18.5 / 20.9

*Sources: U. S. Bureau of the Census. U. S. Census of Agriculture: 1950. Vol. I, Counties and State Economic Areas, Part 8.

U. S. Bureau of the Census. U. S. Census of Agriculture: 1959. Vol. I, Counties, Part 15, Minnesota.

First, the region is relatively homogeneous in natural resources and in reliance upon agriculture as its economic base.

Second, the direction of major changes which have occurred in this area is similar to that for Minnesota as a whole. While these changes are not identical in magnitude, their trend is uniform. In these counties the number of farms decreased 10 percent from 1950 to 1960, while size of farm increased 11 percent, to 220 acres. This compares with a reduction in the number of farms for the state of 19 percent and an increase in the average acreage of Minnesota farms of 16 percent. There was a small (0.8 percent) reduction of land in farms within the study area, and a larger (6.3 percent) decline for the entire state. Also, within both the eleven counties and the state there has been more specialization in the production of livestock, livestock products, and certain field crops (with the reduction of other forms of land use) during this decade.

Third, much of the land is operated under lease. In this respect the southwestern area is unlike the rest of the state. This aids the analysis of land tenure in two ways: (1) It provides numerous examples of each of three types of land ownership: full owners, part-owners, and full tenants. (2) Since much land is rented, this region provides a large sample of lease arrangements for study.

Data Sources

Most of the data used in this study came from three separate but related surveys carried out between 1951 and 1963, by the Agricultural Economics Department of the University of Minnesota.[1] The first of these was conducted in 1951-52 as a part of a study of farm leasing practices in the Midwest, under the sponsorship of the North Central Land Tenure Research Committee. Questionnaires were sent to a five percent sample of Minnesota renters, drawn from lists maintained by county offices of the Production and Marketing Administration. This sample included only full tenants and part-owners. Usable returns were obtained in the 1951 study from 956 farmers throughout Minnesota, of these, 215 were from Economic Area 8.[2]

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1. M. W. Kottke, "A Study of Farm Leasing in the Various Economic Areas of Minnesota," University of Minnesota, unpublished M.S. thesis, 1952.
_____, "A Study of Decision Sharing, Tenure Uncertainty and the Choice of Farm Enterprise Combinations Under Farm Leasing Systems in Minnesota," University of Minnesota, unpublished Ph.D. Dissertation, 1956.

2. NUMBER OF USABLE RETURNS AND COMPLETED INTERVIEWS FOR THE SAME GROUP OF INDIVIDUALS SURVEYED THREE TIMES FROM 1951-1963

Economic Area 8		
Usable Returns 1951	Usable Returns 1954	Completed Interviews 1963
215	128	118

For a more complete discussion of the sampling technique used in the previous studies, see Appendix A.

In 1954, a follow-up study was conducted on tenure progress and expectations. The 956 respondents (from the earlier study) were used as a basis for the investigation. There were 578 usable replies to the questionnaire, of which, 128 were from Economic Area 8.

These 128 respondents were in turn used as a base for studying the change in land tenure and leasing arrangements that had occurred between 1951 and 1963-64. Information was obtained by personal interview during 1963-64 from 118 of the group. In 5 cases the interviews were with third parties, who provided information believed to be as accurate as would have been given by the original respondent. Of the remaining ten, two could not be traced, three had moved to farms some distance away and information obtained from other sources was insufficiently complete to be of value. Five remaining individuals were still farming in the same locality, but could neither be contacted, nor was adequate information available from other sources.

The 1951-52 sample was compared to 1950 census data for Economic Area 8 in terms of the distribution of the four major lease types. In the eleven county area there was no significant difference between the 1950 census and the 1951 survey sample. In addition, a non-respondent bias test was carried out in Martin County. Again, the results showed that there was no significant difference between those renters who did not respond and the sample. It must be remembered, however, that the sample was not

representative of all the farmers of the area, since no full owners were included. It was judged to be representative of the part-owners and full tenants.

In 1954, another non-respondent bias test was conducted. It was found that the only significant difference between the non-respondents and the sample was that a significantly higher proportion of the non-respondents had terminated the lease they had previously reported. These leases may have been terminated because the individuals retired, quit farming, moved to farms at a different location, purchased the ownership rights of the land, or were deceased. In addition, no persons who started farming or began the renting of any land after 1951 were questioned.

The 1963 survey included those persons from the sample of 128 who remained farming (since 1951) as well as those who quit farming or retired. Those of the 1951 sample still farming in 1963 cannot be considered as representative of the farmers of the area. A number of them had obtained some ownership rights, but none of those who were full owners in 1951, or who had started farming since that year were included in the study.

Thus, this study traces the tenure changes that have characterized a group of farmers who rented land in 1951. While they are not now representative of the area, the availability of information on a given group over a period of time permits insight into changes in land tenure processes over time, and reasons for these changes.

Objectives

Two objectives guided the construction of this study:

1. To describe the changes in the tenure status and leasing arrangements of a specific group of farmers in southwestern Minnesota.
2. To suggest some reasons why these changes have taken place.

CHAPTER II

One of the objectives of this thesis is to study the differences in tenure status in 1963 between those farmers who in 1951 were full tenants, and those who were part-owners. The other objective is to suggest some reason why these changes have taken place. This chapter isolates several characteristics and analyzes the differences in these two groups over a 13-year period. While the list of characteristics is not complete it does provide for a framework in which to evaluate changes in land tenure for a group of farmers over time.

The chapter is divided into six parts. The first presents a general description of the 1951 respondents and their economic activity in 1963. The second presents general tenure comparisons between the 1951 part-owners and 1951 full tenants. The third section evaluates specific comparisons of the 1951 full tenants who have remained as farmers in 1963. The fourth discusses the specific comparisons of the 1951 part-owners who have remained as farmers in 1963. The fifth presents a comparison between those farmers who moved but remained in agriculture and those who remained in agriculture and did not move. The sixth examines the differences between those individuals who had changed occupations by 1963 and those remaining in agriculture.

Since the purpose of this chapter is to study the characteristics of various tenure classes this information is combined

in the presentation. The basic data are given in tables in the first three parts. The remainder of the chapter will utilize this material for comparison purposes.

A General Description of the 1951 Respondents and Their Economic Activity in 1963

Of the 128 farmers responding in 1954, 30 (or 23.5 percent) had been part-owners, in 1951, while 98 (or 76.5 percent) were full tenants. The proportion of part-owners in the sample was slightly below that of the 11 county survey area as a whole, where part-owners formed 27.5 percent of all farmers holding leased. However, the difference was not significant.

Table 1. Economic Activity in 1963 of 128 Respondents Who Had Been Tenants or Part-Owners in 1951

1963 Economic Activity	1951 Tenure Status			
	Part-Owner		Full Tenants	
	Number	Percent	Number	Percent
Farming	24	80.0	62	63.3
Non-Agricultural Employment	1	3.3	19	19.4
Retired	1	3.3	5	5.1
Deceased	2	6.8	4	4.1
Unknown	1	3.3	1	1.0
Farming but not Interviewed	1	3.3	7	7.1
Total	30	100.0	98	100.0

Table 1 shows the changes which have taken place in tenure status since 1951 within these two subgroups. While the proportions of tenants and of part-owners in the 1951 sample who have retired, died, or are now unknown is approximately the same within these two groups, there are significant differences between the groups who remained farming and those who have found non-farm employment. Of those who were full tenants in 1951, about one-fifth had taken non-agricultural employment by 1963. In contrast, only one of the 1951 part-owners had shifted to a non-farm job by 1963. Conversely, over four-fifths of the 1951 part-owners were still farming in 1963, while slightly under two-thirds of the 1951 full tenants were doing so. This seems to indicate that the possession of some ownership rights in land is an important factor in influencing the decision to remain in agriculture. Once having a firm stake in a farm, there may be strong incentive to continue even if conditions are adverse. Also, as will be shown later, other characteristics suggest that the part-owners may have had less incentive to move from agriculture.

When considering those who remained farming, two had moved to farms in other parts of the state and an additional six could not be contracted on either of two survey visits to the area in 1963-64. The 1963 tenure status of the 86 farmers interviewed is shown in Table 2.

It can be seen that one of the part-owners became a full tenant by 1963. This individual, and the one who changed occupation, must be considered only as case studies, and not as

Table 2. Distribution of Farmers Interviewed in 1963 Classified by 1951 and 1963 Tenure Status

1963 Tenure Status	1951 Tenure Status			
	Part-Owner		Full Tenant	
	Number	Percent	Number	Percent
Full Owner	6	25.0	15	24.2
Part-Owner	17	70.8	22	35.3
Full Tenant	1	4.2	25	40.3
Total	24	100.0	62	100.0

representative of their group. The majority of this chapter will study the 85 farmers who were personally interviewed in 1963-64. Of these 85, 62 were full tenants in 1951 and 23 were part-owners. The last section studies characteristics of the 19 individuals who were full tenants in 1951 and had found non-agricultural employment in 1963.

Of the 1951 part-owners, over 70 percent were still operating under the same status in 1963. Only 35 percent of the 1951 full tenants have remained in that class, and three-fifths had obtained some ownership rights. This may be due to a desire to obtain some degree of ownership, but not necessarily to obtain full ownership. The probabilities of becoming a full owner were thus equally good (or poor) for both the full tenant and part-owner groups in 1951. One out of four members of both groups had achieved full ownership status by 1963.

In order to study the difference between tenure groups some common characteristics must be examined. While the previous discussion and Tables 1 and 2 classify the respondents by their 1951 tenure status in contrast to their position in 1963, Table 3 combines all of the farmers in 1951 and 1963 into full owners, part-owners, and full tenants. Their average size of farm is then compared to the farms of the area, using 1950 and 1959 census data. While these two methods do not give the same results, they do present the general magnitude and direction of change. Later (in Table 9) a cross classification between 1951 full tenants and part-owners and their 1963 economic activity will be shown, and comparisons between size of farm and acres owned will be made.

Table 3. Average Size of Farm by Tenure Status, Respondents, and All Farmers in Economic Area 8, in Selected Years

	Tenure Status					
	Full Owners		Part-Owners		Full Tenants	
Year and Group	Acres	Number of Respondents	Acres	Number of Respondents	Acres	Number of Respondents
1951 Respondents	None	None	356	(30)	234	(98)
1950 All Farmers, Economic Area 8	121		211		168	
1963 Respondents	202	(21)	359	(39)	264	(25)
1959 All Farmers Economic Area 8	161		240		190	

Source: U.S. Census of Agriculture, 1959, Vol. 1, Part 7, Minnesota.

The size of farm of the respondents was larger than the average for the area as a whole, in each tenure class. Perhaps this is due to the nature of the initial survey, in that it may be expected that operators of the larger, more progressive farms would return a higher proportion of usable replies. The part-owners had a significantly larger average size of holding than full tenants in 1951. This may reflect a greater availability of capital and resources. It may also suggest that, in general, a farmer will first seek ownership of land that includes buildings. If he increases his acreage he is encouraged to rent land without buildings. The full tenant must first rent land with buildings then additional tracts as his resources permit.

If there is a tendency for a higher degree of ownership and a larger size of farm to be positively related to age, it may be expected that part-owners would be older than full tenants. The distribution of a group of 104 farmers in 1951 by their age as of 1963 is shown in Table 4. These 104 respondnets are composed of the 85 who have remained in agriculture and the 19 who had acquired non-farm employment by 1963.

Slightly over a third of those who had been part-owners in 1951 were under fifty years of age in 1963, whereas two-thirds of the full tenants were in this age group. Two-fifths of the part-owners of 1951 were in the 50-64 age group, in 1963, compared to one-quarter of the full tenants. Thus the full tenants were younger than the part-owners in 1951, confirming the suggested direction of this relationship between age and tenure status.

Table 4. Distribution of 1951 Respondents by Age in 1963

Age of Respondent in 1963 Years	1951 Tenure Status			
	Part-Owner		Full Tenant	
	Number of Respondents	Percent	Number of Respondents	Percent
35-39	0	0.0	15	18.5
40-44	6	26.2	22	27.2
45-49	2	8.7	17	21.0
50-54	1	4.3	16	19.7
55-59	8	34.8	2	2.5
60-64	5	21.7	2	7.5
65-69	0	0.0	4	4.9
70+	1	4.3	3	3.7
Total	23	100.0	81	100.0

In much of the history of the United States owner operation has been looked upon as the desired status and national policy has been directed toward that end. This was the philosophical principle guiding the inception and success of the Homestead Act. This idea was particularly deep rooted in the Midwestern states. The area studied was homesteaded during the period 1870-1890. Land was offered in quarter sections and initially most of the farms were of this size. Family groups often settled with other persons of the same national origin; the result was close knit communities. Frequently national groups settled in areas similar to their previous surroundings. Land was passed on within the family, but subdivision upon inheritance was not common. The

availability of land in undeveloped western areas and of alternative job opportunities in developing industries removed the pressure that might have led to minute subdivision.

In most of the region, descendants of the original settlers still own much of the land but little concentration of ownership has taken place. This can be observed in the county plat books of the area. Hence, the farmer seeking to increase his size of farm is often able to rent some additional land from a relative living near-by. This may be a widow, retired farmer, or non-farmer. Such leases are preferred to those with non-related persons because of the intrinsic security and capacity for future resource planning associated with familial ties. As will be shown in the analysis to follow, the ability to rent from a relative is a significant factor in determining the tenure status of an individual at any point in time.

Table 5 presents the relationship of landlord to tenant among the 1951 full tenant and part-owner groups. A significantly higher proportion of full tenants than part-owners rented the reported tract from a relative (over half for full tenants and under one-third for part-owners). This may seem contrary to the expected relationship. However, as we have seen, part-owners as a group were older, and it may be hypothesized that some had acquired ownership rights to land which they previously rented from relatives. It will also be remembered that this does not take account of all rented tracts. In each case of multiple renting the data for only one tract were reported, and this may have biased the results.

Table 5. Distribution of Relationship of Tenant to Landlord, Classified by 1951 Tenure Status

Relationship of Landlord to Tenant	1951 Tenure Status			
	Part-Owner		Full Tenant	
	Number	Percent	Number	Percent
Related	7	30.0	43	53.0
Non-related	16	70.0	38	47.0
Total	23	100.0	81	100.0

Several suggestions may be offered for this apparent conflict. Many of the previous generations from whom they had the opportunity to rent land may have already transferred it to heirs, hence they became part-owners. In addition, it can be assumed that the full tenants (being younger) were in the process of establishing themselves and accumulating capital. If these full tenants were renting from relatives, with an expectation of continued availability of the land and a prospect of future purchase, there is little incentive at their stage to invest money in land. However, over some length of time they may have expected to increase ownership, by acquiring land principally from relatives. It is possible that a proportion of the part-owners, having purchased most of the land available from their relatives, may have had to purchase or lease land from non-relatives in order to increase their size of business.

General Tenure Comparisons Between 1951 Part-Owners and 1951 Full Tenants

A number of factors may account for the different changes which have taken place within the two groups. It was noted above that when the farmers in 1951 were compared it was found that the older individuals had achieved a greater degree of land ownership. Further, it was assumed that to own one's farm is generally considered to be a motivating goal among farmers. When starting in farming, a young man usually has little capital and credit resources. He finds it desirable to invest in short term assets (machinery and livestock) rather than real estate. At the same time the previous generation is generally at the point of reducing the work load. A father-son partnership on a share basis is often used to aid the son in accumulating capital, permit the father to enjoy a partial retirement income, and continue the growth of the family business.

Table 6 shows the age distribution of the 1963 tenure groups. The results broadly confirm the suggested direction. Among the 1951 part-owners only one of the five farmers (for whom information was available) who became a full owner by 1963 was under 50 years old in 1963. The median age class of this group was between 55-59. This was the same median age class for those who remained as part-owners. Among the 1951 full tenants the median age class of those who remained farming was the same for all 1963 tenure divisions (40-44). This was substantially less than for the 1951 part-owners.

Table 6. Distribution of 1963 Gainfully Employed by Age, Classified by 1951 and 1963 Tenure Status

Age of Respondent in 1963	Tenure Status					
	1951 Part-Owners		1951 Full Tenants			
	1963 Tenure Status		1963 Tenure Status			
	Full Owner	Part-Owner	Full Owner	Part-Owner	Full Tenant	Changed Occupation
Years	Individuals		Individuals			
35-39	0	0	1	7	5	2
40-44	1	5	6	5	7	3
45-49	0	2	2	6	4	3
50-54	1	0	2	1	6	7
55-59	1	7	1	0	0	1
60-64	2	2	1	1	1	0
65-69	0	0	1	2	0	0
70+	0	1	0	0	2	1
Total	5	17	14	22	25	17
No Response	1	0	1	0	0	2

The 1951 full tenants who remained as full tenants in 1963 had a smaller number of farmers under 50 years of age, than did those who obtained some ownership rights.

It can be suggested that the higher proportion in the over 50 age group may be due to two factors. In the first place, these individuals may have a farm operation large enough to provide an adequate income and to provide for further anticipated needs.

Second, perhaps the opportunity to acquire ownership may have come at a stage in life when the farmer would not have benefitted by making the additional investment, and thus he chose to remain as a full tenant.

The agriculture of the area studied is based almost exclusively on the family farm. There is almost total reliance on family labor. It has sometimes been suggested that families with a large number of children may have an advantage in striving to achieve farm ownership. According to this argument, the children can provide a labor supply at a cost below that of hired labor, and the differential can be used to finance land acquisition.

To test this hypothesis, comparisons were made between size of family and progress toward land ownership, 1951 to 1963. Among those who were part-owners in 1951 there was a trend in the expected direction. Those part-owners who achieved full ownership by 1963 had more children than those who remained part-owners, but the difference was not pronounced.

Among those who were full tenants in 1951 there was no discernible relationship between number of children and progress toward land ownership. The size of family for those who achieved full ownership by 1963 was not significantly different from those who remained full tenants.

The data suggest that the importance of this factor may have declined in recent years. With increasing mechanization and technological advances, the importance of mere numbers of workers declines, and the emphasis shifts to managerial skill. It may

Table 7. Distribution of Gainfully Employed in 1963, by Number of Children, Classified by 1951 and 1963 Tenure Status

Number of Children in 1963	Tenure Status					
	1951 Part-Owner		1951 Full Tenant			
	1963 Tenure Status		1963 Tenure Status			
	Full Owner	Part-Owner	Full Owner	Part-Owner	Full Tenant	Changed Occupation
	Individuals		Individuals			
0	0	1	0	2	2	2
1	0	1	2	0	3	2
2	0	4	4	7	4	3
3	1	4	5	6	5	2
4	2	2	1	5	7	3
5	1	3	0	1	1	1
6	0	1	0	1	1	1
7	0	0	1	0	0	1
8	0	0	0	0	1	0
9	0	0	1	0	0	0
10+	0	1	0	0	0	0
Total	4	17	14	22	24	15
No Response	2	0	1	0	1	4

also be true that the cost of maintaining a family has risen as a consequence of higher standards of rural living. This may have reduced or eliminated any differential labor cost advantage represented by a heavy reliance on family labor.

A farmer's managerial skill may be a function of his educational level. This suggests that educational level (measured by the number of years of formal education) may be an important factor in determining the extent of capital accumulation and the degree of land ownership. The distribution of years of formal education is seen in Table 8. Among 1951 part-owners, those who remained part-owners appear to have had a higher level of formal education than those who became full owners. This may in part be due to their lower average age and possible greater educational opportunity. It may be suggested that those with the greater educational level place a higher opportunity cost on their labor. This could lead them to place a greater emphasis on maximizing present income and investing more of their capital in short term assets. When the 1951 full tenants are examined no apparent relationship of this type is seen. A slightly higher proportion of those remaining as full tenants had completed high school, but this may be due to the age and educational opportunity factor mentioned above.

Land ownership has typically been considered one of the primary goals of the farmer. However, income is also a motivating factor, both as an end in itself and as a determining factor in the tenure pattern. The aim of a farmer may be to maximize present income because of family commitments or because he feels little need to provide for the future. The stabilization of agricultural prices, social security provisions for farmers, and government farm programs have reduced the need for a reserve of

Table 8. Distribution of Gainfully Employed in 1963, by Years of Formal Education, Classified by 1951 and 1963 Tenure Status

Years of Formal Education	Tenure Status					
	1951 Part-Owners		1951 Full Tenant			
	1963 Tenure Status		1963 Tenure Status			
	Full Owner	Part-Owner	Full Owner	Part-Owner	Full Tenant	Changed Occupation
	Individuals		Individuals			
6	0	0	0	1	0	0
7	1	1	0	0	0	0
8	3	9	7	10	9	7
9	0	0	1	1	1	0
10	0	1	0	0	0	0
11	0	0	0	0	1	0
12	1	4	6	9	13	6
13	0	1	0	1	1	1
14	0	0	0	0	0	0
15	0	1	0	0	0	0
16	0	0	0	0	0	1
Total	5	17	14	22	25	15
No Information	1	0	1	0	0	4

capital to meet adverse circumstances. Building up such a reserve involves the forfeiture of present income, and the most common form of security is real estate.

Size of farm and tenure status may together by indicative of the degree to which such security is sought. It may be expected that full owners would have a smaller size of farm than full tenants, with part-owners in an intermediate position. Table 9 indicates that among the 1951 part-owners those who had become full owners by 1963 had a significantly smaller size of operation than those who remained part-owners. In addition, those part-owners who achieved full ownership decreased their total size of farm while increasing the proportion of land owned, but even in 1951 they had a smaller average size of farm. Among the 1951 full tenants, those who became full owners by 1963 had a smaller size of farm than those who remained full tenants. Part-owners had the largest average size of farm. There was a small increase in the size of farm of those who became full owners, but the greatest increase in size of farm was among those who became part-owners.

A number of factors may have caused these differences. The size of farm itself is a function of the number and size of tracts rented or owned. There were differences in number and size of tracts held or purchased by the different tenure groups. These differences will be evaluated in the remainder of this chapter.

Table 9. Average Size of Farm and Acres Owned, Classified by 1951 and 1963 Tenure Status

	1951 Tenure Status							
	Part-Owner			Full Tenant				
	1963 Tenure Status			1963 Tenure Status				
	Full Owner	Part-Owner	Total	Full Owner	Part-Owner	Full Tenant	Changed Occupation	Total
Number of Respondents	6	17	23	15	22	25	19	81
Average Acres Farmed 1951	271	376	355	221	233	247	226	234
Average Acres Owned 1951	114	161	160	---	---	---	---	---
Average Acres Farmed 1963	216	430	---	224	320	279	---	---
Average Acres Owned 1963	216	206	---	224	145	---	---	---

Specific Comparisons of the 1951 Full Tenants Who Remained as Farmers in 1963

The average full tenant of 1951 who had become a full owner by 1963 had acquired 188 acres, by purchase or inheritance. As Table 10 shows, this was the largest average holding of any of the tenure groups. This group had also acquired two-thirds of the tracts from relatives, the highest proportion of any of the tenure groups (see Table 11). This suggests that this group acquired entire farms. The resultant debt burden involved in financing land purchase may have inhibited them from investing in further expansion either by purchasing more land or providing

Table 10. Average Size of Tracts Owned in 1963, Classified by 1951 and 1963 Tenure Status

	1951 Tenure Status			
	Part-Owner		Full Tenant	
	1963 Tenure Status		1963 Tenure Status	
	Full Owner	Part-Owner	Full Owner	Part-Owner
Number of Farmers	6	17	15	22
Number of Tracts	11	21	19	22
Average Size of Ownership Unit (Acres)	98	133	188	138

Table 11. Relationship of Landowner to Previous Owner, Classified by 1951 and 1963 Tenure Status

	1951 Tenure Status			
	Part-Owner		Full Tenant	
	1963 Tenure Status		1963 Tenure Status	
	Full Owner	Part-Owner	Full Owner	Part-Owner
Number of Farmers	6	17	15	22
Total Number of Tracts Obtained	(11)	(21)	(19)	(22)
Tracts Purchased From Relatives	2	10	13	7
Tracts Inherited From Relatives	1	2	1	3
Tracts Purchased From Non-Relatives	7	8	5	11
No Information	1	1	0	1

stock and machinery for additional leased acres. This may help explain why the average size of farm of full owners, as shown in Table 9, was the smallest (224 acres) of all 1951 full tenants remaining in agriculture.

If the tenant had been renting from a relative the temptation would be strong to take over the farm through inheritance, if an opportunity to do so arose. It would be difficult to forgo an opportunity that the tenant might suspect would not recur. If purchasing from a relative, favorable financial terms are also likely to be offered. Contracts for deed and loans from individuals, for example, were commonly reported by those who had purchased some land between 1951 and 1963. The result could well be a decision to strive for full ownership, at the cost of a smaller size of farm.

About two-thirds of those 1951 full tenants who had become full owners by 1963 rented some land from relatives in 1951. This was also the case of those 1951 full tenants who become part-owners by 1963. This differs significantly from those who remained as full tenants, where less than half leased any land from relatives in 1951. This can be seen in Table 12. This substantiates the security inherent in familial ties.

The degree of security enjoyed by a full tenant may be shown by the length of time for which he had held the tract he reported in 1951. These data are presented in Table 13. Two-thirds (16 of 25) of the 1963 full tenants had rented their tract in 1951 for 5 or more years compared to only half (11 of 22) of the 1963

Table 12. Distribution of Relationship of Tenant to Landlord, Classified by 1951 and 1963 Tenure Status

Number of Respondents	1951 Tenure Status: Part-Owner — 1963 Tenure Status: Full Owner	Part-Owner	Total	1951 Tenure Status: Full Tenant — 1963 Tenure Status: Full Owner	Part-Owner	Full Tenant	Changed Occupation	Total
(a) 1951 Reported Lease								
Rent From Relatives	2	5	7	10	14	12	7	43
Rent From Non-relatives	5	12	16	5	8	13	12	38
Total	6	17	23	15	22	25	19	81
(b) 1963 1st Lease								
Rent From Relatives	--	4	4	--	11	13	--	24
Rent From Non-relatives	--	13	13	--	11	12	--	23
Total	--	17	17	--	22	25	--	47
(c) 1963 2nd Lease								
Rent From Relatives	--	1	1	--	0	3	--	3
Rent From Non-relatives	--	6	6	--	9	4	--	13
Total	--	7	7	--	9	7	--	16
(d) 1963 3rd Lease								
Rent From Relatives	--	1	1	--	0	2	--	2
Rent From Non-relatives	--	1	1	--	1	2	--	3
Total	--	2	2	--	1	2	--	3
(e) 1963 4th Lease								
Rent From Relatives	--	0	0	--	0	1	--	1
Rent From Non-relatives	--	1	1	--	0	0	--	0
Total	--	1	1	--	0	1	--	1

Table 13. Distribution of Respondents by Number of Years Tract Had Been Rented in 1951, Classified by 1951 and 1963 Tenure Status

Number of Years Rented Tract	1951 Tenure Status: Part-Owner — 1963 Tenure Status: Full Owner	1951 Tenure Status: Part-Owner — 1963 Tenure Status: Part-Owner	1951 Tenure Status: Full Tenant — 1963 Tenure Status: Full Owner	1951 Tenure Status: Full Tenant — 1963 Tenure Status: Part-Owner	1951 Tenure Status: Full Tenant — 1963 Tenure Status: Full Tenant	1951 Tenure Status: Full Tenant — 1963 Tenure Status: Changed Occupation
0-2	1	1	3	5	3	3
3-4	1	1	1	4	6	5
5-9	4	8	7	8	12	7
10-14	0	1	2	2	3	1
15-19	0	2	2	1	0	2
20-24	0	2	0	0	1	0
24+	0	2	0	0	0	1
Total	6	17	15	22	25	19
No Information	0	0	0	2	0	0

part-owners. There is a high concentration in the 5 to 9 year group in both cases. This may be due to World War II veterans who returned to agriculture in 1945 and after, and may bias the analysis. With this reservation, the data suggest that those full tenants who had been renting for the longest period of time in 1951 were the ones most likely to reappear as full tenants in 1963.

The type of lease held may also influence the changes in tenure status. It may be hypothesized that since those with livestock share leases generally rent from relatives they may be

expected to remain full tenants until the landlord makes the land available to the tenant. This time period may vary widely.

Cash leases are more common for the smaller tracts of land and appear to be particularly attractive to part-owners. The reasons are not hard to find. In this area the predominance of corn-hog and beef-feeding enterprise has increased over the last 13 years. Often a farmer purchases a tract equipped with a set of buildings, which he establishes as the "home farm". In order to increase his income and distribute his labor resources more evenly throughout the year he finds it necessary to increase his livestock production. Typically it is more efficient for him to raise all of his feed requirements. This will usually involve a greater land base.

He may acquire additional acreage by renting or purchasing. Since land values are high in this area and capital is typically limited a farmer finds that he will earn a greater return on his resources by investing in machinery and livestock rather than by purchasing land.[1] As mentioned earlier this decision represents an attempt to increase present income at the expense of future income. Further, he attempts to rent land in close proximity to his home farm. Often the land that is available to him may include a set of buildings. If he seeks to rent pasture or cropland to be used for specific purposes it is understandable that these would be smaller, self-contained tracts.

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1. D. O. Solum and P. M. Raup, The Minnesota Farm Real Estate Market in 1962, Department of Agricultural Economics Report No. 524, St. Paul, Minnesota, Institute of Agriculture, February, 1963.

It can be seen from Table 14 that those who have remained as full tenants did have proportionately more livestock share leases in 1951. Those who became part-owners changed to cash lease as expected. Other differences between lease arrangements were not significant.

Specific Comparisons of the 1951 Part-Owners Who Remained as Farmers in 1963

This section draws upon the tables presented in the previous section in order to study several characteristics of those 1951 part-owners who remained in agriculture in 1963. Care must be used in generalizing the comparisons from this group since it includes only 23 individuals, of whom 6 had become full owners and 17 remained as part-owners by 1963.

It was seen that among the 1951 full tenants, those who became full owners by 1963 had acquired the largest average size of tract and showed a greater incidence of acquisition from relatives. However, the opposite situation prevailed among the 1951 part-owners (see Tables 10 and 11). The average size of ownership unit for those part-owners in 1951 who became full owners in 1963 was only 98 acres, and only two of eleven tracts acquired were obtained from relatives. Those who remained part-owners in 1963 acquired tracts that averaged 133 acres and about half of the tracts (10 of 21) were obtained from relatives. For those who became full owners between 1951-63, the average size of farm declined from 271 to 216 acres (Table 9). It would seem that members

Table 14. Distribution of Lease Types, Classified by 1951 and 1963 Tenure Status

Number of Respondents	1951 Tenure Status: Part-Owner — 1963 Tenure Status: Full Owner	Part-Owner — Part-Owner	Part-Owner — Total	Full Tenant — Full Owner	Full Tenant — Part-Owner	Full Tenant — Full Tenant	Full Tenant — Changed Occupation	Full Tenant — Total
(a) 1951 Reported Lease								
Cash	0	1	1	2	4	3	4	13
Crop-Share	3	8	11	1	4	3	2	10
Crop-Share-Cash	2	8	10	11	11	14	10	46
Livestock-Share	1	0	1	1	3	5	3	12
Total	6	17	23	15	22	25	19	81
(b) 1963 1st Lease								
Cash	0	2	2	0	7	2	0	9
Crop-Share	0	5	5	0	7	4	0	11
Crop-Share-Cash	0	9	9	0	8	15	-	23
Livestock-Share	-	1	1	-	-	2	-	2
Total	-	17	17	-	22	25	-	45
(c) 1963 2nd Lease								
Cash	-	3	3	-	3	0	-	3
Crop-Share	-	-	-	-	2	3	-	5
Crop-Share-Cash	-	4	4	-	3	3	-	6
Livestock-Share	-	-	-	-	-	1	-	1
Total	-	7	7	-	8	7	-	15

(Continued)

Table 14. (Continued)

Number of Respondents	1951 Tenure Status: Part-Owner; 1963 Tenure Status: Full Owner	Part-Owner	Total	1951 Tenure Status: Full Tenant; 1963 Tenure Status: Full Owner	Part-Owner	Full Tenant	Changed Occupation	Total
(d) 1963 3rd Lease								
Cash	-	1	1	-	-	-	-	-
Crop-Share	-	-	-	-	-	2	-	2
Crop-Share-Cash	-	1	1	-	1	-	-	1
Livestock-Share	-	-	-	-	-	-	-	-
Total	-	2	2	-	1	2	-	3
(e) 1963 4th Lease								
Cash	-	-	-	-	1	-	-	1
Crop-Share	-	1	1	-	-	1	-	1
Crop-Share-Cash	-	-	-	-	-	-	-	-
Livestock-Share	-	-	-	-	-	-	-	-
Total	-	1	1	-	1	1	-	2

of this group were highly motivated by the desire for security and were prepared to sacrifice present income for this end. It may also reflect their greater age and consequent greater need to provide for retirement.

Table 9 also shows that those who remained as part-owners in 1963 owned somewhat less land per person in 1951 than those part-owners who became full owners (216 and 206 acres respectively). During this period those who remained as part-owners only increased the amount of land leased per farm by less than ten acres (from 215 to 224 acres), but increased land owned by 45 acres (from 161 to 206 acres).

Those who remained as part-owners also appear to have had a greater security of tenure on leased land. One must be conscious of the limitations on inferences which can be drawn due to the small number of farmers studied in each group. Of the farmers who remained part-owners in 1963, two-fifths (7 of 17) had leased their land for 10 years or more prior to 1951, whereas none of the six who became full owners had leased continually for a comparable length of time (see Table 13).

There was no appreciable difference between the two subgroups with respect to renting from relatives in 1951. As Table 12 shows, approximately one-third of the tracts were rented from relatives in each case. This is in sharp contrast to those 1951 full tenants who obtained full ownership rights by 1963, two-thirds of whom had rented from relatives in 1951. Slightly over twenty per cent (6 of 27) of the tracts which were leased by those

who remained as part-owners in 1963 were rented from relatives. This may be compared to a third (11 of 32) of those 1963 part-owners who had previously been full tenants (see Table 12). It may be hypothesized that those who rent from relatives do so with some probability of acquiring that land in the future. This suggests that those who have remained part-owners may not change their tenure status in the future since they have already taken advantage of this opportunity. The part-owners of 1963 who were full tenants in 1951 may have had opportunity to acquire land from relatives in the intervening years.

It is difficult to detect any significant patterns among other lease types due primarily to the small number of cases. There were not significant differences in distribution of crop-share and crop-share-cash lease type between the groups, as seen in Table 14. With respect to the livestock share lease only one case was reported and that by a farmer who was a part-owner in 1951 and became a full owner in 1963.

When comparing the 1951 full tenants there were some differences in the use of cash leases in 1963. This can be seen in Table 14. Among the 1951 full tenants who remained as full tenants in 1963, only 2 of 35 tracts were held under cash lease in 1963. This is in contrast to the 1951 full tenants who became part-owners by 1963. One third (11 of 32) of their rented tracts in 1963 were held under cash lease. The fact that many of the first leases held by part-owners were crop-share-cash types suggests that these farmers were renting farms that included both crop and pasture land.

There are few discernible differences between those part-owners in 1951 who became full owners and those who remained part-owners in 1963. Age seems to be the sole differentiating factor between these two groups. Those who became full owners were older, as was anticipated. The desire to provide for retirement may have been the main motivating force.

A Comparison Between Those Farmers Who Moved But Remained in Agriculture and Those Who Remained in Agriculture and Did Not Move

It was hypothesized that those farmers who remained in the same location over the 13 year period would have achieved a higher degree of ownership by 1963. Those who have remained in the same location have acquired proportionately more of their tracts from relatives. They also rented a greater percentage of tracts in 1951 from relatives. This would indicate a more favorable position in terms of opportunity to acquire land.

Table 15 shows the frequency of those who changed the location of their home farm since 1954. Only one of the 1951 part-owners moved, whereas 19 of the 1951 full tenants did so. Among those who were full tenants in 1951, from 25 to 35 percent had moved by 1963. The proportion was lowest for those who remained full tenants and slightly higher for those who had become part-owners by 1963. This conflicts with the suggested hypothesis. It will be useful to determine whether or not the variables considered in the earlier analysis had an influence on the decision to change location.

Table 15. Distribution of Respondents by Number Moving Between 1951 and 1963, Classified by 1951 and 1963 Tenure Status

	1951 Tenure Status				
	Part-Owner		Full Tenant		
	1963 Tenure Status		1963 Tenure Status		
	Full Owner	Part-Owner	Full Owner	Part-Owner	Full Tenant
Number of Respondents Moved	0	1	5	8	6
Number of Respondents	6	17	15	22	25

Younger people are generally more willing to move when an attractive opportunity presents itself. The 1951 part-owners were older than the full tenants. The fact that they have not moved may reflect this age difference. Among the 1951 full tenants, those who became part-owners were the youngest. Slightly more of them (37 percent) changed location than was true of the other groups. This suggests that age is a factor in determining mobility.

Perhaps the most striking feature is that only one of the 23 individuals who were part-owners in 1951 had changed location by 1963. Having acquired some ownership rights, these individuals were apparently reluctant to go through the process of selling their property or leasing it in order to move to another home farm. They were presumably under no pressure to do so. Owning an average of about 145 acres, they could in an emergency have continued in business even if their leased land was no longer available. The full tenant would be forced to move in a similar

situation, but such cases were rare. While information is not available on full owners throughout this period one may hypothesize that perhaps land ownerships was "immobilizing" for both the part and full owner.

The difference between the two groups in 1951 in number of children is not significant and there is no apparent relationship between family size and frequency of moving.

The full tenants in 1951 had a greater propensity to change location. This group included a greater proportion of individuals who had completed high school than did the part-owner group. Both of these variables are influenced by age. The full tenant, being younger, had a greater opportunity to complete high school. Education may thus be disguising the effect of age within this group of farmers.

Change of location is determined to a considerable extent by security of tenure. The longer an individual has held his land the more likely he is to anticipate continued occupancy. The part-owners in general had leased their land for a longer period than the full tenants in 1951, and have moved less.

The full tenants in 1951 rented a higher proportion of their tracts from relatives than did the part-owners. Again, all but one of those who changed location came from the 1951 full tenant group. However, only three of the 19 full tenants of 1951 who changed location had been renting from relatives. Those who rented from relatives had a lower incidence of moving which is in agreement with the earlier discussion.

A Comparison Between Those Individuals Who Changed Occupations by 1963 and Those Remaining in Agriculture

Twenty of the respondents of 1951 had quit farming and found employment elsewhere by 1963 (see Table 1). All but one of these had been full tenants in 1951. This section considers those 19 who were full tenants in 1951. It would appear that the differences between the part-owners in 1951 and full tenants in 1951 are similar to those set forth in the discussion of movement within agriculture. The part-owner has a part of his asset holdings in real estate and has greater security of tenure than the full tenant. Thus he is more tied to agriculture and extremely adverse conditions or a very attractive alternative will be required to persuade him to move. The full tenant, however, does not have capital tied up in real estate and does not have real property to pass on to heirs. He has fewer constraints upon a decision to move out of agriculture.

The reasons actually given for leaving agriculture are numerous. In order to ascertain whether or not there are basic differences between the twenty-four percent of the tenants who quit farming and those who remained, the characteristics studied earlier will be re-examined. Those who changed occupations were somewhat older than those who remained in farming. About half were between the ages of 45-54 while only about two-fifths of the 1951 full tenants still farming were in that age groups (see Table 6).

Of those who left agriculture, a large proportion quit farming during the period in their family cycle in which children could

contribute most to growth of the farm and expansion of their size of business. If a farmer has no children or children who are not interested in agriculture, he will not have this aid or incentive to build up the farm to pass on to his heirs. When the two groups were compared with respect to the percentage having two children or less no differences were found. The decision to quit was apparently not influenced by the presence or absence of children.

Those who changed occupations did not have a higher level of formal education than those who remained in farming (see Table 8). It had been hypothesized that those with a higher educational level would have a higher opportunity cost of remaining in agriculture. They would have a greater incentive to quit farming if their ability was not rewarded to the same degree in agriculture as in off-farm employment. Education through the high school level in a group of farmers such as this may not be a good indicator of ability to run a farm. College education may be a better measure of earning ability. The one person who had a post-graduate degree had obtained it after making the decision to quit farming in order to qualify himself for a teaching career.

Information on educational achievement was obtained for 15 of the full tenants in 1951 who had left farming by 1963. Eight of the 15, or 53 percent had completed high school. This is almost the identical proportion for those full tenants in 1951 who remained full tenants in 1963 (13 out of 25 had completed high school).

Data on educational level were obtained for 36 full tenants in 1951 who had acquired part or full ownership status by 1963. Of these 36 individuals, 16, or 44 percent had completed high school. There was thus a slight tendency for those who acquired ownership status to show a lower level of formal educational attainment than either the group that changed occupation or the full tenants who remained full tenants. But there is little to suggest that those who quit farming had significantly different levels of formal education than those who remained.

It would seem that those with smaller sized farms would have a greater incentive to quit farming. The group that changed occupation did not, however, have farms significantly smaller than those who remained in agriculture. Table 9 shows that their size of farm in 1951 was 226 acres, compared to 234 acres for all full tenants in 1951. This variable does not appear to be of value as an indicator of those who might quit in the future.

All but one of those who changed occupation were full tenants in 1951. It was suggested that security of tenure was an important criterion in determining whether an individual will quit farming. Seven of the nineteen who quit had rented their land from relatives (see Table 12). This proportion (37 percent) is significantly lower than that for the 1951 full tenants who remained in agriculture (55 percent). As discussed earlier this variable does give a measure of security and may be useful for delineating these two groups. When the other variable used earlier as a measure of security is considered (number of years the reported

tract had been leased in 1951), there was no significant difference between these two groups (see Table 13). There were also no significant differences with regard to the type of lease in 1951 (refer to Table 14).

While 19 out of 20 individuals who changed occupation were full tenants in 1951, they differ very little from those who remained in agriculture as full tenants. Upon studying the reasons given by respondents for their exit from agriculture, three groups may be distinguished: (1) the majority felt that their returns from agriculture were insufficient, and that there were better opportunities for advancement elsewhere. (2) A few shifted out of agriculture to unskilled employment without any stated reason. (3) Some others were forced to vacate their land and could not find a new farm at a rental rate that they considered fair. These last two groups may be in no better financial situation than when they were in agriculture. To many the decision to move was apparently the path of least resistence rather than the conscious pursuit of an end that would offer a greater reward.

CHAPTER III

In Chapter II the respondents were first classified by their 1951 tenure status (part-owner or full tenant), and then subdivided into their respective 1963 economic activity. Several characteristics were then studied in determining similarities and differences between these subgroups. This chapter evaluates the reasons for differences in the land tenure status of all those engaged in agriculture in 1963, regardless of whether they were part-owners or full tenants in 1951.

The Measurement Criterion

Among farm families there is apparently a conflict between security represented by land ownership, and the maximization of present income, which is presumably reflected in the size of operation. For those who consider land ownership to be their goal, one can evaluate certain changes which concern this aim. In considering the degree of success in achieving this goal, the measure used in this analysis is land owned as a percentage of total land farmed in 1963. Full owners would be classified as 100 percent, full teants, 0 percent, and part-owners would fall between these two limits. The number of acres owned or rented is not the criterion, only the percent of land owned. This measure is referred to as the "degree of land ownership" and may be presented in the following form:

$$\text{Degree of Land Ownership} = \frac{\text{Total Acres of Land Owned}}{\text{Total Acres of Land Farmed}} \times 100$$

The Hypotheses

There are many factors which explain differences in the degree of land ownership among farmers. These factors, or independent variables, have a logical relationship with the dependent variables under study. These relationships are first formulated as hypotheses and are then investigated for statistical significance. The following section presents the hypotheses used in explaining differences in the degree of land ownership among farmers in the study sample.

Hypothesis I

The degree of land ownership has a positive relationship with the age of a farmer. It takes time to accumulate capital and an equity base in order to purchase land. Normally it is older farmers who acquire land through inheritance. In general, the agricultural ladder hypothesis (the older the person, the greater is his degree of land ownership) will be studied in this analysis.[1]

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1. Wehrwein, C. F. "Place of Tenancy in a System of Farm Land Tenure," Journal of Land and Public Utility Economics, November, 1928.

_____, "The Pre-Ownership Steps on the 'Agricultural Ladder', in a Low Tenancy Region," Journal of Land and Public Utility Economics, November, 1928.

_____, "The Post-Ownership Steps on the 'Agricultural Ladder' in a Low Tenancy Region," Journal of Land and Public Utility Economics, February, 1930.

_____, "The 'Agricultural Ladder,' in a High Tenancy Region," Journal of Land and Public Utility Economics, February 1931.

Hypothesis 2

The degree of land ownership has a positive relationship with the education of a farmer. As the modern farm becomes more complex, education is essential for successful management. Farmers must be able to work efficiently with their resources. In order to accumulate capital and obtain credit to finance land purchases, farmers must be informed in the areas of production and business management. It is assumed that the more education one has, the greater is his ability to evaluate problems and solutions affecting the farm. It is also assumed that this superior management ability will be reflected in higher income and that the individual will use his superior income position to acquire more land.

Hypothesis 3

The degree of land ownership has a positive relationship with the security of the farmer's land tenure status. A more effective planning of resource use can be accomplished when a farmer is more certain of his future expectations. This facilitates capital accumulation and credit availability, which can be converted into land ownership. The farmer often purchases a small tract at first while continuing to rent some land, and increases his degree of ownership later.

Three variables will be used in testing the effects of security of expectations regarding tenure status. It is hypothesized that the degree of land ownership in 1963 will be negatively

related to the number of times the operator had moved between 1954 and 1963, positively related to the length of time he had been renting land in 1954, and positively related to his expectations (in 1954) as to the length of time he could continue to rent his land.[1]

Hypothesis 4

The degree of land ownership in 1963 is positively related to the extent to which tenure arrangements between 1951 and 1963 have involved relatives of the operator. Many farms in this area of the state have been individually owned and operated for long periods of time. Many of the farms have remained in the same family since the days of first settlement. The terms under which land is leased or acquired are typically more advantageous when the arrangements are among relatives. To test the significance of these intra-family arrangements, it is hypothesized that the degree of land ownership in 1963 is:

(1) Positively related to the ratio of land rented from relatives, to total land rented, in 1951.

(2) Negatively related to the ratio of land rented from relatives to total land rented, in 1963.

(3) Positively related to the ratio of land acquired from relatives to total land acquired during the period of 1951-1963.

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1. In evaluating the expectations, the question was asked in the 1954 schedule: "Approximately how many years do you expect this land will be available to you?" The answers were grouped into three classes: (a) 1-3 years, (b) 4-6 years, (c) 7-10 years, (d) indefinite.

Method

In order to study the hypotheses, multiple regression analysis was used. Four equations are presented in this section. The first two have as their dependent variable (Y_1), the degree of land ownership for all farmers (full owners, part-owners, and full tenants), in 1963. Equation I uses 1951 and 1954 information while Equation II uses 1963 data. The third and fourth equations have as their dependent variables (Y_2), the degree of land ownership for only those farmers who were part-owners in 1963. Equation III uses 1951 information and Equation IV uses 1963 data, for part-owners only.

The Degree of Land Ownership for All Farmers (Y_1)

The independent variables used in Equation II are defined before those used in Equation I.

The Independent Variables for Equation II

Age of Respondent (X_2)

The recorded age in years as of 1963.

Education of Respondent (X_3)

The actual number of years of formal education obtained to 1963.

Number of Times Moved Since 1954 (X_4)

The actual number of times a farm operator moved to a different "home farm" between 1954 and 1963. The number of moves varied from zero to four.

Number of Tracts Leased (X_5)

The number of tracts leased varied from zero through four. In Equation I, 1951 information was used while Equation II is based on 1963 data. If a farmer was a full owner he was given a value of zero. Some part-owners or full tenants leased up to four tracts. This information does not give a measure of the size of tract.

Number of Tracts Acquired by 1963 (X_6)

The number of tracts acquired also varied from zero through four. Acquisitions could be through inheritance or purchase. The land was classified as owned, whether free from debt or not. There is no measure of the size of the tract in this variable, only the number of tracts acquired. The full tenant was given a value of zero while some part-owners or full tenants had acquired up to four separate tracts.

Land Obtained From Relatives (X_7)

This is a dummy variable. If a respondent acquired any land from a relative (through purchase or inheritance) he was coded as 1. If a respondent had not acquired any land from a relative or had not acquired any land from 1951 to 1963 (i.e. was a full tenant in 1963), he was coded as zero.

Rent from a Relative (X_8)

This variable is also set up as a dummy variable. If a respondent rented any land from a relative, he was coded as 1. If the respondent did not rent from a relative or did not rent any land (i.e. was a full owner in 1963), he was given a value of zero.

Attend Veteran's Vocational Agricultural Schools, Adult Night School, Agricultural Classes, or Belong to the Minnesota Farm Management Association (X_9)

This variable is also set up as a dummy variable. If a farmer had attended the veteran's vocational agricultural school program or adult night school agricultural classes for one year or more or had been a member of the Minnesota Farm Management Association for one year or more, he was coded as 1. If the respondent had done none of these things, he was coded as zero.

The Independent Variables for Equation I

Equation I uses the 1951 information of all farmers to determine the degree of land ownership in 1963. Three of the variables used in Equation I are defined identically with those used in Equation II. These are: age of respondent (X_2), number of tracts leased (X_5), and rent from a relative (X_8).

In 1951 and 1954, information was obtained on the lease of a farmer with a single landlord, or on only one of the leases if the farmer had multiple landlords. Several independent variables

were developed from the information obtained on the lease arrangement. The type of lease accounted for three independent variables: cash lease (1951) (X_{10}), livestock share (1951) (X_{11}), and crop share (1951) (X_{12}). Since the crop-share-cash leases were more numerous, the partial regression coefficient for this type of lease is included in the value of the constant term. This created "dummy variables" for (X_{10}), (X_{11}), and (X_{12}).

Since in the cases of multiple leases there is no significance attached to the reported tract (as the largest or longest rented) caution must be used in any attempt to generalize results. When the variables are included in Equations I and III they have an effect of biasing the results. These equations use 1951 information to explain differences in the degree of land ownership of all farmers in 1963. The 1951 study did not include any persons who owned all of the land they farmed. Since the majority of the farmers still rent some land, renting any land in 1951 shows a negative relationship to the percent of land owned in 1963. In spite of these problems it was believed that interesting results may have occurred with the intercorrelation with other variables.

Cash Lease (1951) (X_{10})

If a cash lease was reported the code of 1 was used; for any other lease the value was zero.

Share Lease (1951)(X_{11})

If a share lease was reported the code of 1 was used; for any other lease the value was zero.

Crop Share Lease (1951) (X_{12})

If a crop share lease was reported the code of 1 was used; for any other lease the value was zero.

Four other variables were included from the data obtained on the leased land in 1951 and 1954.

Number of Acres Owned (1951) (X_{13})

The actual number of acres the respondent owned in 1951. The land was considered owned whether it was debt free or not in 1951.

Age of Landlord (1951) (X_{14})

The age of the landlord from which the respondent rented the land.

The Number of Years Renting the Tract (1951) (X_{15})

The number of years the land had been rented prior to 1951.

The Length of Time the Land will be Available (X_{16})

The respondent was asked to give the length of time that he thought the rented land would be available to him from 1954. The code values are presented below:

Recorded Years Available	Code Value
1-3	2
4-6	5
7-10	8.5
Indefinite	15[1]

1. The decision to give the indefinite answer a value of 15 years was based on the fact that the Minnesota Constitution places a limit of 21 years on farm leases; fifteen years represents an approximate mid-point between 10 and 21.

The Degree of Land Ownership for Part-Owners Only (Y_2)

The Dependent Variable (Y_2)

The degree of land ownership for part-owners only in 1963 is used at the dependent variable.

As previously mentioned, two additional equations relating to part-owners only are presented in this section. Equation III uses 1951 and 1954 information to explain the variance in the dependent variable. Equation IV uses 1963 data to explain the variance in the same dependent variable.

The Independent Variables for Equations III and IV

The independent variables used and specified in Equation III and IV are identical to those used respectively in Equations I and II.

The Hypothesized Results

The expected signs of the coefficients of the independent variables in the four multiple regression equations are presented in Table 16.

Table 16. Summary Table of the Independent Variables and Their Hypothesized Relation to Four Multiple Regression Equations[1]

	Independent Variables	Equations and Dependent Variables I	II	III	IV
X_2	The Age of the Respondent	+	+	+	+
X_3	The Education of the Respondent		+		+
X_4	The Number of Times Moved Since 1954		-		-
X_5	The Number of Tracts Leased	-	-	+	-
X_6	The Number of Tracts Acquired by 1963		+		+
X_7	Land Obtained from Relatives		+		+
X_8	Rent from Relatives	+	-	+	-
X_9	Attend Veteran's Vocational Ag. School, Adult Night School Ag. Classes, Member of Minnesota Farm Management Association		+		+
X_{10}	Cash Lease in 1951	-		-	
X_{11}	Livestock Share Lease in 1951	-		-	
X_{12}	Crop Share Lease in 1951	-		-	
X_{13}	Number of Acres Owned in 1951	+		+	
X_{14}	Age of the Landlord in 1951	+		+	
X_{15}	Number of Years Renting Tract in 1951	+		+	
X_{16}	Length of Time Land will be Available	+		+	+

1. Only the relationships of the variables used in each equation are presented.

The Four Regression Equations

This section presents the four multiple regression equations. Each equation is summarized by giving the estimated partial regression coefficients, the computed t values, the simple correlation coefficients between each dependent and independent variable, and the simple correlation matrix. The summaries are found in Tables 17-20 of this chapter. After each table the equation is interpreted. Equations I and II and Equations III and IV are then compared in an effort to determine why certain variables were significant with 1963 data, although these same variables were not significant with 1951 information.

Equation I

The results of Equation I are presented in Table 17. The F value of Equation I was 1.26 and was not significantly different from zero at the .10 level of confidence. The coefficient of determination was only .1735. This suggests that the available information from 1951 and 1954 on all farmers is not relevant for determining the degree of land ownership in 1963.

Although this equation was not found to be important, it had two statistically significant variables, both at the .10 level. They were: (X_{15}), the number of years the tracts had been rented prior to 1951 and (X_{10}), cash lease in 1951. Both of the coefficients of these variables were consistent with the hypothesized relationships in Table 16.

Table 17(a). Multiple Regression Equation I with Dependent Variable (Y_1), the Percentage of Land Owned of Total Land Farmed for All Farmers - 1963

Multiple Coefficient of Determination	.1735		
F Value	1.26		
Independent Variables	Partial Regression Coefficient (Standard Error)	t Values	Simple Correlation Coefficient[1]
Constant Term	- 0.74329		
Number of Tracts Leased in 1951 (X_5)	- 1.66563 (8.3032)	-0.2006	-.08754
Number of Years Renting Tract in 1951 (X_{15})	1.75879 (.1198)	1.4681*	.3072
Age of Landlord in 1951 (X_{14})	0.16147 (.4156)	0.3885	.1877
Number of Acres Owned in 1951 (X_{13})	0.10489 (.0839	1.2500	.1977
Length of Time Land Will be Available (1954) (X_{16})	0.09125 (.1004)	0.9087	.08162
Rent from Relatives (1951) (X_8)	15.00288 (12.2894)	1.2208	.06657
Cash Lease in 1951 (X_{10})	-21.38411 (15.5002)	-1.3796*	-.0880
Livestock-Share Lease in 1951 (X_{11})	-14.26730 (16.6654)	-0.8561	-.0862
Crop Share Lease in 1951 (X_{12})	- 0.89202 (15.0697)	-0.0634	.0885
Age of Respondent (X_2)	0.11061 (.7192)	0.1538	.2395

1. The simple correlation between independent and dependent variable.

* Significantly different from zero at the .10 level.

Table 17(b). The Simple Correlation Matrix of Equation I

	X_5	X_{15}	X_{14}	X_{13}	X_{16}	X_8	X_{10}	X_{11}	X_{12}	X_2
X_{15}	-.1113									
X_{14}	-.0399	.3745								
X_{13}	-.0471	.2295	-.0651							
X_{16}	.0625	-.0209	-.0714	-.0450						
X_8	.0947	-.0605	.2268	-.3351	.1562					
X_{10}	-.0694	.1412	-.0166	-.0588	.1394	.1677				
X_{11}	-.1841	-.1861	.0121	-.1393	.1229	.3017	-.1543			
X_{12}	.3126	.0140	.0180	.2696	.1323	-.1346	-.2006	-.1888		
X_2	-.0344	.6625	.4616	.3959	-.1381	-.2548	.1057	-.1873	.1673	
Y_1	-.0875	.3072	.1878	.1977	.0816	.0666	-.8802	-.0862	.0886	.2395

The importance of (X_{15}) lies in the fact that the longer the land was rented prior to 1951, the greater was the probability of ownership in later years. The simple correlation between (X_{15}) and (X_{14}), the age of the landlord in 1951, was .37. This suggests that the tenant who rented the land for a long time from an older landlordmay have had the opportunity to acquire the land either by purchasing or through inheritance. The fact that (X_8), rent from a relative in 1951, was not highly correlated with (X_{15}), may indicate that little land was rented from relatives over a long term.

It was expected that part-owners would favor cash leases since they often rent smaller tracts for pasture or to supplement their existing operation. The negative relationship in Equation I was expected. While full tenants may hold cash leases than part-owners, there are no tracts rented by full owners -- hence this relationship was biased.

Equation II

The results of Equation II are presented in Table 18. The F value of the second equation was 16.16 and was significantly different from zero at the .01 level of confidence. The multiple coefficient of determination was .6519. This suggests that the information obtained on all farmers in 1963 is relevant in determining the degree of land ownership in 1963.

Table 18(a). Multiple Regression Equation II with Dependent Variable (Y_1), the Percentage of Land Owned of Total Land Farmed for All Farmers - 1963

Multiple Coefficient of Determination	.6519
F Value	16.16*

Independent Variable	Partial Regression Coefficient (Standard Error)	t Values	Simple Correlation Coefficient[1]
Constant Term	-14.36167		
Age of Respondent (X_2)	0.57757 (.3534)	1.6342*	.2242
Education of Respondent (X_3)	0.72879 (1.5724)	0.4635	-.1587
Number of Times Moved Since 1954 (X_4)	9.39862 (6.4818)	1.4500*	.06898
Number of Tracts Leased (1963) (X_5)	- 6.70580 (4.7670)	-1.4067*	.01697
Number of Tracts Acquired by 1963 (X_6)	28.65091 (4.2431)	6.7524***	.7458
Land Obtained from Relative by 1963 (X_7)	20.83957 (7.9087)	2.6350***	.5083
Rent from Relatives (1963) (X_8)	-15.00949 (7.1685)	-2.0938**	-.4319
Attend Veteran's Vocational Ag. Schools, Adult Night School, Ag. Classes, Minn. Farm Management Association (X_9)	4.45192 (8.0114)	0.5557	.05736

1. The simple correlation between independent and dependent variable.
* Significantly different from zero at the .10 level.
** Significantly different from zero at the .05 level.
*** Significantly different from zero at the .01 level.

Table 18(b). The Simple Correlation Matrix for Equation II

	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
X_3	-.3428							
X_4	-.1821	-.0359						
X_5	-.0775	.2211	.0000					
X_6	.1088	-.1310	-.6538	.0830				
X_7	.0276	-.0609	-.3296	.2452	.5045			
X_8	-.3108	.2116	-.1162	-.0800	-.2957	-.2233		
X_9	-.1838	.0445	.1424	.1158	.0173	-.0505	.0810	
Y_1	.2242	-.1587	.0689	.0169	.7458	.5053	.4319	.05936

Table 18 shows the level of significance for each independent variable. Six variables are significantly different from zero at the .10 level. In declining order, the absolute size of the "t" values are as follows:

X_6 - number of tracts acquired by 1963

X_7 - land acquired from relatives

X_8 - rent from relatives

X_2 - age of the respondent

X_4 - number of times moved since 1954

X_5 - number of tracts leased

Of the above coefficients, only the coefficient of (X_4), number of times moved since 1954, was found to be inconsistent with the suggested hypothesis as shown in Table 18.

Certain independent variables were significantly different from zero with 1963 information and yet these same variables were not significantly different from zero with the 1951 and 1954 data. Several examples may be shown to illustrate this. First, the age of the respondent (X_2) was not significantly different from zero with the 1951 data, whereas it was with data for 1963. Using the 1951 data, the simple correlation between

a. X_2 and X_{15} was .66;

b. X_2 and X_{14} was .46;

c. X_2 and X_{13} was .40.

This suggests that when evaluating all farmers in 1963 the inter-correlation among (X_{15}), (X_{14}), and (X_{13}) and (X_2) have masked the effects of age on the degree of land ownership in Equation I.

Second, (X_8), rent from relatives in 1963 is significant in Equation II, but this same relationship is not significant using 1951 data in Equation I. The simple correlation between renting from a relative (X_8) in 1951 and having a livestock share lease in 1951 was .30. This may have increased the standard error of the coefficient of (X_8). It also suggests that (to some degree) those who rented land from relatives in 1951 did so under livestock share leases.

Third, the number of tracts leased (X_5) in 1963 is statistically significant whereas it is not with 1951 data. Therefore the standard error of (X_5) in 1951 is larger because of the intercorrelation and therefore probably has made the "t" smaller than it otherwise would have been.

Several other facets of Equation II are noteworthy. First, the simple correlation between (X_7), land acquired from relatives, and (X_6) number of tracts acquired, is .50. The results of the equation show that while this correlation is important, the relationships of both variables to the dependent variable were also significant. In fact they are the two highest (in order of magnitude in the "t" values) and are important in determining (Y_1), the degree of land ownership for all farmers in 1963. This suggests that the effect of (X_6) and (X_7) are split between the two coefficients. This is due to the fact that only those persons who own some land would be involved in this relationship (since the only criterion was if there was any land acquired from relatives), hence, error was built into the analysis.

Second, the simple correlation between (X_2) the age of the respondent, and (X_3), the education of the respondent is -.34. This suggests the reasonable inference that the opportunity for education in the past was not as great as it is today. Therefore, it is expected that the older respondent will have had less formal education.

Third, neither the age variable (X_2) or the vocational educational variable (X_9) was significantly different from zero at the .10 level in Equation II. Perhaps this was because the effect of education was split into two parts. However, since their simple correlation was in fact -.18, the data indicate that education did not influence the degree of land ownership when all farmers were evaluated in 1963.

Fourth the simple correlation between (X_4) and (X_7) was -.33. This means that there is an association between the frequency with which a respondent acquires land from relatives (through purchasing or inheriting) and the infrequency of moves to another location. This follows the suggested direction of effects of these variables and gives support of the security hypothesis.

Equation III

The results of Equation III are presented in Table 19. The F value was 1.17 and was not significantly different from zero at the .10 level. The multiple coefficient of determination was .38. These two facts suggest that the available information from 1951 on part-owners only is not relevant in determining the degree of land ownership in 1963.

Table 19(a). Multiple Regression Equation III with Dependent Variable (Y_2), Percentage of Land Owned of Total Land Farmed - Part-Owners Only, 1963

Multiple Coefficient of Determination	.3809
F Value	1.17

Independent Variable	Partial Regression Coefficient (Standard Error)	t Values	Simple Correlation Coefficient[1]
Constant Term	7.34503		
Number of Tracts Leased (1951) (X_5)	- 1.80750 (4.3691)	-0.4137	-.18713
Number of Years Renting Tract in 1951 (X_{15})	0.02785 (.7823)	0.0356	.2003
Age of Landlord in 1951 (X_{14})	- 0.03980 (.27316)	-0.1457	.1241
Number of Acres Owned in 1951 (X_{13})	- 0.05452 (.0536)	-1.0163	.01889
Length of Time Land Will be Available (1951) (X_{16})	0.02004 (.0599)	0.3348	.06631
Rent from Relatives (1951) (X_8)	- 0.10416 (7.6582)	-0.0136	.02354
Cash Lease in 1951 (X_{10})	-12.39593 (10.6972)	-1.1588*	-.2843
Livestock Share Lease in 1951 (X_{11})	20.12786 (11.3723)	1.7699**	.4342
Crop Share Lease in 1951 (X_{12})	- 2.57899 (7.5343)	-0.3423	-.1282
Age of Respondent (X_2)	0.94872 (.7111)	1.3342*	.1826

1. The simple correlation between independent and dependent variable.
* Significantly different from zero at the .10 level.
** Significantly different from zero at the .05 level.

Table 19(b). The Simple Correlation Matrix for Equation III

	X_5	X_{15}	X_{14}	X_{13}	X_{16}	X_8	X_{10}	X_{11}	X_{12}	X_2
X_{15}	-.1639									
X_{14}	-.2970	.3476								
X_{13}	-.2396	.1667	-.0805							
X_{16}	.0615	-.2126	-.3103	-.2124						
X_8	.1608	-.0169	.3964	-.4620	.0167					
X_{10}	-.0968	-.1458	.1601	-.2187	-.0157	.3118				
X_{11}	-.2351	-.2092	.1093	-.2187	.1937	.3118	.1111			
X_{12}	.3252	-.2017	-.3081	.1545	.3503	-.1913	-.2010	-.2010		
X_2	-.1542	.5989	.2027	.6743	-.2786	-.3168	-.1312	-.2685	.0593	
Y_2	-.1871	.2003	.1242	-.0189	.0663	.0235	-.2843	.4342	-.1282	.1827

Although this equation was not statistically significant it had three statistically significant independent variables. They were (X_{10}), cash lease in 1951, (X_{11}) livestock share lease in 1951, and (X_2), age of the respondent. Of these, the effects of (X10) and (X_2) were consistent with the hypotheses postulated in Table 16, but the effect of variable (X_{11}) was not. This may be due to the small number of livestock share leases when compared with other forms of renting land.

Equation IV

Table 20 presents the results of Equation IV. The F value was 2.26 and was significantly different from zero at the .10 level. The multiple coefficient of determination was .45. This suggests that the information obtained on part-owners only in 1963 is relevant in determining the degree of land ownership in 1963.

Table 19 gives the level of significance for each independent variable. Two variables are significantly different from zero at the .10 level. They are, in order of the magnitude of the "t" value, as follows:

X_2 - age of the respondent

X_8 - rent from relatives

Both of these variables are consistent with the suggested hypotheses set forth in Table 16.

Table 20(a). Multiple Regression Equation IV with Dependent Variable (Y_2), Percentage of Land Owned of Total Land Farmed - Part-Owners, Only, 1963

Multiple Coefficient of Determination	.4485
F Value	2.26*

Independent Variable	Partial Regression Coefficient (Standard Error)	t Values	Simple Correlation Coefficient[1]
Constant Term	-46.18735		
Age of Respondent (X_2)	1.38605 (.5406)	2.5637***	.50606
Education of Respondent (X_3)	1.76239 (2.1236)	0.8299	-.03418
Number of Times Moved (since 1954) (X_4)	9.43981 (12.1898)	0.7744	-.06280
Number of Tracts Leased (1963) (X_5)	- 6.20681 (5.7775)	-1.0743	-.12035
Number of Tracts Acquired by 1963 (X_6)	13.46810 (11.7882)	1.1427	.44095
Length of Time Land Will be Available (1963) (X_{16})	- 0.12517 (.1073)	-0.1667	-.01972
Land Obtained from Relative by 1963 (X_7)	10.94421 (11.4049)	0.9496	.132796
Rent from Relatives (1963) (X_8)	-12.39268 (9.3827)	-1.3208*	-.34421
Attend Veteran's Vocational Ag. Schools, Adult Night School, Ag. Classes, Minn. Farm Management Association (X_9)	12.71881 (10.8661)	1.1705	.074226

1. The simple correlation between independent and dependent variable.
* Significantly different from zero at the .10 level.
*** Significantly different from zero at the .01 level.

Table 20(b). The Simple Correlation Matrix for Equation IV

	X_2	X_3	X_4	X_5	X_6	X_{16}	X_7	X_8	X_9
X_3	.2781								
X_4	.2992	.0663							
X_5	-.0892	.3201	.0940						
X_6	.3531	-.0173	-.1704	-.2211					
X_{16}	-.0946	.1351	-.3631	-.0147	.2262				
X_7	.0763	.0626	-.5625	.2727	.1740	.0937			
X_8	-.2867	.1573	-.0702	-.1338	-.1376	.0822	-.0702		
X_9	-.3262	.2229	.1288	.1896	-.0229	.0457	-.0468	.1111	
Y_2	.5061	-.0342	-.0628	-.1204	.4410	-.0197	.1328	-.3442	.0742

In comparing Equations III and IV, several factors may be suggested in evaluating why certain independent variables are important and others are not. First, the variable (X_8), rent from a relative, was significantly different from zero, in Equation IV. The simple correlation between:

a. (X_8) and (X_{14}), the age of the landlord in 1951 was .40;

b. (X_8) and (X_{13}), the number of acres owned in 1951 was .46; and

c. (X_8) and (X_2), the age of the respondent was .32.

This suggests that part of the influence of (X_8), renting from a relative, is derived from these three other variables, and hence some of its importance may have been disguised.

Second, information was obtained on all rented tracts in 1963, but only on one tract for each respondent in 1951. There was low intercorrelation between (X_8), rent from a relative, and (X_5) number of tracts leased, in both equations, since the full tenants rent more tracts and tend to have a higher proportion rented from relatives. This created a negative relationship between (X_8) and (Y_2) which is significant at the .10 level of confidence.

Third, the age of the respondent (X_2) was significantly different from zero at the .01 level in Equation IV and at the .10 level in Equation III. The fact that there was high intercorrelation in Equation III between:

a. (X_2) and (X_{15}), the number of years renting the tract in 1951 of -.60;

b. (X_2) and (X_{13}), the number of acres owned in 1951 of .67; and

c. (X_2) and (X_8) renting from a relative in 1951 of -.32.

may have reduced its importance in the form of a lower level of statistical significance.

Results of Hypotheses

The results of the hypotheses being studied in this analysis are summarized below.

Hypothesis 1. The degree of land ownership has a positive relationship with the age of a farmer.

In three of the four equations (II, III, IV) described above, the age of the respondent was found to have an important positive relationship with the degree of land ownership in 1963. In Equation I, age did not appear to be statistically significant but was highly intercorrelated with three other independent variables, one of which, (X_{15}), number of years renting the tract in 1951, was significantly different from zero at the .10 level. Thus an agricultural ladder does exist to some degree in that with age there is a trend toward the acquisition of some ownership rights.

Hypothesis 2. The degree of land ownership has a positive relationship with the education of the farmer.

Education was described by two variables: (X_3), the number of years of formal education, and (X_9), a dummy variable measuring participation in vocational education programs. These variables were used in Equations II and IV and were found not to be statistically significant to the degree of land ownership in either equation. This may be due to the fact (as noted previously) that age was negatively correlated with education in the whole sample and age was positively correlated with the degree of land ownership. Thus, in the sample studied, the higher proportion of owners among older operators would reduce the association between education and the degree of land ownership.

Hypothesis 3. The degree of land ownership has a positive relationship with the security of a farmer's tenure status.

In this analysis three independent variables were used to study this hypothesis: (X_4), the number of times moved since 1954, (X_{15}), number of years renting the tract in 1951, and (X_{10}), length of time land will be available. When the whole sample was studied (Y_1) the relationships between number of times moved since 1954 and the number of years the tract had been rented prior to 1951 were significantly related to the degree of land ownership at the .10 level. With part-owners only (Y_2), none of the relationships of these three variables were statistically significant. Thus these variables which indicate the security of a farmer's tenure status do not appear to be major determinants of ownership patterns. Because of the intercorrelation between the variables in Equations I and II, the effect of these variables may be greater than is shown by the results.

Hypothesis 4. The degree of land ownership has a negative relationship with renting land from a relative, and a positive relationship with acquiring land from a relative.

Two variables were used in this analysis to study this hypothesis: (X_7), land acquired from relatives, and (X_8), rent from relatives. Using the 1951 data only the variable (X_8) could be included. Both for the whole sample (I) and the part-owners only (III), this variable was not found to have an important relationship with the degree of land ownership in 1963. Both of these variables were highly intercorrelated with a number of other independent variables. In Equations II and IV using 1963 data both of these independent variables were significantly different from zero, but not when part-owners were studied. The variable (X_7) was highly intercorrelated with (X_4), number of times moved 1954, and its importance may have been reduced by this intercorrelation. This may indicate that renting from relatives is another factor influencing the security of a farmer's tenure status.

CHAPTER IV

Land tenure research is inherently concerned with dynamic, not static analysis. Where land tenure research is confined to cross-sectional data, only uncertain inferences regarding casual relationships can be made. It is axiomatic that changes occur in the composition of any group of individuals between time periods. The collection of data to permit study of these variations over time is very expensive. An attempt to overcome these difficulties was made by replication of research in studying the same group of individuals over time. This imperfect method has made it possible to go beyond the limits imposed by cross-sectional data in studying changes that are slow but important over time.

The objectives of this study were: (1) to determine the changes in land tenure within a group of individuals who were farmers 13 years ago in Southwestern Minnesota, and (2) to suggest reasons why these changes have taken place. It must be re-emphasized that the initial group of farmers contained no persons who owned all the land they farmed. With this limitation, the group was representative of part-owners and full tenants of the region in 1951. Because of this initial condition (or limitation) there is no reason to believe that the individuals interviewed in 1963-64 were representative of the complete land tenure structure of that region in 1963-64. In addition to the exclusion of full owners in 1952, the study group did not include any new entrants into agriculture over the 13 year period.

Table 21 (consolidated from Tables 1 and 2) summarizes the changes which took place in the initial group of 30 part-owners and 98 full tenants, first surveyed in 1951.

Table 21. Economic Activity in 1963 of 128 Respondents Who Had Been Full Tenants or Part-Owners in 1951

1963 Economic Activity	1951 Tenure Status: Part-Owner Number	Part-Owner Percent	Full Tenant Number	Full Tenant Percent
Farming	(24)	80.0	(62)	63.3
Full Owner	6		15	
Part-owner	17		22	
Full tenant	1		25	
Non-Agriculture Employment	1	3.3	19	19.4
Retired	1	3.3	5	5.1
Deceased	2	6.8	4	4.1
Unknown	1	3.3	1	1.0
Farming but Not Interviewed	1	3.3	7	7.1
Total	30	100.0	98	100.0

The most notable results are:

1. The high proportion of 1951 part-owners who remained farming, relative to full tenants. Almost one-fifth of the full tenants had quit farming while only one part-owner had done so.

2. All but one of the 1951 part-owners either maintained his past tenure status or became a full owner, while of the full tenants still engaged in agriculture, three-fifths of those interviewed had obtained at least some ownership rights. The remaining two-fifths continued as full tenants.

A search for security is apparently a strong motivating force in determining an individual's decision to change his land tenure status. While there is no single measure for evaluating land tenure security, three tests were used to indicate this variable. They were: (1) number of times the farmer changed location of his "home farm" during the 13 year period; (2) number of years renting land; and (3) number of years the tenant believed the land would continue to be available to rent.

Perhaps the most important findings have been the demonstrated importance of (1) leasing arrangements among relatives, and (2) the effect of changes in location. Whether or not the tenant was related to the landlord proved to be more closely associated with increase in the degree of land ownership, or a decision to quit farming, than were type of lease, size of farm, or the level of formal education. And whether or not an individual changed location of his "home farm" proved to be more closely associated with his previous tenure status than with size of farm or the level of formal education.

Many complex institutional patterns and economic factors determine changes in land tenure over time. Recognizing this difficulty, one approach in studying this subject has been to develop

hypotheses regarding key relationships. Any given research project can only study certain elements of land tenure. This study evaluated four basic relationships: the effect of (a) age, (b) education, (c) security, and (d) family business relations on the land tenure status of a particular group of individuals over time. The study disclosed that among those who remained in agriculture over the 13 year period those individuals most likely to own a higher proportion of the land they farmed were those who were older, had received less formal education, anticipated a higher degree of security, and had been related to their landlords.

APPENDIX A

Sampling Technique

The group of individuals interviewed in 1963-64, comprised those who had returned useable mail questionnaires in 1951 and 1954. Table 22 presents the sampling rate and statistics on the rate of return in the 1951 survey for the entire state of Minnesota.[1] For this study the pertinent figure in Table 22 is the report of 215 useable returns in Economic Area 8. Table 23 presents a comparison of data on full tenant leases from the Minnesota Leasing Practices Survey of 1951 and the United States Census of Agriculture for 1950.[2] Little difference was found between the percentage distribution of leases by type of lease in the 1951 survey and the 1950 census. This criterion established that the sample of 215 was representative of farmers in Economic Area 8 in terms of the lease type.

In 1954, as a follow-up study on tenure progress and expectation, mail questionnaires were sent to the 956 respondents to the 1951 survey. There were 518 useable questionnaires returned for the entire state. In Economic Area 8, 128 of the 215 returned useable schedules for this 1954 study.

In 1963-64, 118 of the 128 respondents from the 1954 study provided information on the changing nature of their tenure status,

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1. M. W. Kottke, "A Study of Farm Leasing in the Various Economic Areas of Minnesota," University of Minnesota, unpublished M.S. thesis, 1952, p. 105.

2. Ibid., page 107.

Table 22. Sampling Rate and Rate of Return Statistics, South Central Regional Leasing Practices Study, Minnesota, 1951

Sampling and Economic Area	U.S. Census Full Tenants and Part-Owners, 1950* (Number)	Sample Renters (Number)	Percent Sample of Total (U.S.) Census) Tenants and Part-Owners (Percent)	Rate of Sampling From PWA Files	Returned Useable Questionnaires (Number)	Rate of Return (Number)
Sampling Area I						
Economic Area 1	7201	454	6.3	1 out of 20	167	36.8
2	5051	177	3.5	1 out of 20	30	16.9
3	5905	327	5.5	1 out of 20	75	22.9
4	4498	236	5.2	1 out of 20	57	24.2
Total	22655	1194	5.3		329	27.6
Sampling Area II						
Economic Area 6	14692	1305	8.9	1 out of 12	275	21.1
Sampling Area III						
Economic Area 7	10019	614	6.1	1 out of 20	137	22.3
8	12509	717	5.7	1 out of 20	215	29.8
Total	22528	1331	5.9		352	26.4
All Areas	59875	3830	6.4		956	25.0

*U.S. Census numbers were used to represent the population from which the sample was drawn because PWA lists totals (from which the sample was actually drawn) were unavailable. U.S. Census Data for 1950 is preliminary.

Table 23. Comparison of the North Central Regional Leasing Practices Study Data, 1951, and United States Census Data, 1950, According to Full Tenant Leases by Type of Lease and by Economic Area

Economic Area	Type of Lease						
	Cash	Crop Share	Crop-Share Cash	Livestock Share	Other	Unqualified	Total
			Leasing Practices Study Data, 1951 (Number)				
1 and 3	16	33	37	15	-	-	101
2 and 4	21	4	1	7	-	-	33
6	80	8	21	83	-	-	192
7	33	9	30	32	-	-	104
8	24	27	86	27	-	-	164
All Areas	174	81	175	164	-	-	594
			(Percent)				
1 and 3	15.8	32.7	36.6	14.9	-	-	100.0
2 and 4	63.6	12.1	3.0	21.2	-	-	100.0
6	41.7	4.2	10.9	43.2	-	-	100.0
7	31.7	8.7	28.8	30.8	-	-	100.0
8	14.6	16.5	52.4	16.5	-	-	100.0
All Areas	29.3	13.6	29.5	27.6	-	-	100.0

(continued)

Table 23. (Continued)

Economic Area	Type of Lease						
	Cash	Crop Share	Crop-Share Cash	Livestock Share	Other	Unqualified	Total
			U.S. Census Data, 1950				
			(Number)				
1 and 3	1107	1345	1245	505	211	365	4778
2 and 4	1046	221	197	209	287	346	2306
6	3158	1129	454	1969	232	544	7486
7	1942	1495	616	1588	105	315	6061
8	1373	5258	1001	1016	72	302	9022
All Areas	8626	9448	3513	5287	907	1872	29653
			(Percent)				
1 and 3	23.2	26.1	28.5	10.1	4.4	7.6	100.0
2 and 4	45.4	8.5	9.6	9.1	12.4	15.0	100.0
6	42.4	6.0	15.1	26.3	3.1	7.3	100.0
7	32.0	10.2	24.7	26.2	1.7	5.2	100.0
8	15.2	11.1	58.3	11.3	.8	3.3	100.0
All Areas	29.1	11.8	31.9	17.8	3.1	6.3	100.0

by personal interview. In all but 5 cases the original respondent was contacted. In these 5 cases the schedules were completed on the basis of information provided by their parties. These data are believed to be as accurate as the data that would have been provided by the original respondent.

This study utilizes time series data in order to follow the progress of a particular group of individuals over a 13 year period. It must be emphasized that none of these studies evaluated a representative sample of all farmers or of the complete agricultural land tenure structure in Economic Area 8, for two reasons. First, the 1951 study did not include any full owners. Second, the studies in 1954 and 1963-64 did not include any persons who entered agriculture after 1951.

APPENDIX B

1951 QUESTIONNAIRE

620

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
MINNESOTA AGRICULTURAL EXPERIMENT STATION
AND
U.S. DEPARTMENT OF AGRICULTURE, COOPERATING
FARM RENTAL PRACTICES STUDY

Budget Bureau No.
40-5193.1

Approval Expires
6-30-52

Dear Sir:

Those who rent farms ask many questions about rental arrangements. Who pays new expenses? How can agreements be made to cover changes in farming methods? How can improvements be added? How can livestock be handled?

You can help answer these questions. By filling out the following questionnaire you will be helping yourself and other renters. Please take time to complete and send your reply in the enclosed envelope. It does not take a stamp. A copy of the report will be sent to you. Your reply will be appreciated and will be kept confidential.

Sincerely yours,

S. B. Cleland

S. B. Cleland
Extension Economist in Farm Management
Minnesota Agricultural Extension Service

A. ABOUT YOUR FARM OPERATIONS IN 1951

1. How many acres did you farm in 1951? _____ Acres
2. Of this, (a) how many did you own? _____ Acres (b) how many did you rent? _____ Acres
3. What is your age? _____ Years
4. What were the three main products sold from this farm in 1951? (name the specific crop, livestock or livestock product) (a) _____ (b) _____ (c) _____
5. Number of livestock on hand on December 15, 1951 were:

Beef cows _____	Sows _____	Hens _____
Other beef cattle _____	Other hogs and pigs _____	Broilers _____
Dairy cows and heifers _____	Sheep and lambs _____	Other poultry _____

6. From how many landlords did you rent in 1951? _____ Number

N O T E: Please answer the remaining questions for only one landlord and for the rental agreement with that landlord, if you rent from more than one. Answer for the one whose name is first in the alphabet. Example: If names are Smith and Jones, answer for Jones.

B. ABOUT THE LANDLORD

1. Check ✓ whether land is owned by: Individual _____ Estate _____ Partnership _____
   Corporation _____ Government _____ Other _____
2. How many acres did you rent from this landlord in 1951? _____ Acres
3. Check ✓ whether landlord is:

Active farmer _____	Retired farmer _____	Business or professional man _____
Widow of farmer _____	Non-farm widow _____	Other _____

TURN PAGE FOR QUESTIONS ON THE INSIDE

4. What relation is landlord to you? _____ To your wife _____

5. What is the landlord's age? _____ Years

6. In making the rental agreement for this land, did you deal: (check)
(a) Directly with the landlord? _____ (b) With his agent or manager? _____

7. In discussing the operation of this land, do you deal: (check)
(a) Directly with the landlord? _____ (b) With his agent or manager? _____

C. ABOUT THE RENTAL AGREEMENT WITH THIS LANDLORD

1. Do you live on this rented land? Yes _____ No _____

2. Was the rental agreement with this landlord in writing in 1951? Yes ____ No_____

3. How many years have you rented this land? _____ Years

4. What month of the year does the agreement begin? _____ Month

5. What period does agreement cover? One yr. ___ Three yrs. ____ Five yrs. ____ Other _____

6. How much notice is required to end the agreement? _____ Months

7. Did you pay cash for the use of all or any part of this land in 1951? Yes ____ No _____

8. If any cash was paid, how much was paid per acre for:

Hay land _____ Pasture _____ Building lots _____

How much for: Buildings _____ Other _____ Total farm _____

9. Crop shares: Indicate below the use of this land in 1951 and the landlord's share of the crops, such as: none, 1/3, 2/5, 1/2, or all

Crops	Acres	Landlord's share	Crops	Acres	Landlord's share
a. Corn	____	_____	g. Flax	____	_____
b. Oats	____	_____	p. All pasture	____	_____
c. Soybeans	____	_____	s. All hay	____	_____
d. Wheat	____	_____			

10. Does the landlord own or receive income from any livestock covered by this rental agreement? Yes ___ No ____ If yes, indicate below the landlord's share of ownership and of sales such as: 0, 1/3, 2/5, 1/2, or all.

Kind of livestock	Landlord's share of ownership	Landlord's share of sales	Livestock products	Landlord's share of product sales
a. Dairy cattle	_____	_____	h. Dairy products	_____
b. Dairy calves	_____	_____	i. Eggs	_____
c. Beef cattle	_____	_____	j. Wool	_____
d. Beef calves	_____	_____		
e. Hogs	_____	_____		
f. Sheep	_____	_____		
g. Poultry	_____	_____		

11. Expenses. Indicate the shares of each cash expense on this land, for both you and the landlord such as: none, 1/3, 2/5, 1/2 or all.

Item of expense	Share paid by renter	Share paid by landlord	Item of expense	Share paid by renter	Share paid by landlord
a. Fertilizer			p. Tractor fuel		
b. Lime			q. Weed spray material		
c. Seed, small grain			r. Weed spraying		
d. Seed corn			s. Livestock feed		
e. Seed, grass			t. Breeding fees		
f. Seed, legume			u. Veterinary expense		
g. Seed, soybeans			y. Hay baling		
i. Hired labor			bb. Corn picking		
j. Combine grain			dd. Machinery repair		
k. Combine soybeans			ee. Building repair		
l. Hail insurance			ii. Fence repairs		
			pp. Terracing		

12. Machinery and equipment. Indicate the shares of ownership of farm machinery and equipment used on this land, such as none, 1/3, 2/5, 1/2 or all.

Kind of equipment	Share owned by renter	Share owned by landlord	Kind of equipment	Share owned by renter	Share owned by landlord
a. Tractor			f. Hay baler		
b. Truck			g. Weed sprayer		
c. Combine			h. Manure spreader		
d. Corn picker			i. Milk cooler		
e. Field chopper			j. Milking machines		

TURN PAGE FOR QUESTIONS ON BACK

D. ABOUT IMPROVING RENTAL AGREEMENTS.

1. Are any changes in rental agreements needed to increase the income received by both renters and landlords in your community? Yes_____ No_____

   Describe:_____

   _____

   _____

2. Are any changes in rental agreements needed to increase soil conserving practices on rented farms in your community? Yes_____ No_____

   Describe:_____

   _____

   _____

3. Are any changes in rental agreements needed to encourage keeping more livestock on rented farms in your community? Yes_____ No_____

   Describe:_____

   _____

   _____

4. Are any changes in rental agreements needed to encourage making improvements in buildings and land on rented farms in your community? Yes_____ No_____

   Describe:_____

   _____

   _____

5. Are you satisfied with your rental agreement? Yes_____ No_____

   Why, or why not?

   Describe:_____

   _____

   _____

APPENDIX C

1954 QUESTIONNAIRE

No.

MINNESOTA FARM LEASING SURVEY

I. ABOUT YOUR FARMING OPERATIONS IN 1954

I do not farm any longer ( )

I own _____acres. Includes buildings? Yes ( ) No ( ). Years owned _____.

I rent _____acres. List the rental arrangement below. If you rent from more than one landlord list each arrangement separately.

	Acres	Includes buildings? Yes	No	Years rented	Type of Lease (Check one) Cash	Crop Share	Crop-Share-Cash	Livestock Share
1.	_____	( )	( )	_____	( )	( )	( )	( )
2.	_____	( )	( )	_____	( )	( )	( )	( )
3.	_____	( )	( )	_____	( )	( )	( )	( )
4.	_____	( )	( )	_____	( )	( )	( )	( )

II. IF YOU ARE NOT RENTING THE LAND YOU REPORTED FOR 1951 PLEASE ANSWER THE FOLLOWING: (OTHERWISE TURN TO SECTION III)

1. Why was the rental agreement ended? _____

_____

2. Who asked that the rental agreement be ended? Renter( ) Landlord( )

3. How much time was given as notice to end the agreement?_____Months

4. Was the farmer who followed you on this land a renter( ) or an owner( )?

5. Did your settlement with the landlord at the end of the rental period include any reimbursement to you for improvements (fertilizer, alfalfa, building improvements, etc.) made by you while you rented this land? Yes ( ) No ( )

6. Did you make any improvements for which you believe you should have been reimbursed? Yes ( ) No ( )

Please answer the next 5 questions also

III. IF YOU ARE OR ARE NOT RENTING THE LAND YOU REPORTED FOR 1951 - IN EITHER CASE - PLEASE ANSWER THE FOLLOWING:

1. What is your age?_____Years.

2. Was the land operated by a renter or by an owner just previous to the time you rented it? By a renter( ) By an owner( )

3. Approximately how much rent was paid to this landlord by you? (Use money value if you paid by shares)
In 1951: $_____ In 1952: $_____ In 1953: $_____

(Please turn over)

4. Where did the landlord get his major source of income as far as you could tell?

   a. The rent of this land ( )
   b. The rent plus other sources ( )
   c. Primarily from other sources ( )

5. What would be a reasonable estimate of the value per acre of the land (including buildings if there are any)? $_____

IV. IF YOU ARE RENTING THE SAME TRACT OF LAND AS REPORTED FOR 1951 OR ARE RENTING SOME LAND IN 1954 PLEASE ANSWER THE FOLLOWING: (also answer the five questions above)

Note: Check which one of the farms or tracts you listed in Section I your answers are about: 1_____ 2_____ 3_____ 4_____

1. What are your expectations as far as renting this land in the future?
   a. To own this land eventually ( )
   b. To rent this land until I can buy a different farm ( )
   c. To rent this land as long as I farm ( )
   d. To rent this until I can find another to rent ( )

2. Which of the following is the best explanation of how long this land will be available to you?
   a. As long as I want it or until I am ready to buy it ( )
   b. Until the landlord decides to sell it to someone ( )
   c. Until the landlord decides to rent it to someone else ( )

3. Approximately how many years do you expect this land will be available to you?
   1 to 3 years( ) 4-6 years( ) 7-10 years( ) Indefinite( )

4. Would you like to own this land? Yes ( ) No ( )

5. How many years does the agreement cover? _____ Years

6. What length of time would you prefer the agreement to cover?_____Years

7. How many years ahead do you plan your:
   a. Crop rotation 1___ 2___ 3___ 4___ 5___ years.
   b. Amount and kind of livestock 1___ 2___ 3___ 4___ 5___ years.

8. Have you changed the rental agreement on this land since 1951? Yes ( ) No ( ) If yes, how? (sharing income, length of agreement, etc.)

APPENDIX D

1963-64 QUESTIONNAIRE

G. Ferster
July 18, 1963
Revised Sept. 5, 1963

Replication of 1951-54 Farm Leasing Study in Minnesota

Questionnaire for Minnesota Contributing Project to Regional Project NC-53, "Needed Adjustments in Land Tenure to Meet Changing Agricultural Conditions"

I. General Questions

1. Name and P.O., County, Age _____

2. Children (number and ages) _____

_____

3. What grade are your children in school? _____

4. What is your present occupation? _____

5. How many years has farming been your major source of income? _____

6. Have you ever been engaged in any other occupation before farming?

   What and when? _____

7. Have you attended any school or short courses since you have left

   formal education? _____

8. What was the last grade in school that you attended? _____

II. Person in Farming Whether Remained or Moved

1. How long have you been farming on the land you presently farm? __yrs.

2. Answer the questions which pertain to you:

   a. If you are farming the same land as in 1951-54:
      (1) Did you purchase the entire farm? _____
      (2) Did you purchase part of the farm? ___ How much? _____
      (3) Did you purchase any additional land? _____
      (4) Have you remained as a tenant? _____
      (5) If you haveremained as a tenant, did you want to buy, but the landlord not want to sell? _____

   b. If you are farming but in a different location: From the 1951-54 (interview):
      (1) How many times have you moved: _____(since 1954)
      (2) Have you continued as a renter? _____
      (3) Did you purchase a farm? ____ How large? _____
      (4) If you purchased a farm, how far from the previously rented farm is it? _____

3. How many acres are you presently farming in 1963? _____

4. Of this, how much do you own? ___acres. How much do you rent? ___acres.

5. Have your farming acres increased or decreased since the 1951-54 interview?
   a. If you have remained? ____ How much? _____ acres
   b. If you have moved? _____ How much? _____ acres

6. What are the three main products (name the specific crop, livestock or livestock product--from greatest to least--in order of dollar income value):

Will be sold in 1963	Sold in 1951-54
a. _____ number or acres _____	a. _____ number or acres _____
b. _____ number or acres _____	b. _____ number or acres _____
c. _____ number or acres _____	c. _____ number or acres _____

7. If there was a basic change what was the reason or reasons? _____

_____

_____

8. What type of physical improvements have been made (building and land) since 1951:
   Land: _____

   _____

   Bldg: _____

   _____

9. Who paid for these new improvements (open end) _____

_____

_____

_____

10. Was the government cost-sharing conservation program used? (on land projects) _____ In what way? (be specific) _____

_____

_____

_____

11. Is there a provision in the lease which states that you will be reimbursed for any contribution that you made which will provide future benefit for the farmer? _____yes _____no

12. For those who have remained: Have you ever considered moving? ____ List reasons which kept you from moving, in order from most important to the least important?

_____

_____

_____

III. Questions About the Landlord

1. From how many landlords are you renting in 1963? _____

2. How many acres are you renting from each landlord in 1963? Landlord:

A. _____ B. _____ C. _____ D. _____

3. Who owns the land? (a) Individual, (b) Estate, (c) Partnership, (d) Corporation, (e) Government, (f) Other

A. _____ B. _____ C. _____ D. _____

4. What is the occupation of the landlord? (a) Active farmer, (b) Retired farmer, (c) Widow of farmer, (d) Non-farm widow, (e)Business or professional man, (f) Other

A. _____ B. _____ C. _____ D. _____

5. Has his occupation changed since the 1951-54 interview? ($\frac{1}{\text{yes}}$ / $\frac{2}{\text{no}}$)

A. _____ B. _____ C. _____ D. _____

6. If YES (for Question 5), what was it before?

A. _____ B. _____ C. _____ D. _____

7. Where does the landlord live?

A. _____ B. _____ C. _____ D. _____

8. What relation is the landlord to you?

A. _____ B. _____ C. _____ D. _____

4. What is the landlord's age? A. ___ B. ___ C. ___ D. ___

10. What is the landlord's sex? A. ___ B. ___ C. ___ D. ___

11. In making the rental agreement for this land, (a) did you deal directly with the landlord, (b) did you deal with his or her agent, or (c) both?

A. _____ B. _____ C. _____ D. _____

12. In discussing the operations of this land do you deal: (a) directly with the landlord, or (b) his or her agent, (c) both?

A. _____ B. _____ C. _____ D. _____

13. If you deal with an agent what type is he? (a) Full time farm manager, (b) The Estates agent, (c) Banker, (d) Lawyer, (e) Landlord's friend, (f) Landlord's relative, (f) other

A. _____ B. _____ C. _____ D. _____

14. How often do you meet with the owner or his agent? (a) Once or twice a year, (b) Once a month, (c) Several times a month

A. _____ B. _____ C. _____ D. _____

15. If you deal once or twice a year with the landlord, how are the expenses and revenue paid?

A. _____

B. _____

C. _____

D. _____

IV. About the Rental Agreement With the Landlord (answer if oral or written)

1. Do you live on this rented land? _____

2. Is the rental agreement in writing? _____

3. If your agreement is in writing, what type of form is used?

(a) My lawyer drew it up
(b) USDA forms
(c) Minnesota Extension Service forms
(d) My landlord has a form
(e) Other

4. What month does the agreement begin? _____

5. What period does it cover? _____(in years)

6. If over one year, how was this reached? _____

_____

7. Is the agreement renewable? _____

8. How much notice is required to end the agreement? _____

9. What are your expectations as far as renting this land in the future?

(a) To own this land eventually.
(b) To own this land until I can buy a different farm.
(c) To rent this land as long as I farm.
(d) To rent this land until I can find another to rent.

10. Which of the following is the best explanation of how long this land will be available to you?

(a) As long as I want it or until I am ready to buy it.
(b) Until the landlord decides to sell it to someone.
(c) Until the landlord decides to rent it to someone else.

11. Approximately how many years do you expect this land will be available to you?

1.to 3 years _____ 7 to 10 years _____
4 to 6 years _____ Indefinitely _____

12. Would you like to own this land? Yes _____ No _____

13. What length of time would you prefer the agreement to cover?
_____years

14. How many years ahead do you plan your:

(a) Crop rotation 1___ 2___ 3___ 4___ 5___Yrs.
(b) Amount and kind of livestock 1___ 2___ 3___ 4___ 5___Yrs.

15. Have you changed the rental agreement on this land since 1951? ___
If yes, how? Sharing income, length of agreement, etc. Be as specific as possible.

_____

_____

_____

_____

16. Are there specific clauses in the lease which are concerned with:

(a) Annual soil samples?
(b) The amount and use of fertilizer?
(c) Conservation practice?
(d) Clauses pertaining to hay, straw, pasture, alfalfa, and clover?
(e) Buildings, fences, and improvements?
(f) Weed control?
(g) General nature?
(h) We do things as they are needed.

17. In general, what type of arrangement do you have?

(a) Cash
(b) Crop share
(c) Crop-share cash
(d) Crop and livestock share
(e) Cash and livestock share
(f) Partnership
(g) Other and unspecified

18. To the best of your knowledge: How long has this land been rented?

_____

V. Specific Expenses and Revenue Under Which the Existing Lease Operates

1. If any cash was paid, how much was paid for: (1963)

(a) Hay land (per acre) _____
(b) Pasture (per acre) _____
(c) Building lots _____
(d) Buildings _____
(e) Other items _____ _____
(f) Total farm (per acre) _____

2. Have you considered cash rent on any of the above? (Name which one):

_____

3. Share of equipment:

Kind of Equipment	Share owned by renter/landlord		Kind of Equipment	Share owned by renter/landlord:	
a. Tractor	___	___	f. Weed sprayer	___	___
b. Truck	___	___	g. Manure spreader	___	___
c. Combine	___	___	h. Milk machine	___	___
d. Corn picker	___	___	i. Milk cooler	___	___
e. Haybaler	___	___	j. Other _____	___	___

4. Share of expenses:
(Many of these items may be totally financed by the landlord and the total labor supplied by the tenant. Indicate the share of expenses and when the labor is the only contribution by the tenant then estimate the amount of time spent on each task per year.)

Item of Expense	Share paid by renter/landlord		Item of Expense	Share paid by renter/landlord	
Fertilizer	___	___	Combining grain	___	___
Grass and legume seed	___	___	New building	___	___
Other seed	___	___	Additional heat for buildings	___	___
Hired labor	___	___	Taxes	___	___
Tractor fuel	___	___	Insurance	___	___
Weed spray material	___	___	Corn shelling	___	___
Pre-emergence chemicals	___	___	Feed grinding	___	___
Weed spraying	___	___	Bailer wire	___	___
Livestock	___	___	Existing facilities (e.g. corn storage)	___	___
Breeding fees	___	___	Fence repair	___	___
Veterinary expenses	___	___	Building repairs	___	___
Machinery repairs	___	___	Terracing	___	___
Corn picker	___	___	Well	___	___
Hay bailing	___	___			
Combining grain	___	___			

5. Specified part of the revenue or crop and the split stated in the lease:

(a) The share of the crop:

Corn	___	___	Legume hay	___	___
Oats	___	___	Pasture	___	___
Soybeans	___	___	Other forage	___	___
Canning crop	___	___	Other hay	___	___

(b) The share of ownership and sales proceeds:

Dairy cattle	___	___	Sheep	___	___
Dairy products	___	___	Poultry	___	___
Beef cattle	___	___	Eggs	___	___
Beef calves	___	___	Wool	___	___
Hogs	___	___			

6. If you are farming under a government support plan, what is your sharing arrangement? _____

_____

_____

7. Is any land that you are farming being taken permanently out of land which could be used for production? _____

(a) If you are an owner: What use will the land be put to?

_____

(b) If you are a renter: What use will the land be put to?

_____

VI. Persons Who Moved to Another Occupation

1. When did you leave farming? _____

2. List the following reasons which were involved in your decision to change occupations:

   (a) Retired
   (b) Health reasons
   (c) The family grew up, and I felt that I could move to the city
   (d) I was forced out of farming due to the great capital requirement
   (e) I felt that more profit could be made in a different occupation
   (f) I had always wanted to do this type of work
   (g) My wife wanted me to switch occupations
   (h) Other: _____

3. Was the farmer who followed you on this land a renter ( ) or an owner ( )?

VII. If You Are Now an Owner (Either Full or Part)

1. When did you buy the land? _____

2. From whom did you buy the land? _____

3. Is the title in your name? _____

4. What method did ( ) are you ( ) obtaining ownership to the land?

   ( ) Contract for Deed
   ( ) Mortgage
   ( ) Cash
   ( ) Other; _____

5. What type of credit facility was ( ) is being ( ) used to finance the land?

   ( ) Federal land bank associations
   ( ) Commercial banks
   ( ) Insurance companies
   ( ) Individuals
   ( ) Other _____

6. At what Rate of Interest was the land financed? _____%

7. What was the initial down payment (in percentage of full value) _____%

8. How long will it be before you obtain total ownership of the land? _____years

9. What is the annual payment for the land? $_____

10. Who designed the financing program for you and the landlord?

( ) Lawyer
( ) The banker
( ) We did it ourselves
( ) The landlorddid it himself
( ) PCA
( ) Government Agency
( ) Other _____

11. What other special provisions are in the financing program? _____

_____

_____

VIII. Rural Level of Living

1. When did your farm obtain electricity? _____

2. When did your farm obtain telephone service? _____

3. When did your farm obtain a home water system? _____

4. When did you purchase your first automobile? _____

5. When did you purchase your present automobile? _____

6. Did you have an automobile from your first purchase and your present one? _____

7. What was the value of products sold or traded from your farm last year? (1962) $_____

8. How many of the following items do you have and when did you obtain them?

Item	Number	Year Obtained
Automatic Dishwasher	_____	_____
Black and White Television	_____	_____
Color Television	_____	_____
Radio	_____	_____
Extension Telephones	_____	_____
Deep freeze	_____	_____
Window Air Conditioner	_____	_____
Automatic Clothes Dryer	_____	_____
Electric Blanket	_____	_____
Magazine Subscriptions	_____	_____
Outdoor Grill	_____	_____
Book Club Membership	_____	_____
Hi-Fi Set (wattage)	_____	_____
Motor Boat	_____	_____
Outboard Motor (horsepower)	_____	_____

9. What recreational activities do you and your family participate on a regular basis?

Items	Times Per Month Winter Months	Summer Months
____ Movie (individuals)		
____ Movies (as a family)	____	____
____ Team sports (individuals)	____	____
____ Team sports (as a family)	____	____
____ Individual sports (hunting, fishing, bowling, golf, other)	____	____
____ Family activities sports (participate)	____	____
_____		
____ Attend large cities for concerts and plays	____	____
____ Spectator sports (individual)	____	____
____ Spectator sports (family)	____	____
	____	____

10. How many vacations have you taken during the past five years (excluding weekends)? _____

What is the average distance traveled on each vacation? _____

About how much did each vacation cost for the family? $_____

Did you camp? _____

IX. Questions Dealing with Rank of Satisfaction

Answer the following questions by using the scale below:

1 extremely satisfied
2 very satisfied
3 better than average satisfied
4 satisfied (average)
5 below average satisfaction
6 unsatisfied

1. How satisifed are you with your present occupation? ____
2. How satisfied is your wife with your present occupation? ____
3. How satisfied are you with the school system your children attend? ____
4. How satisfied are you with the new type of farming operation? ____
5. How satisfied are you with your rental agreement? ____
6. If you have changed occupations: How satisfied are you with the change? ____

X. Questions About Improving Rental Agreement

1. Is your rental agreement similar to those of other renters who are engaged in the same type of farming in your community? _____
If not, how does it differ? _____

_____

2. Are any changes in rental agreements needed to increase the income received by both renter and landlord in your community? _____
Describe: _____

_____

3. Are there any changes in rental agreements needed to increase soil conserving practices on rented farms in your community? _____
Describe: _____

_____

4. Are there any changes in rental agreements needed to encourage keeping more livestock on rented farms in your community? _____
Describe: _____

_____

5. Are there any changes in rental agreements needed to encourage making improvements in building and land on rented farms in your community? _____ Describe: _____

_____

XI. Net Worth Statement

Assets		Liabilities	
1. Cash	_____	1. Charge Accounts	_____
2. Notes Receivable	_____	2. Short-term loans	_____
3. Bonds	_____	3. Long-term loans	_____
4. Value of Livestock	_____		_____
5. Value of Machinery	_____		
6. Value of Real Estate	_____		
7. Value of Crop and Feed Inventory	_____		
	_____		

XII. Index of Innovation

1. Where do you get most of your new ideas which can be used on the farm to adopt new policies?

( ) Farm magazines
( ) Neighbors
( ) Relatives
( ) University
( ) Private Companies
( ) State Fair
( ) County Agent
( ) Other _____

2. Have you used or considered using any of the items listed below:

		Year started	Presently using	Have considered to use	Hope to use	Have considered will not use
1.	1. Pre-emergence chemicals					
	2. Dairy-Bulk tank holding of milk					
	3. Feeder-sorew Conveyor					
	4. Hog-Lagoon system					
	5. Larger Machinery-by trading					
	6. Soil testing					
	7. Plant population-plan					

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