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# Ownership of Iowa's Farmland

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# Ownership of Iowa's Farmland<sup>1</sup>

BY ROGER W. STROHBEHN AND JOHN F. TIMMONS<sup>2</sup>

Ownership of land by farmers has always been an important objective of farmers and of public policy. This study was undertaken to determine the extent to which this objective is being realized in Iowa and to identify the processes through which the objective is being achieved or blocked. Data obtained in this study should prove helpful in evaluating the achievement of farm ownership objectives in terms of current problems, practices and processes. These data should contribute toward a re-evaluation of the ownership objective and possible adjustments in ownership policies and programs.

## GENESIS AND DEVELOPMENT OF FARM OWNERSHIP IN IOWA

An understanding of the current farmland ownership situation necessitates becoming familiar with the general outlines of the origin and development of farm ownership in the state. This appears necessary because ownership is a process including institutions and objectives which have evolved over a long period of time.

Settlers began moving into the Iowa territory in 1833 — preceding the survey teams by 3 years and the sale of public lands by 5 years — disregarding the act of 1807 which prohibited "squatters" from occupying the public domain. These early pioneers were depending on the growing pre-emption principle which would guarantee them first option to buy the land they occupied. This principle did not become law until 1841.

At initial land auctions in 1838, Iowa land was sold in large tracts of 6 square miles, too large to be purchased by individual settlers. To protect "their claims" on smaller tracts, settlers organized claim associations in the various frontier communities, each with its official bidder and an arbitration committee to settle boundary disputes arising among the settlers. If a speculator tried to overbid the association bidder, he was promptly "persuaded" by members of the association to refrain from such action. At later auctions the government sold land in one-half and one-quarter sections which were more nearly in line with the

settlers' needs and ability to purchase. Consequently, claim associations were no longer needed.

Military land warrants entitling each holder to 160 acres of land, were granted by the federal government in 1847 to those who served in the Mexican War. These warrants became transferable in 1852 and were bought and sold like bonds, with published quotations in Boston and New York.<sup>3</sup> Military warrants transferred about 40 percent of Iowa's land area, providing a great source of land for investors and speculators (table 1). Many of the warrants were distributed to those not interested in establishing farms on the frontier.

The government was aware of the need for education and of a revenue source to provide for education. To this end over 2 million acres of land were granted to the state. Railroad grants for internal improvement accounted for over 4 million acres. Other grants eventually used for internal improvement amounted to over 2 million acres.

The settlers did not like the discrimination shown by the federal government in granting large quantities of free land to railroads and the practice of providing military land warrants to war veterans, while the settlers had to purchase their land. Finally their voices demanding free land grew strong enough to reach the sympathetic ears of President Lincoln, who signed the Homestead Act of 1862. It came too late to be much help to Iowa, for most of the land had already been sold or given away. Only 8,835 homestead claims were entered on Iowa plat books, which accounted for almost 3 percent of Iowa's land. While the Homestead Act was the last act directly involving the disposition of the public domain in Iowa, it did not mark the end of the problems for individuals seeking to acquire and operate their own land.

<sup>3</sup> Murray, W. G. Struggle for land ownership. In, A century of farming in Iowa. Ch. 1. Iowa State University Press, Ames, 1946. pp. 1-17.

TABLE 1. DISPOSAL OF IOWA LAND BY THE FEDERAL GOVERNMENT.

Method of disposal	Amount of land	
	(acres)	(percent)
Sale .....	11,916,276	33.2
Military grants.....	14,099,825	39.3
Internal improvement grants.....	6,717,392	18.6
Education grants.....	2,108,483	5.8
Homestead grants.....	902,000	2.8
Other .....	121,463	0.3
Total.....	35,865,439	100.0

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As the remaining land became homesteaded in Iowa and surrounding areas, individuals seeking a career in farming were forced to purchase land at increasing prices. Adequate real estate credit arrangements were not available. Interest rates of 25 percent were not uncommon.<sup>4</sup> Farmers had the alternatives either of borrowing money at high rates of interest to become owners or of renting an improved farm and using their small amount of capital for operating expenses. Tenancy began to increase rapidly at this time.

Congress passed the Federal Farm Loan Act in 1916, creating the Federal Land Bank System with affiliated National Farm Loan Associations operating at the local level. The Federal Land Banks introduced long-time amortized mortgages at low interest rates and refinanced farm mortgage indebtedness in emergency periods. The ideas and provisions incorporated into the farm credit field were a great boon to farmers struggling for ownership.

In spite of the efforts of the government to encourage owner-operatorship by providing improved credit arrangements, land prices continued to rise, and farmers went further into debt. The depression of 1929 left many farmers trying to make payments on mortgages contracted at inflated prices with the proceeds of the sale of goods at deflated prices. Foreclosures took place at a rapid rate, increasing the proportion of farmers who rented all their land from 41.7 percent in 1920 to 49.6 percent in 1935.

The distress of the farmers losing ownership of their farms resulted in the passage of the Bankhead-Jones Farm Tenant Act in 1937. This act created what is now the Farmers Home Administration, enabling farm tenants to avail themselves of "farm ownership loans" to be repaid on amortized schedules over a period of 40 years at 3 percent interest. A second feature of this act provided "farm operating loans" for the purchase of livestock and equipment and to refinance indebtedness for both farm owners and tenants. These two types of loans were made available to farmers to strengthen their position in bargaining for credit and thus remove some of the obstacles to owner-operatorship.

World War II requirements of agricultural products were very great, resulting in high prices of farm commodities. Memories of the depression were still vivid in the minds of Iowa farmers, and many of them were quick to use profits to pay the remaining balance of outstanding mortgages and obtain clear title to the land they operated. By 1945, 45 percent of the farm operators were full-owners, and another 12 percent were part-owners.

At present, however, there appears to be a trend leading away from owner-operatorship. Average farm size has increased from 165 acres in 1945 to 177 acres in 1956, while the average value of Iowa farms has increased from \$104.81

per acre in 1945 to \$213.62 per acre in 1956.<sup>5</sup> As these increases have taken place, the proportion of owner-operators has declined from 45 percent of all operators in 1945 to 40 percent in 1954. Apparently the large capital investment needed to own and operate a farm is causing tenancy to increase. A capital investment of approximately \$55,000 to \$65,000 is required to own and operate an average Iowa farm.<sup>6</sup>

Not only is owner-operatorship decreasing; but the amount of outstanding mortgages on Iowa farmland is increasing. Between 1950 and 1958, mortgage debt on Iowa farms increased from \$434 million to \$750 million.

#### OBJECTIVES OF STUDY

The purpose of this study was to obtain information needed to understand more fully the farm ownership conditions in Iowa. More specifically, this study was conducted to determine: (1) tenure patterns of farmland ownership, (2) characteristics of owners of farmland, (3) how farm ownership is acquired and (4) owners' plans for transferring farms to the next generation.

#### METHODS AND PROCEDURE

To obtain the information needed for this study, a questionnaire was mailed to a stratified random sample of Iowa landowners.<sup>7</sup> The list of owners was prepared from the corn listing sheets of the Agricultural Stabilization Committee in each county of the state.

The state was divided into seven economic areas to allow regional comparisons. To obtain a statistically reliable sample in each area, a return of 300 usable questionnaires per area was needed. A return of 25 percent was expected; therefore 11,002 questionnaires were sent out. A total of 2,576 usable questionnaires was returned (see table 2 and fig. 1).<sup>8</sup> Regional designations are as follows: area 1, Northwest Livestock; area 2, Southwest Livestock; area 3, Northern Grain; area 4, North Central Grain; area 5, Southern Pasture; area 6, Northeast Dairy; and area 7, Eastern Livestock.

All questionnaires were edited, and the answers were then coded and punched on punch cards. If

<sup>5</sup> U. S. Bureau of the Census. U. S. census of agriculture, 1954. Vol. 3, part 5. 1956.

<sup>6</sup> These estimates are based on census data showing average value of farm real estate, \$43,921; value of machinery and equipment, \$5,909; farm expenditures, \$3,691; and livestock inventories, \$3,400. U. S. census of agriculture, 1954.

<sup>7</sup> See Appendix D for copy of questionnaire used in this study.

<sup>8</sup> See Appendix B for bias check on nonrespondents.

TABLE 2. NUMBER OF QUESTIONNAIRES MAILED OUT AND PROPORTION RETURNED FOR EACH AREA.

Area	Questionnaires mailed out		Questionnaires returned	
	(number)	(percent)	(number)	(percent)
1.....	1,294	23.2	336	26.1
2.....	1,343	20.7	275	20.7
3.....	1,176	28.4	331	28.4
4.....	1,234	27.8	342	27.8
5.....	2,246	20.6	458	20.6
6.....	1,297	24.4	317	24.4
7.....	2,412	21.6	517	21.6
Iowa.....	11,002	23.6	2,576	23.6

<sup>4</sup> Usher, I. L. Letters of a railroad builder. Palimpsest. 1953. p. 18.

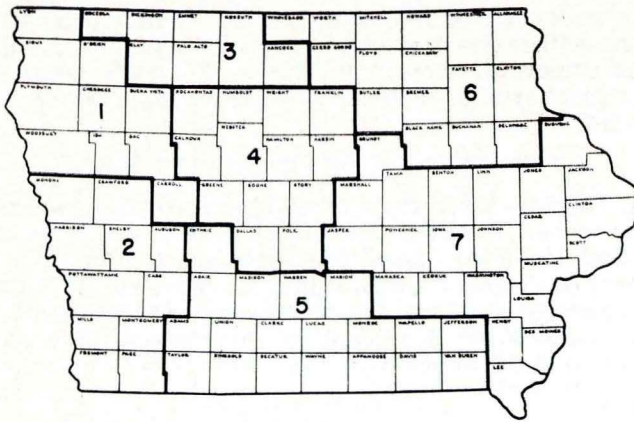


Fig. 1. Economic areas within Iowa.

a question could not be edited, the question was marked "X" and omitted from the tabulations.

#### DETERMINATION OF SIGNIFICANT DIFFERENCES

To test for a significant difference between two percentages, a set of nomograms was devised for the 95-percent and the 80-percent confidence levels. An explanation of the use of these nomograms is found in Appendix A.

Differences between some percentages were obviously significant and were not tested prior to the analysis of the data. In less obvious cases, the differences were first tested at the 95-percent confidence level. If a significant difference was detected, appropriate statements were made. Data with nonsignificant differences at the 95-percent level were then tested at the 80-percent confidence level. If no significant difference was detected at this level, it was assumed that the difference was due to sampling variation or nonsampling errors.

Subdivisions of data which resulted in samples of less than 100 units were not used in comparisons between two independent samples. Sampling variation (as well as nonsampling errors) existing in a small group is so great that reliable comparisons are not obtainable.

The general procedure outlined above was followed for each of the necessary comparisons to make reliability statements concerning the hypotheses of the study. Significant differences between percentages of 1946 and 1958 data have been noted in each of the tables.

#### SAMPLING RATES

Owners possessing more than one farm had varying chances of being selected for the random list of owners to which questionnaires were mailed; that is, they appeared in the corn lists as many times as they had separate farms. To reflect in the estimates the different chances owners had of entering the sample, each questionnaire was assigned a weight based on the number of times each owner would have been expected to appear on the corn listing sheets of the Agricultural Stabilization Committees. The questions were such that each was to report on all the land he

owned, etc., rather than just on the farm that brought him into the sample (in case of multiple listings). The weight used was the reciprocal of the number of farms each owner reported as determined by a question directed to all sample members.

The sampling rate varied according to strata (areas) and the "effective" sampling rate according to the percentage of questionnaires returned from each area. The varying chances of an owner entering the sample, first, because of being on the list more than once and, second, because varying "effective" sampling rates per area, are embodied in the term  $p_i$ .

Estimates were made separately for each area; they were then summed over areas for state estimates.

The formulas used to calculate the various estimates are:

$$\text{Estimate of area number of owners} \quad \hat{N}_j = \frac{1}{n} \sum_{i=1}^n (1/p_i)$$

$$\text{Estimate of state number of owners} \quad \hat{N}^1 = \sum_{j=1}^a \hat{N}_j$$

$$\text{Estimate of area total} \quad \hat{Y}_j = \frac{1}{n} \sum_{i=1}^n (y_i/p_i)$$

Where the sample sum is found over the units in the  $j^{\text{th}}$  stratum (area)

$$\text{Estimates of state total} \quad \hat{Y} = \sum_{j=1}^a \hat{y}_j$$

$$\text{Estimates of area mean} \quad \bar{Y}_j = \frac{\frac{1}{n} \sum_{i=1}^n (y_i/p_i)}{\frac{1}{n} \sum_{i=1}^n (1/p_i)}$$

$$\text{Estimates of state mean} \quad \bar{Y} = \frac{\hat{Y}}{\hat{N}^1}$$

Symbols in the preceding equations are:

- $a$  = number of areas
- $y$  = observation
- $j$  = individual area
- $\hat{Y}$  = estimate of total
- $n$  = number of farm owners observed
- $\hat{N}^1$  = estimate of total number of owners
- $i$  = individual owner or observation

$$p_i = \frac{t_i}{N_j} \quad \text{the probability for } i^{\text{th}} \text{ name to be selected at each draw where } t_i = \text{number of lines for } i^{\text{th}} \text{ owner}$$

$$N_j = \text{total number of lines on corn list}$$

## OWNERSHIP INTERESTS OF LANDOWNERS

Owners of farmland are usually grouped as owner-operators and landlords. Yet there are important differences within these groups in terms of the nature of interests owners hold in land. It was not feasible in this study to include all interests owners may hold in land.<sup>9</sup> Ownership interests in this study were limited to (1) complete ownership, (2) land installment contract interests, (3) undivided interests, (4) life estates and (5) combinations of these interests.

Some owners, both landlords and owner-operators, hold complete interests in land. These interests may or may not be subject to mortgage claims of a mortgagee. In an effort to identify this particular kind of ownership interest, the following question was asked respondents:

- A. 1. How many acres of farmland do you (and your wife or husband) own in Iowa? Include land mortgaged or land in which you own only an interest as well as land owned free of debt. .... acres.
  - a. How many of these acres in "A.1." above do you (and your wife or husband) own as sole owner (s)? ..... acres. Of these solely owned acres:
2. How many acres are mortgaged? ..... acres.
  - (a) How much debt is still owed? \$.....
3. How many acres are fully paid for? ..... acres.

Other owners may be in the process of buying a farm through purchase contract arrangements (land installment contracts).<sup>10</sup> These owners have fewer rights in their land than complete owners even though there may be mortgage claims against the complete-owner farm, since the title to contract-purchased land remains with the seller. In an effort to identify contract-purchased land in this study, respondents were asked this further question:

Of these solely owned acres:

1. How many acres are you buying under purchase contract or contract for deed? (Do not include mortgaged land.) ..... acres.
  - (a) How much debt is still owed? \$.....

Other owners may share interests in lands by holding undivided interests. In an effort to identify these interests, respondents were asked this further question:

- c. How many acres in "A.1." above are in unsettled estates (other than life estates) partnerships, or other undivided interests? ..... acres.

Still other owners may hold life estates in land limited to the lifetime of the owner. These interests cannot be sold or otherwise transferred by the owner. In an effort to identify life interests, the following question was asked respondents:

- b. How many of the acres in "A.1." above do you have a life estate in? (Life estate refers to land which you own and control during your lifetime, but cannot sell, trade, or otherwise transfer.) ..... acres.

<sup>9</sup> For a more complete exposition of ownership interests in land see: O'Byrne, John C. and Timmons, John F. Planning farm property transfers within families in Iowa. Iowa Agr. and Home Econ. Exp. Sta. and Iowa Coop. Ext. Serv. Bul. P125. 1958. pp. 9-12.

<sup>10</sup> For a discussion of land contracts, see: Roan, James E., Harris, Marshall and Timmons, John F. Land contract or mortgage? Iowa Farm Science 14:383-386. Nov. 1959.

Analyses of responses to these questions are presented in terms of the prevalence of ownership interests, ownership interests by tenure, age of owners, sex of owners and tenure experience of owners.

## PREVALENCE OF OWNERSHIP INTERESTS

Slightly more than three-fourths of the owners reported complete ownership interests in their land (table 3). Land contracts and undivided interests forms of ownership were reported by 7 and 6 percent, respectively, of the owners. Life estates accounted for 3 percent of the owners. The remaining 7.5 percent of the owners reported combination of interests.

Compared with results of the 1946 study, several changes in ownership interests are noted. Complete ownership decreased from 81.6 to 76.3 percent of the owners (table 3).<sup>11</sup> Slight increases appeared in the other ownership interests.

TABLE 3. DISTRIBUTION OF OWNERS BY OWNERSHIP INTERESTS, IOWA, 1946 AND 1958.<sup>a</sup>

Ownership interests	Respondents reporting			
	1946		1958	
	(number)	(percent)	(number)	(percent)
Complete ownership.....	1,048	81.6	1,064	76.3*
Land contract.....	88	6.8	97	6.9
Undivided interest.....	63	4.9	90	6.4
Life estate.....	31	2.4	40	2.9
Combination of interests.....	55	4.3	103	7.5
All interests.....	1,285	100.0	1,394	100.0

<sup>a</sup> Information for 1946 was adapted from unpublished data.

\* Significant difference at the 95-percent confidence level.

## OWNERSHIP INTEREST BY TENURE OF OWNER

In an effort to understand the nature of ownership of Iowa's farms, ownership interests were classified by tenure of owner. For purposes of this classification, all owners were classified as owner-operators, operator landlords or nonoperator landlords. Owner-operators include farm-operating owners who own part or all of the land they operate. Operator landlords include owners who operate part of the land they own. Nonoperator landlords do not operate any of the land they own.

Owners holding complete ownership interests are divided about equally between owner-operators and nonoperator landlords (table 4). Most land contract owners, 82.5 percent, are owner-operators. Most of the owners with undivided interests in land are nonoperator landlords. Ninety-four percent of the life estate owners are in the nonoperator owner group. The large proportion of nonoperator landlords in these latter two groups of ownership interests reflect involuntary ownership resulting from estate settlement.

Comparisons of results of the 1946 and 1958 studies reveal several important shifts in ownership interests between tenure groups (table 4). The proportions of owners holding life estates and

<sup>11</sup> Timmons, J. F. and Barlowe, R. Farm ownership in the Midwest. Dept. Econ. and Soc., Iowa State University, Ames, Iowa. (Unpublished.) 1946.

TABLE 4. DISTRIBUTION OF OWNERS WITHIN OWNERSHIP INTERESTS BY TENURE OF OWNER, IOWA, 1946 AND 1958.<sup>a</sup>

Ownership interests	Respondents reporting		Owner-operator		Operator landlord		Nonoperator landlord	
	1946	1958	1946	1958	1946	1958	1946	1958
	(number)	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Complete ownership.....	1,048	1,064	47.7	47.9	12.1	5.3*	40.2	46.8*
Land contract.....	88	97	84.1	82.5	4.5	3.5	11.4	14.0
Undivided interest.....	63	90	38.1	33.8	11.1	1.7	50.8	64.5
Life estate.....	31	40	29.0	5.9	b	b	71.0	94.1
Combination of interests.....	55	103	36.4	29.2	40.0	13.5	23.6	57.3
All interests.....	1,285	1,394	48.8	47.2	12.4	5.4*	38.8	47.4*

<sup>a</sup> Information for 1946 was adapted from unpublished data. Timmons and Barlowe, *ibid.*

<sup>b</sup> Less than 0.05 percent.

\* Significant difference at the 95-percent confidence level.

TABLE 5. DISTRIBUTION OF OWNERS WITHIN OWNERSHIP INTERESTS BY PRESENT AGE OF OWNER, IOWA, 1958.

Ownership interests	Respondents reporting	Age of owners in years					
		Under 25	25-34	35-44	45-54	55-64	65 years and over
	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Complete ownership.....	1,543	0.1	3.0	14.1	25.8	27.1	29.9
Land contract.....	105	1.2	27.9	35.3	25.4	9.2	1.0
Undivided interest.....	87	1.3	7.2	15.4	22.8	23.1	30.0
Life estate.....	39	—	—	—	4.1	18.6	77.3
Combination of interests.....	106	—	3.9	11.7	22.7	26.6	35.1
All interests.....	1,880	0.2	4.7	15.0	25.0	25.6	29.5

undivided interests decreased in the farm operator groups and shifted to the nonoperator group. This shift may be explained by changes in farm property transfer arrangements which are discussed in a later section of this report.

#### OWNERSHIP INTEREST BY AGE OF OWNERS

Further insight into ownership interests may be gained from observing the age of owners in the several interest groups. Most of the land contract owners are in the younger age groups. This might be expected since the land contract owners are endeavoring to obtain ownership with limited capital (table 5). As they accumulate capital and amortize their contract obligations, they shift to the complete ownership group.

As might be expected, owners of life estates are in the more elderly age groups (table 5). Over three-fourths of these owners are 65 years of age and older. These owners, for the most part, are women who have received life estates from their deceased husbands.

#### OWNERSHIP INTEREST BY SEX OF OWNERS

The nature of ownership interest appears to be related to sex of owners. Women owners are more

TABLE 6. DISTRIBUTION OF MEN AND WOMEN OWNERS BY OWNERSHIP INTERESTS, IOWA, 1946 AND 1958.<sup>a</sup>

Ownership interests	Men		Women	
	1946	1958	1946	1958
	(percent)	(percent)	(percent)	(percent)
Complete ownership.....	82.6	87.6*	74.7	65.3*
Land contract.....	7.8	7.0	0.6	1.2
Undivided interest.....	3.7	4.0	12.6	13.2
Life estate.....	1.3	0.5	9.8	12.5
Combination of interests.....	4.6	0.9*	2.3	7.8*
All interests.....	100.0	100.0	100.0	100.0
Respondents reporting.....	1,111	1,651	174	265

<sup>a</sup> Information for 1946 was adapted from unpublished data.

\* Significant difference at the 95-percent confidence level.

inclined to hold undivided interests and life estates than are men (table 6). Over one-fourth of the women owners reported these two interests as compared with only 4.5 percent of the male owners in 1958. As indicated in the previous section, this relationship results from estate settlements wherein wives inherit interests in land from their deceased husbands.

From comparisons of results of the 1946 and 1958 studies, ownership interests held by women appear to be shifting toward life estates and combination of interests (table 6). On the other hand, male ownership interests appear to be shifting away from life estates and combinations of interests toward complete ownership interests.

#### ACQUISITION OF FARM OWNERSHIP

Acquisition of a debt-free title to land has been of great importance to Iowa farmers from the beginning of the settlement days. Many of the problems experienced by the settlers and their descendants have been overcome through legislation favorable to, or at least compatible with, owner-operatorship. The problem of capital accumulation has received much attention in past years. The increasing quantity of capital needed to own and operate a farm has made the capital accumulation period longer and the acquisition of a farm quite difficult. For some individuals the problem has been simplified by receiving gifts, an inheritance or liberal family assistance.

#### METHODS OF ACQUISITION

Current ownership of farms has been acquired through: (1) purchase from relatives, nonrelatives or both; (2) gifts, inheritances or both; (3) other or undetermined methods; or (4) some combination of these.

One of the consequences of rising land value has been the importance attached to gifts in land acquisition. The time spent in accumulating capital for a cash purchase or the time an owner spends while paying off a mortgage may be long unless the individual receives family aid of some type. While the majority of owners have acquired ownership by outright purchase, nearly 30 percent have obtained their farms by gifts, inheritances or a combination of methods involving these two (table 7). As would be expected, more women than men owners acquire land through gifts or inheritances.

The importance of gifts in the acquisition of land in the early years of an individual's life is shown in table 8. It is noted that of the individuals who acquired land before they were 25, the proportion of individuals gaining ownership by a combination of methods involving gifts and inheritances is significantly greater than purchase from relatives and is also greater than the method of purchase from nonrelatives. The implication from this is that family assistance in the form of gifts or inheritances is more important to the younger age group than to the age groups of 25 and over. The modal age group of each of the methods of acquisition groups, except gifts or inheritances, is the 25-34 age interval, indicating that a large number of individuals acquire ownership at an early age.

The difficulty in accumulating the capital required to purchase a farm coupled with the decline in farms held by corporations, suggests that prospective owners look to their families for help

more now than in the past. Comparisons of data gathered in 1946 and 1958, however, failed to show an increase in methods involving gifts or inheritances at the 80-percent confidence level (table 9). Apparently very little change has occurred during the past 12 years in the methods used by individuals to acquire ownership.

The fact that retired farmers indicated they had made greater use of gifts or inheritances than active farmers should not be taken to mean that gifts or inheritances are decreasing in importance. The main reason for this difference is that retired farmers are older and have had more time to be the recipients of gifts or inheritances.

The number of landlords who reported receiving land by methods involving either gift or inheritance was more than twice as great as among the owners operating their own land (table 10). Nearly two-fifths of the landlords acquired ownership through the use of gifts.

Evidence indicates that if it were not for the gifts and inheritances, some of the operator landlords would still be owner-operators. Many owners do not receive gifts or inheritances until after they have become owners or have established themselves in business. Receiving land under these conditions enables the new owner to become a landlord merely by leasing his new farm while retaining his established farm or business.

The large number of nonoperator landlords obtaining ownership by gifts implies that many of the owners who are not farmers became owners without actively seeking ownership. Data shown in table 9 support this, for it is seen that approximately 55 percent of the housewives, 34 percent

TABLE 7. DISTRIBUTION OF OWNERS BY METHOD OF FARM OWNERSHIP ACQUISITION, IOWA, 1946 AND 1958.<sup>a</sup>

Method of acquisition	All owners		Men		Women	
	1946 (percent)	1958 (percent)	1946 (percent)	1958 (percent)	1946 (percent)	1958 (percent)
<b>Single methods:</b>						
Land purchase						
From relatives only .....	11.9	14.0**	12.9	14.6	5.4	10.2**
From nonrelatives only .....	51.2	51.1	55.3	54.6	24.2	30.7**
From both relatives and nonrelatives.....	4.4	5.8**	4.7	6.1**	2.7	4.4
Gift or inheritance.....	11.1	11.7	5.5	7.3**	47.6	37.1*
Other or undetermined method.....	2.1	0.2**	2.0	0.1**	3.4	0.9**
<b>Combinations of methods:</b>						
Combinations involving gift or inheritance..	17.5	17.2	17.8	17.3	15.4	16.7
Combinations involving purchase from relatives but no gift or inheritance.....	0.7	—	0.8	—	—	—
Combinations involving no family assistance .....	1.1	b	1.0	b	1.3	—
<b>Number reporting:</b> .....	1,121	1,810	972	1,548	149	262

<sup>a</sup> Information for 1946 was adapted from unpublished data. Timmons and Barlowe, *ibid.*

<sup>b</sup> Less than 0.05 percent.

\* Significant difference at the 95-percent confidence level.

\*\* Significant difference at the 80-percent confidence level.

TABLE 8. DISTRIBUTION OF MEN OWNERS BY METHOD OF LAND ACQUISITION ACCORDING TO AGE AT FIRST ACQUISITION, IOWA, 1958.

Method of acquisition	Repondents reporting	Age in years at first land acquisition				
		0-24 (percent)	25-34 (percent)	35-44 (percent)	45-54 (percent)	55-over (percent)
Purchase from relatives.....	205	9.2	37.0	36.1	14.1	3.6
Purchase from nonrelatives.....	837	9.5	36.0	35.7	14.0	4.8
Purchase from both.....	89	13.1	48.0	29.7	9.2	—
Gift or inheritance.....	110	9.7	27.6	31.9	18.3	12.5
Other .....	2	—	100.0	—	—	—
Combinations with gift or inheritance.....	264	15.7	35.8	31.8	13.9	2.8
Combinations without gift or inheritance.....	3	—	27.5	74.3	—	—
<b>All groups .....</b>	<b>1,510</b>	<b>10.7</b>	<b>36.3</b>	<b>34.4</b>	<b>14.0</b>	<b>4.6</b>



TABLE 9. DISTRIBUTION OF OWNERS WITHIN OCCUPATIONS BY METHOD OF LAND ACQUISITION, IOWA, 1946 AND 1958.<sup>a</sup>

Occupation groups	Respondents reporting		Gift or inheritance		Combinations involving gifts or inheritance		Purchase		Combinations without gift or inheritance		Other	
	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958
Farmer	642	791	5.9	5.1	17.5	18.1	72.8	76.8**	1.9	1.8	1.9	0.8
Retired farmer	162	252	2.5	6.8*	20.4	23.7	75.3	69.5**	1.8	1.8	1.9	0.2
Housewife	.....	.....	.....	34.8	.....	20.0	.....	44.4	.....	.....	.....	.....
Business and professional <sup>b</sup>	.....	303	.....	17.5	.....	17.0	.....	65.2	.....	.....	.....	0.1
Laborer and others <sup>b</sup>	.....	115	.....	10.6	.....	9.6	.....	79.8	.....	.....	.....	.....
All occupations	.....	1,567	.....	10.1	.....	18.2	.....	71.5	.....	.....	.....	0.2

<sup>a</sup> Information for 1946 was adapted from unpublished data.  
<sup>b</sup> Data for 1946 unavailable.  
<sup>c</sup> Less than 0.05 percent.

\* Significant difference at the 95-percent confidence level.  
 \*\* Significant difference at the 80-percent confidence level.

TABLE 10. DISTRIBUTION OF OWNERS WITHIN TENURE GROUPS BY METHOD OF LAND ACQUISITION, IOWA, 1946 AND 1958.<sup>a</sup>

Method of acquisition	All tenure groups reporting		Owner-operator		Part-operator		Non-operator landlord <sup>b</sup>	
	1946	1958	1946	1958	1946	1958	1946	1958
Gift or inheritance only	208	208	4.1	6.0**	7.3	6.8	2.4	20.1
Combinations involving gift or inheritance	273	273	14.7	11.9	12.2	9.3	37.3	19.6
Purchase only	1,171	1,171	76.8	81.9**	78.9	83.9	60.3	60.0
Combinations involving no gift or inheritance	1	1	2.0	.....	.....	.....	.....	0.1
Other	3	3	2.4	0.2**	1.6	.....	.....	0.2
Respondents reporting	1,656	1,656	415	502	123	265	99	790

<sup>a</sup> Information for 1946 was adapted from unpublished data.  
<sup>b</sup> Data for 1946 unavailable.

<sup>c</sup> Less than 0.05 percent.  
 \*\* Significant difference at the 80-percent confidence level.

of the business and professional individuals and 20 percent of the laborers and others, as compared with 23 percent of the farmers and 30 percent of the retired farmers, obtained ownership through methods involving gifts or inheritances.

INHERITANCES OTHER THAN LAND

Another important measure of family assistance in the acquisition of farms is the use of gifts and inheritances other than land. Nearly 37 percent of all owners have reported receiving such assistance, and of this group 60 percent said they used these gifts or inheritances for purposes of land improvement or land purchase (table 11). Not all of the recipients of nonland gifts have used their gifts directly for the purchase of land. It is assumed, however, that gifts used in farm operations have indirectly aided farmers in acquiring land.

An analysis of the occupations of recipients of nonland gifts or inheritances reveals significant differences between retired farmers and housewives when compared with farmers, business or professional men and laborers. The fact that a larger proportion of retired farmers and housewives have reported receiving such gifts can be explained mainly by the age of these two groups, which has allowed them more time to receive gifts. Many housewives have acquired ownership by outliving their husbands. Hence, the age of owners who are housewives would be comparable to the age of retired farmers. Comparing the proportions who have actually used their gifts or inheritances for land purposes, however, reveals a different picture. The significant differences here are between farmers, retired farmers and housewives as opposed to business or professional men and laborers.

Gifts and inheritances are affected most by the economic conditions that prevail during the donor's earning years and the objectives held by these individuals. Objectives of individuals change very slowly, and the span of productive years is usually long enough to cover prosperous years as well as years which are less prosperous. The result of these two factors tends to retard changes in the use of gifts and inheritances. A significant increase was detected at the 95-percent confidence level when comparing the 1946 and 1958 proportions of owner-operators who have used nonland gifts for purposes of purchase or improvement of land. All other corresponding comparisons within tenure, occupation and sex of owners were nonsignificant.

Comparing these same proportions at the 80-percent confidence level, it was found that all of the differences remained nonsignificant except for the increase in the number of farmers using their inheritances for land and the decrease among the business and professional men using their gifts for land purposes. The implication from these comparisons is that farmers who own and operate all of their land have relied more upon nonland gifts to acquire or improve their farms than have the nonfarmer groups.

TABLE 11. PROPORTION OF FARM OWNERS BY SEX, TENURE AND OCCUPATION WHO RECEIVED INHERITANCES OTHER THAN LAND AND WHO USED THEM FOR LAND PURPOSES, IOWA, 1958.

Classification	Owners reporting	Received inheritance other than land	Owners reporting	Used inheritance for land
	(number)	(percent)	(number)	(percent)
Sex				
Men .....	1,582	36.0	569	60.6
Women .....	243	42.3	103	59.7
Tenure				
Owner-operator .....	559	35.6	202	64.1
Part-owner .....	262	29.0	79	63.9
Operator landlord .....	103	44.7	50	60.6
Nonoperator landlord .....	785	29.9	236	58.4
Occupation				
Farmer .....	817	35.3	287	63.2
Retired farmer .....	255	44.9	112	67.1
Housewife .....	109	45.1	46	61.0
Business or professional .....	306	35.4	105	49.4
Laborer and others .....	114	30.8	34	48.9
All owners .....	1,825	36.8	672	60.4

TABLE 12. PROPORTION OF FARM OWNERS BY SEX, TENURE AND OCCUPATION WHO USED INHERITANCES OTHER THAN LAND FOR LAND PURPOSES, IOWA, 1946 AND 1958.<sup>a</sup>

Classification	Owners reporting		Owners using inheritance for land	
	1946	1958	1946	1958
	(number)	(number)	(percent)	(percent)
Sex				
Men .....	837	1,582	20.8	21.8
Women .....	131	243	26.7	25.3
Tenure				
Owner-operator ..	364	559	14.8	22.8*
Part-owner .....	108	262	19.4	18.5
Operator landlord ..	120	103	35.8	27.1**
Nonoperator landlord.....	376	785	24.2	23.3
Occupation				
Farmer .....	629	817	19.4	22.3**
Retired farmer....	155	255	23.9	29.4
Housewife .....	39	109	23.1	27.5
Business or professional..	87	306	24.1	17.5**
Laborer and others.....	58	114	15.5	15.0
All owners.....	968	1,825	21.7	22.2

<sup>a</sup> Information for 1946 was adapted from unpublished data.

\* Significant difference at the 95-percent confidence level.

\*\* Significant difference at the 80-percent confidence level.

#### HOW IOWA FARMS ARE ACQUIRED

Of the individual owners in Iowa, 71 percent have obtained their farms by direct purchase. Methods of acquisition involving gifts or inheritances accounted for the remaining 29 percent. Gifts or inheritances were involved in 54 percent of the methods used by women.

Comparison of tenure groups shows that landlords received more gifts and inheritances than owner-operators. This difference is also noted in occupational groups. Retired farmers, housewives, business and professional individuals benefit more than active farmers or laborers.

Recipients of gifts and inheritances often acquire ownership of land at a slightly earlier age than nonrecipients. The median age of all owners falls in the 25-34 age group. Approximately 40 percent of the owners received gifts or inheritances, and of this group 60 percent reported using their gifts to buy, improve or operate their farms.

#### FINANCE METHODS IN OWNERSHIP ACQUISITION

Obtaining sufficient capital to acquire owner-

ship of land has been a persistent problem throughout the history of Iowa. Various legislative proposals have been enacted to promote ownership by farm operators. These acts have, in general, been successful in solving the specific problems for which they were intended. The dynamic nature of the financial structure of agriculture has been a continuous source of problems to farmers seeking farm ownership.

Gradual enlargement of farms and rising land values have been responsible for the recent re-emergence of the limited real estate credit problem. Iowa farmland in 1958 was valued at \$250 per acre, making the total investment in land and improvements \$43,920 for a farm of average size. Using the common practice of making a down payment of approximately 50 percent of the value of the farm requires a capital accumulation of more than \$20,000. For many individuals, this is a larger sum than they have been able to acquire.

#### SOURCES OF CREDIT

Individuals may obtain long-term credit from four major sources. Federal Land Banks supply one-fifth, life insurance companies provide two-fifths, commercial banks provide one-tenth, and individuals and miscellaneous sources supply three-tenths of the real estate credit used by farmers. The majority of the loans by Federal Land Banks and insurance companies are not for the purchase of real estate. Refinancing previous farm mortgages and other indebtedness accounts for 60 percent of the land bank loans and 45 percent of the loans by insurance companies. The amount of loans extended for the original purchase of farms comprises 15 percent of the loans by land banks and 35 percent of the loans by insurance companies.<sup>12</sup>

The prosperous years during World War II permitted farm owners to free themselves of debt in many cases. By 1950, 66.6 percent of Iowa farms were owned debt free.<sup>13</sup> In 1945 Congress passed an amendment permitting Federal Land Banks to extend loans up to 65 percent of the normal agricultural value of a farm. This left the Land Bank

<sup>12</sup> U. S. Agricultural Research Service. Agr. Finance Rev. 20:6. 1958.

<sup>13</sup> U. S. Bureau of the Census, op. cit., p. 58.

Commissioner loan with only the difference between 65 and 75 percent of farm value. As a result, authority to make Land Bank Commissioner loans was not renewed when it expired in July 1947.

In subsequent years, Federal Land Banks have been limited to lending money up to 65 percent of the appraised value and at an average interest rate of 4.1 percent. Life insurance companies have been active competitors of the Federal Land Banks in the field of real estate credit by extending to farmers loans representing a higher percentage of appraised value.

Since 1952, the parity ratio has continuously declined, while at the same time land prices have increased. As this cost-price squeeze has been in progress, farmers have assumed more credit obligations and have sought other sources of credit when their loan applications were refused by the Federal Land Bank, insurance companies and commercial banks. No substantial change has occurred in government loan policies since 1945 other than slightly relaxing the restrictions on Farmers Home Administration loans and changes in interest rates.

Unwillingness of the Federal Land Banks to change their lending policies and of the life insurance companies to accept loans of greater risk has caused farmers to turn to individuals more willing to extend higher risk loans. During the period 1950-57, although all major sources of credit increased their amounts of outstanding loans, the increase by Federal Land Banks was only 49 percent, life insurance companies was 71 percent, while individuals and miscellaneous sources<sup>14</sup> increased 89 percent.<sup>15</sup>

#### LOW-EQUITY FINANCING

A trend appears to be under way toward more liberal use of low-equity financing methods. During the period 1950-57, the amount of outstanding Farmers Home Administration loans increased by 110 percent. Another indicator of this probable trend is the increased use of land installment contracts. Information gathered in the survey shows that land contracts are used by 6 percent of the owners now making payments on their farms. Because individuals are the most likely source of lending money through the use of land contracts, the evidence suggests that the use of land contracts is increasing.

The land contract is desired by prospective owners with limited capital, for it provides them with the opportunity to acquire control of a farm even though they do not acquire title. Payments are

made much the same as with an amortized mortgage. Land contracts are also desired by certain individuals seeking to sell their farms. Such contracts provide a source of income which is usually in excess of the rental rate. Also they present an alternative solution to those individuals who desire to sell their farms and reduce the amount of taxes which must be paid on capital gains.<sup>16</sup>

Data gathered from respondents of the survey revealed that owner-operators are the largest group utilizing land contracts (table 13). This supports the hypothesis that farmers are turning to land contracts as a means of increasing their security of tenure even though they may be quite limited by the amount of capital they have acquired.

While the number of acres now being acquired by land contract is only one-seventh of the total encumbered acres, the amount of debt owed on land contracts is nearly one-fourth of the total debt (table 14). The reason for this difference is that mortgages require a down payment of 35 to 50 percent, whereas land contracts may be negotiated with little or no down payment. Thus the average amount per loan would be higher for land contracts than for mortgages.

The greater risk involved with land contracts makes their use somewhat restricted. If this financing system is used, the title of a farm does not pass to the purchaser until substantial equity is realized by the purchaser. A purchaser who defaults on a particular payment forfeits his down payment and all previous installments. Thus, the use of land contracts is best adapted to systems of farming which provide an income with low variance, such as dairying, to meet the installments as they become due.

Table 15 shows the differences in the pattern of finance methods used in the various areas of the state. In area 6 (Northeast Dairy) a significantly larger proportion of owners, measured at the 95-percent confidence level, is using land contracts than in all other areas. The system of dairy farming followed by most farmers in this area produces a steady source of income which makes land contracts an acceptable means of financing farm purchases.

Area 5 (Southern Pasture) also has a signifi-

<sup>16</sup> U. S. Statutes at Large. 68A. Chap. 1, Sec. 453. 1954.

TABLE 14. DISTRIBUTION OF FINANCE METHODS OF OWNERS BY ACRES AND AMOUNT OF OUTSTANDING DEBT, IOWA, 1958.

Method of finance	Respondents reporting	Total acres	Total debt
	(number)	(percent)	(percent)
Land contract.....	88	15.1	22.4
Mortgage .....	491	84.9	77.6

TABLE 13. DISTRIBUTION OF FINANCE METHODS OF OWNERS BY TENURE OF OWNER, IOWA, 1958.

Method of finance	Respondents reporting	Owner-operator	Part-owner operator	Operator landlord	Non-operator landlord
	(number)	(percent)	(percent)	(percent)	(percent)
Free of debt.....	1,025	27.5	10.9	5.4	56.2
Land contract .....	88	58.9	26.4	2.1	12.6
Mortgage .....	491	39.8	22.4	6.5	31.3
Mortgage and land contract.....	10	17.4	29.2	15.3	38.1

<sup>14</sup> U. S. Bureau of the Census, *op. cit.*, p. 67.

<sup>15</sup> U. S. Agricultural Research Service, *op. cit.*, pp. 6, 101, 131.

TABLE 15. PERCENTAGE DISTRIBUTION OF FINANCE METHODS OF OWNERS WITHIN ECONOMIC AREAS, 1958.

Method of finance	Iowa	Economic areas <sup>a</sup>						
		1	2	3	4	5	6	7
Free of debt.....	63.6	68.2	62.0	59.7*	64.9	62.5	58.2	67.7
Mortgage .....	30.0	29.4	33.2	34.2	31.5	30.3	28.8	27.3
Land contract .....	5.8	1.5	3.5	5.3	3.1	6.9	12.9	4.4
Mortgage and land contract.....	0.6	0.9	1.3	0.8	0.5	0.3	0.1	0.6
Respondents reporting.....	1,614	197	172	217	213	306	204	315

<sup>a</sup> See fig. 1 for location of areas.

cantly higher proportion of owners, measured at the 95-percent confidence level, utilizing land contracts than have the other areas, except areas 6 and 3. Incomes in the Southern Pasture area are not as stable as in the Northeast Dairy area. Since this is not an attractive area to life insurance companies, and the Federal Land Bank is restricted on the terms of the loans it is allowed to make, prospective owners have turned to land contracts to meet their real estate credit needs.

Differences between other areas in the use of land contracts exist; but the differences are small, and the number reporting using land contracts within an area is so small that further comparisons lack reliability.

#### INADEQUACY OF LAND CREDIT

Information obtained from the survey and the Agricultural Finance Review issued by the Farm Economics Research Division, ARS, USDA, indicates that present sources of real estate credit are not adequate for farmers seeking ownership of the land they operate. More individuals applying for loans are turned down by the Farmers Home Administration than there are individuals receiving such loans. The number of land contracts and the amount of debt owed on such agreements suggest that this financial arrangement is receiving renewed interest and use. These two factors, together with the increase in ownership by nonoperator landlords, suggest that a more accessible source of real estate credit should be made available to farmers, if the norm of owner-operatorship of farms is to be realized to a greater extent.

#### CONCENTRATION OF LAND OWNERSHIP

Ownership distribution patterns have been undergoing substantial changes in recent years which indicate a trend away from the norm of owner-operatorship of Iowa farms. Forces playing dominant roles in this trend are: (1) a relative decline in product prices compared with factor prices of farmers and (2) increasing ownership costs of farmland.

The decline in value of agricultural commodities relative to nonagricultural commodities in recent years has reduced farmers' profits. During the decade 1947-57 the parity ratio declined from 115 to 84.<sup>17</sup> Decreased profits to farmers mean that capital accumulation is not as rapid as in the past. Not only is the capital accumulation period of a

prospective owner-operator longer, but his bargaining position has also declined relative to non-farm individuals who are interested in purchasing farmland as investments. These two reasons, derived from the relative decline in product prices received by farmers, have been important factors in the trend away from owner-operatorship.

Costs of ownership have been increasing, partly because of improved techniques of production and increased mechanization. Because agricultural land value is usually determined by capitalizing the estimated net return of the landlord, the effect of innovations on net returns should be examined. The manner in which net returns are affected by biological and mechanical innovations depends upon the price elasticity of demand for farm products and the effect of the innovation on (1) total output, (2) total costs of production and (3) the nature of the short-run supply function for factors of production. Under continuous change, the short-run effect becomes a continuous or permanent effect.<sup>18</sup>

Innovations can be viewed in three time periods based on the degree of adoption by farmers. The demand for farm products is assumed to be inelastic. Stage 1 is limited adoption of innovation, limited increase in output, constant prices and greater returns to innovators. Stage 2 is general adoption of innovation, increased output, lower prices and decreased net returns of all farmers. Stage 3 is complete adoption of innovation, increased output, resource shifts to nonagricultural industries, increased output of nonagricultural industries and equilibrium restored between the real income of farmers and nonfarmers.

Some farmers consider the effects of innovations extending only through Stage 1. Part of the increased net returns from innovations in Stage 1 which substitute capital for labor tend to become capitalized into land value.<sup>19</sup>

Many farmers wait until the intermediate period, Stage 2, before adopting an innovation. At this time adoption is so prevalent that the increased output becomes large enough to result in a lower product price. Decreased net returns of Stage 2 occur after the innovation has caused part of the increased return in Stage 1 to be capitalized into land value. As a result, late adopters are faced with falling product prices and rising land value. Both of these forces tend to make purchase of farms by tenants difficult.

Changes in ownership patterns brought about

<sup>18</sup> Heady, E. O. Economics of agricultural production and resource use. Prentice-Hall, Inc., Englewood Cliffs, N. J. 1957. p. 819.

<sup>19</sup> *Ibid.*, p. 817.

<sup>17</sup> U. S. Agricultural Marketing Serv. Agr. prices. Oct. 1958. p. 52.

by the relative decline in product prices of farmers and the rising land value have caused concern among farmers and policy makers over the concentration of ownership. Before a complete analysis can be made of this problem, the phrase "concentration of ownership" should be examined to understand the different meanings attached to it and the ways in which the phrase is used.

#### MEANING OF CONCENTRATION

Concentration of ownership, as viewed by society, has come to connote an undesirable situation. It has meant the ownership of large acreages by a single owner, whether individual or corporate. In the past, concentration of ownership has been associated closely with absenteeism and exploitation of land resources. H. A. Turner, in his article on ownership of tenant farms written in 1926, measured concentration in terms of size and amount. "The question of concentration of ownership of rented farm property may be considered with three different measures . . . farms, acres and values."<sup>20</sup> Measurements in acres and values have been used by most writers in discussing land ownership.

The same approach to concentration is used by sociologists in their attempt to explain changes in the social institutions of communities. Concentration of ownership in the hands of landlords is often presented as the cause of the disintegration of community life and a general decline in the social and political stability of the nation. This impression is obtained in the following statement by Schmeideler:

Certainly one of the ways in which the dictum has often been fulfilled that history repeats itself is the recurrent concentration of land in the hands of the few. Various names have been given this phenomenon in different countries and at different periods of history. But whatever the term applied to it, it always means substantially the same thing. It means extensively farmed, landed properties in the hands and under the control of individual landlords or corporate owners. It means the uprooting of the masses of people from the soil. It means all that such a disrupting and disturbing process implies.<sup>21</sup>

The traditional approach of concentration is not broad enough to adequately analyze the characteristics of agricultural landowners. It is too narrow for proper interpretation of relevant data, for it does not allow for technological improvements which substitute capital for farm labor. This substitution makes possible larger operating units providing incomes nearly equal to nonfarm incomes. Concentration of ownership should be given two meanings: (1) individual acquisition of land measured in farms, acres and value and (2) distribution among classifications of owners measured in number of individuals, acres and value. Those two meanings will provide the greater latitude needed to analyze the trends in concentration taking place among the various characteristic groups as well as among individual owners.

<sup>20</sup> Turner, H. A. The ownership of tenant farms in the north central states. U. S. Dept. Agr. Bul. 1433. 1926. p. 4.

<sup>21</sup> Schmeideler, E. Will history repeat in rural America? Rural Soc. 6:291-299. 1941.

#### CONCENTRATION WITHIN TENURE GROUPS

A trend away from owner-operatorship of Iowa farms appears to be in progress. The trend is resulting in a growing concentration of ownership among the nonoperator-landlord group. This is apparent when table 16 is examined and the 1958 data compared with similar data compiled in 1946. The percentage of owner-operators has declined from 37.5 percent in 1946 to 32.2 percent in 1958, while during this same period nonoperator landlords have increased by 9.2 percent. Both changes are significant at the 95-percent confidence level. Indications are that nonfarm individuals are using capital obtained outside of agriculture to purchase farms as investments.

Owners who are engaged in business or belong to a profession have increased from 8.7 to 18.3 percent of all landowners (table 17).<sup>22</sup> Landowners classified as "laborer and others" increased from 5.9 to 7.3 percent, a significant increase at the 80-percent confidence level.<sup>23</sup> It is apparent that nonfarm individuals are able to acquire land by utilizing off-farm income to assist in the purchase of land. The addition of nonfarm individuals in the land market pushes the cost of land upward, out of the range of some farm operators who must depend solely on the land as their source of income.

The decline from owner-operatorship with a corresponding increase in concentration of ownership among nonoperator landlords may be explained by examining the marginal efficiency of capital for individuals seeking farm ownership. A nonfarm individual with money to invest has the alternatives of investing it in stocks, bonds, within his own business (if he is an entrepreneur) or in farmland. If the nonfarm individual chooses to invest in a farm, it usually means he considers that the farm investment will provide the greatest return in income or other types of satisfactions. Considerations other than profit maximization may also exist. In most cases, the "market rate" of interest is the appropriate rate to use in determining the capitalized value of a particular farm.<sup>24</sup> Farm renters, on the other hand, usually have limited capital and intrafarm investment alternatives which yield returns greater than the rate of interest on a nonfarm investment. The renter, seeking ownership with limited capital, will use the interest rate of his competing intrafarm alternative. This internal interest rate is usually higher than the market rate in capitalizing expected net revenue to determine the value of a prospective farm.

Individuals using an external market rate of interest are motivated to capitalize the value of a farm at a larger amount than individuals using an

<sup>22</sup> Included in the business and professional classification were merchants, salesmen, teachers, doctors and lawyers.

<sup>23</sup> Included in the laborer classification were skilled and unskilled workers and others not classified as housewives, businessmen or professional individuals.

<sup>24</sup> The "market rate" of interest refers to the return expected by an individual on his first-choice nonfarm investment alternative.

TABLE 16. COMPARATIVE IMPORTANCE OF OWNER TENURE GROUPS MEASURED BY NUMBER OF OWNERS AND FARMS, AND ACREAGE AND VALUE OF LAND OWNED, IOWA, 1946 AND 1958.<sup>a</sup>

Item	Respondents reporting		Owner-operator		Part-owner operator		Operator landlord		Nonoperator landlord	
	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958
Farm owners	(number)	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Farms owned	1,297	1,909	37.5	32.2*	11.2	14.6*	12.5	5.2*	38.8	48.0*
Acreage owned	1,297	1,909	33.6	26.8*	10.2	12.3**	16.2	9.6*	40.0	51.3*
Value of land owned	1,297	1,909	31.4	27.1*	8.0	11.1*	18.4	10.8*	42.2	51.7*
	1,281	1,888	33.7	27.2*	8.7	11.2*	17.8	9.2*	39.8	52.4*
Average number of farms per owner (farms)	.....	.....	1.1	1.0	1.1	1.0	1.6	2.3	1.2	1.3
Average owned acreage per owner (acres)	.....	.....	152.0	178.2	130.0	161.3	267.0	416.5	198.0	228.1
Average value of land per owner (dollars)	.....	.....	19,319	44,000	16,444	39,316	32,312	91,325	24,061	59,214
Average size of each farm owned (acres)	.....	.....	141.5	178.2	118.5	161.3	171.4	184.6	159.6	177.6
Average value of each farm owned (dollars)	.....	.....	17,526	44,000	14,833	39,316	19,137	40,305	17,376	46,270

<sup>a</sup> Information for 1946 was adapted from unpublished data. \* Significant difference at the 95-percent confidence level. \*\* Significant difference at the 80-percent confidence level.

TABLE 17. COMPARATIVE IMPORTANCE OF OCCUPATIONAL GROUPS MEASURED BY NUMBER OF OWNERS, ACRES AND VALUE OF LAND OWNED, IOWA, 1946 AND 1958.<sup>a</sup>

Item	Respondents reporting		Farmer		Retired farmer		Housewife		Business and professional		Laborer and others	
	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958
Owners	(number)	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Acres owned	1,158	1,719	64.9	51.3*	16.5	16.0	4.0	7.1*	8.7	18.3*	5.9	7.3**
Value of farm real estate	1,167	1,719	64.0	50.0*	17.9	17.7	3.9	7.0*	11.3	19.8*	2.9	5.5*
	1,189	1,522	66.4	48.9*	16.7	18.7	4.3	6.7*	9.7	20.4*	2.9	5.3*
Average acres per owner	.....	.....	182	204	201	231	173	206	240	226	92	157
Average value per owner (dollars)	.....	.....	22,273	48,907	22,009	60,847	23,381	61,031	24,222	56,328	10,577	36,889

<sup>a</sup> Information for 1946 was adapted from unpublished data. \* Significant difference at the 95-percent confidence level. \*\* Significant difference at the 80-percent confidence level.

internal rate of interest that is greater than the market rate. A renter might not compete in the bidding of a farm unless his internal rate of interest on alternative investments is equal to or less than the market rate of interest used by competitors seeking ownership of the farm.

The decline, since 1946, in the number of operator landlords was 58 percent, but the amount of land owned by operator landlords declined only 46 percent. While the marginal efficiency of investment in land has declined relative to other intrafarm investments for many of the operator landlords, some operator landlords did not have alternative investments which would provide returns of more than the farm mortgage rate of interest. These individuals have been able to buy more land, increasing the average size of holdings of this group and keeping the amount of land owned by operator landlords from decreasing by the same amount as the decrease in number of operator landlords.

The previous explanation concerning operator landlords is based on the changes that have taken place during the period 1946-58 in the average number of "farm tracts" owned and the average acreage owned by each operator landlord.<sup>25</sup> As shown in table 16, the average number of farm tracts per operator landlord has increased from 1.6 to 2.3, with a corresponding increase of average acreage owned from 267 to 417 acres per operator landlord.

Individuals who are operator landlords have been expanding their investments in farmland. The number of owner-operators moving into the operator-landlord group, however, has declined during the 1946-58 period.

Further evaluation of table 16 reveals that even though 32 percent of the owners are owner-operators, they own only 27 percent of all farm acreage. The operator landlords, however, comprise only 5 percent of the owners but control 10 percent of the land. Nonoperator landlords also possess a larger percentage of the acreage than the percentage they are of all owners. Nonoperator landlords include 48 percent of the owners but own 52 percent of the acreage.

Part of the owner-operator decline may also be attributed to the increase in the proportion of part-owner operators. Part-owners include those owners who own part of the land they operate and also rent additional land from others. Farmers who were previously owner-operators may have realized that their existing machinery supply was large enough to operate a larger farm and have rented additional land to gain the benefits of lower fixed costs per unit of output. The questionnaire was not designed to determine the tenure status of owners previous to their present classification; therefore, it is not possible to provide data to support this hypothesis, and only probable explanations can be suggested.

In each of the tenure classes except operator landlords, the average acreage owned has in-

<sup>25</sup> The term "farm tract" is used in this study to be more inclusive of the kinds of holdings that individuals describe as owning. A farm tract is defined as a single operating unit composed of contiguous or non-contiguous acreages.

creased approximately 30 acres per owner. In the case of operator landlords, the increase has been 150 acres. These increases reflect the increased mechanization of agriculture and the resulting expansion of farm size as capital has been substituted for labor.

Nonoperator landlords tend to own land of higher value than operator groups (table 16). The operator-landlord group tends to own land of lesser value than all other owners. By converting the values to approximate value-per-acre basis, it is found that the various tenure groups place a per-acre value on their land as follows: owner-operators, \$247; part-owner operators, \$244; operator landlords, \$218; and nonoperator landlords, \$260.

Owner-operators and nonoperator landlords own farm tracts of the same size, 178 acres (table 16). This figure, however, is 17 acres larger than the acreage of part-owners and 7 acres smaller than average-sized farm tracts of operator landlords. Both of these differences are expected since part-ownership is used as a stepping stone, by farmers with limited capital, to owner-operatorship of a full-size operating unit. Operator landlords are generally larger operators in terms of farm enterprise size than owner-operators or renters of nonoperator farm tracts because they are less limited by a capital shortage. Therefore, it is expected that part-owners will own smaller farm tracts and operator landlords will own larger farm tracts than owner-operators and nonoperator landlords.

Each group has increased its average farm-tract size since 1946. The largest increases were 41 acres among the part-owner group and 36 acres among the owner-operators. The increases of the two landlord groups were less than half this large. The primary reason for the larger increase in average farm-tract size by the owner-operator and part-owner groups is that they were in a better position to gain benefits of lower production costs associated with increases in technology than were the operator landlords and nonoperator landlords. Operator landlords in 1946 owned farm tracts that were already large enough to utilize the technical improvements that were introduced. Hence, they were not under the pressure that owner-operators and part-owners were to increase farm-tract size and gain the benefits of lower production costs brought about by new technology.

#### CONCENTRATION WITHIN AREAS

Data which have been computed on an area basis to be comparable to data presented in table 16 indicate that areas 1, 3 and 4 had the highest percentage of owners in the nonoperator landlord group (table C-2 in Appendix C). This supports the hypothesis that landlords are concentrated in the high-value areas because these areas also have the highest land value. Apparently the high land-value areas appear more attractive to nonfarmers than do other areas of the state. Consequently, renters seeking ownership in these areas are forced to bid against individuals who use a lower capitalization rate, and in many instances renters are eliminated from the market.

Distribution of operator landlords does not follow the same pattern of concentration as nonoperator landlords. Areas 1, 2, 5 and 7 are the major areas in which operator landlords are located (fig. 1). Owner-operators were more prevalent in the lower value areas, as would be expected after analyzing the concentration of landlords. The percentage of owner-operators varied from 21 in area 1 to 38.5 in area 6. Combining owner-operators and part-owner operators, only in areas 5 and 6 did the number of operators surpass the number of landlords. Landlords control more land in all seven areas than do the owner-operators and the part-owners. In areas 1, 3 and 4 the nonoperator landlords alone control nearly 60 percent of all acreage and 58 percent of the value of the land.

The concentration of ownership by particular individuals has not changed very much in the past 12 years. Tabulations presented in table 18 indicate only slight changes in the number of farm tracts held by owners of each tenure group except the operator-landlord group. Within this group there is a definite trend toward multiple farm-tract ownerships. The reasons explaining this shift were presented earlier in the discussion of the marginal efficiency of capital of various individuals.

Although differences in concentration by individual owners between areas are small, area 5 and area 6 do show important differences when compared with area 1, area 3 and area 4. Comparisons between other areas were slight. One of the possible reasons for the difference between areas 5 and 6, and areas 1, 3 and 4, is as follows: Since areas 5 and 6 are the two areas of lowest land value, nonfarm operator investors are not as interested in these areas as in other parts of the state. Owner-operators are more dominant in both area 5 and area 6 than elsewhere, hence more ownerships are composed of only one farm tract.

#### AGE DISTRIBUTION

The age distribution of owners is shifting to older groups. This is borne out by comparing data from this study with that obtained in 1946 (table 19). The number of owners in the 54-under age groups has decreased approximately 3 percent, while the number in age groups 55-over increased 3 percent.

Table 19 also indicates that part-owner operators are concentrated in the 35-54 age groups, owner-operators are concentrated between 45-64, and the landlords are concentrated in the 55-over age groups. This, however, is to be expected and merely adds credence to the hypothesis that the order of steps that an owner usually progresses through during his ownership career is part-owner, owner-operator and landlord.

#### RESIDENCE OF OWNERS

Ownership of Iowa land by nonresidents has been of concern to Iowa residents since the territory was first settled. Before courts of law were established, settlers, organized in vigilante committees, often took the law into their own hands

TABLE 18. DISTRIBUTION OF OWNERS WITHIN ECONOMIC AREAS BY TENURE AND NUMBER OF FARMS OWNED. IOWA AND AREAS, 1946 AND 1958.<sup>a</sup>

Tenure groups and number of farms owned	Iowa 1946 (percent)	Iowa 1958 (percent)	Economic areas						
			1 (percent)	2 (percent)	3 (percent)	4 (percent)	5 (percent)	6 (percent)	7 (percent)
All tenure groups									
1 farm .....	85.0	86.0	81.2	84.7	82.7	81.4	89.5	90.0	87.0
2 farms.....	12.0	10.2	12.4	11.0	12.9	13.4	8.5	6.8	10.2
3 farms.....		2.5	4.1	2.8	3.1	3.0	1.6	2.7	2.3
	{ 3.0								
4 farms.....		0.8	1.6	0.8	0.8	1.6	0.4	0.5	0.5
5 or more farms.....	b	0.5	0.7	0.7	0.5	0.6			
Number reporting .....	1,297	1,922	235	200	248	247	355	251	386
Owner-operator									
1 farm .....	97.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2 farms.....	3.0								
3 or 4 farms.....	b								
5 or more farms.....	b								
Number reporting .....	488	596	49	62	63	58	122	97	145
Part-owner operator									
1 farm .....	92.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2 farms.....	7.0								
3 or 4 farms.....	1.0								
5 or more farms.....	b								
Number reporting .....	145	288	34	30	38	36	73	35	42
Operator landlord									
1 farm .....	59.0	9.7	7.4			8.7	9.3		21.1
2 farms.....	32.0	65.6	58.9	75.8	73.9	52.4	76.4	66.7	59.1
3 farms.....		18.3	24.5	16.0	26.1	20.4	10.8	33.3	15.5
	{ 8.0								
4 farms.....		4.4	9.2	2.0		15.3	3.5		2.1
5 or more farms.....	1.0	2.0		6.2		3.2			2.2
Number reporting .....	161	103	14	13	12	12	22	6	24
Nonoperator landlord									
1 farm .....	82.0	80.5	77.5	81.1	76.9	75.0	87.1	83.1	81.3
2 farms.....	12.0	14.1	14.9	13.2	17.4	19.1	9.8	11.0	14.3
3 farms.....		3.5	4.6	3.8	3.4	3.5	2.4	4.1	2.9
	{ 6.0								
4 farms.....		1.2	1.8	1.3	1.5	1.6	0.4	1.1	0.9
5 or more farms.....	b	0.7	1.2	0.6	0.8	0.8	0.3	0.7	0.6
Number reporting .....	503	935	138	95	135	141	138	113	175

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

<sup>b</sup> Less than 0.05 percent.

TABLE 19. AGE DISTRIBUTION OF FARM OWNERS BY SEX AND TENURE, IOWA, 1946 AND 1958.<sup>a</sup>

Sex and tenure groups	Respondents reporting (number)	Age of owners in years						
		0-24 (percent)	25-34 (percent)	35-44 (percent)	45-54 (percent)	55-64 (percent)	65-74 (percent)	75-over (percent)
Men owners								
Owner-operator .....	584	0.2	5.8	20.3	34.0	28.2	9.2	2.3
Part-owner operator .....	277		8.8	34.2	35.8	17.6	3.2	0.4
Operator landlord .....	100		1.5	8.5	25.8	30.5	28.7	4.9
Nonoperator landlord .....	609	0.2	2.0	6.6	14.3	28.9	33.8	14.2
Women owners								
Owner-operator .....	21		2.5	15.6	27.2	11.0	25.8	17.9
Part-owner operator .....	2				100.0			
Operator landlord .....	4			11.3	29.3	17.7	22.0	19.7
Nonoperator landlord .....	228		1.7	3.0	10.6	19.8	40.9	24.0
All owners								
Owner-operator .....	605	0.2	5.7	20.1	33.6	27.8	9.8	2.8
Part-owner operator .....	279		8.7	33.8	36.6	17.4	3.1	0.4
Operator landlord .....	104		1.5	8.6	26.0	30.0	28.4	5.5
Nonoperator landlord .....	837	0.1	2.0	5.6	13.2	26.3	35.8	17.0
Iowa 1958 .....	1,825	0.1	4.2	14.9	24.3	25.7**	21.7	9.1
Iowa 1946 .....	1,247	0.3	5.3	15.6	25.3	23.0	20.4	10.1

<sup>a</sup> Information for 1946 was adapted from unpublished data.

\*\* Significant difference at the 80-percent confidence level.

and refused to let speculators become established. As the courts became more numerous, however, the speculators and absentee owners became more bold in acquiring land. Even though speculators may have left the land-market scene, land purchase by out-of-state owners for investment purposes has persisted.

TABLE 20. STATE RESIDENCE OF IOWA LANDOWNERS BY SEX, 1958.

Residence	Respondents reporting	All owners	Men	Women
	(number)	(percent)	(percent)	(percent)
In Iowa.....	1,758	89.7	87.4	12.6
Out of Iowa.....	122	6.3	71.0	29.0
In and out of Iowa <sup>a</sup> .....	78	4.0	76.0	24.0

<sup>a</sup> Includes farms owned by more than one individual.

Slightly more than 6 percent of the owners live outside of Iowa (table 20). An additional 4 percent of the ownerships are reported as being held by two or more people, some of whom live in Iowa and some out of Iowa.<sup>26</sup> Trend data are not available to show changes taking place concerning the proportion of owners living in and out of Iowa.

Acres owned by out-of-state owners are in same proportion as the number of out-of-state owners (table 21). Also, significant differences were not

<sup>26</sup> A distinction was made between full-interest and part-interest ownerships. Full-interest ownerships include only those owned entirely by one individual or a husband and wife combination. Part-interest ownerships, however, include ownerships involving two or more people who are not married to each other.



TABLE 21. DISTRIBUTION OF OWNERS, ACRES OWNED AND VALUE REPORTED BY OWNERSHIP INTEREST AND RESIDENCE OF OWNER, IOWA, 1958.

Item	Respondents		Residence of owners		
	reporting	In Iowa (percent)	Out of Iowa (percent)	Both (percent)	
Full interest					
Owners .....	1,687	93.4	6.6	—	
Acres .....	1,687	93.3	6.7	—	
Value .....	1,687	92.8	7.2	—	
Part interest					
Owners .....	161	50.1	5.2	44.7	
Acres .....	161	44.1	6.8	49.1	
Value .....	161	47.8	5.5	46.7	

detected in the value of land owned by out-of-state owners.

The proportion of owners of various occupations differs greatly between owners living in Iowa and those living away from Iowa (table 22). Within Iowa, 54 percent of the owners are farmers, whereas 17 percent of the non-Iowa owners are farmers; and 40 percent of the non-Iowa owners are business and professional men, compared with only 16 percent of Iowa owners. The percent of housewives and laborers among out-of-state owners is over twice that of in-state owners.

TABLE 22. DISTRIBUTION OF OWNERS BY OCCUPATION AND STATE RESIDENCE, IOWA, 1958.

Occupation	State residence	
	In Iowa (percent)	Out of Iowa (percent)
Farmer .....	54.5	17.1
Retired farmer .....	16.6	12.8
Housewife .....	6.3	15.5
Business and professional .....	15.7	40.0
Laborer and others .....	6.9	14.6
Number reporting .....	1,432	98

Apparently, business and professional individuals are the largest group of people living outside of Iowa who are interested in owning and have the capital available to buy land in Iowa.

### CHANGING ROLE OF PART-OWNERSHIP

Within the last four decades, the role of part-ownership has been mainly an intermediary step in the transition from renter to owner-operator.<sup>27</sup> Part-ownership has been the means used by those individuals with insufficient capital resources to purchase part of an operating unit and acquire title to part of the land they operate.

Some evidence now exists which indicates that the role of part-ownership is expanding. It is suggested that part-ownership is being used by former owner-operators to expand their operating units. This expansion is necessary to gain the benefits of lower production costs brought about by advances in technology. Data presented in table 23 show that there has been approximately a 35-percent increase in the number of part-owner operators since 1946. This increase is accompanied by a decrease in owner-operators and operator landlords and an increase in the number of nonoperator landlords as mentioned previously.

Comparisons between areas reveal no significant differences at the 95-percent confidence level

<sup>27</sup> Turner, op. cit., p. 31.

TABLE 23. DISTRIBUTION OF OWNERS WITHIN ECONOMIC AREAS BY SEX AND TENURE, IOWA AND AREAS, 1946 AND 1958.<sup>a</sup>

Tenure status and sex of owner	Economic areas						
	1	2	3	4	5	6	7
Men .....	84.2	85.1	86.0	78.9	88.8	86.9	85.1
Women .....	15.8	14.9	14.0	21.1	11.2	13.1	14.9
All owners							
Owner-operator .....	20.8	31.3	25.6	23.7	34.7	39.6	38.3
Part-owner operator .....	14.4	15.4	16.2	15.1	21.0	14.6	11.2
Operator landlord .....	6.5	6.9	5.0	5.4	6.6	2.5	6.4
Nonoperator landlord .....	58.3	46.4	53.2	55.8	37.7	43.3	44.1
Number reporting .....	233	195	234	232	347	243	376
Men owners							
Owner-operator .....	24.7	34.6	29.3	29.2	38.0	43.7	43.8
Part-owner operator .....	16.9	17.6	18.7	18.8	23.9	16.9	13.2
Operator landlord .....	7.1	8.1	5.5	6.6	7.2	2.9	7.3
Nonoperator landlord .....	51.3	39.7	46.5	45.4	30.9	36.5	35.7
Number reporting .....	193	165	198	181	305	210	317
Women owners							
Owner-operator .....	7.5	13.5	6.1	4.2	9.7	10.4	7.4
Part-owner operator .....	1.2	3.4	2.5	1.9	2.5	1.6	1.6
Operator landlord .....	96.4	83.1	91.4	92.5	87.8	89.6	91.0
Nonoperator landlord .....	37	30	33	48	41	29	34
Number reporting .....	272	30	33	48	41	29	34

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

\* Significant difference at the 95-percent confidence level.

in the percentage of part-owners represented among owners, except in area 5. In this area there were approximately 6 percent more part-owner operators than in other areas. This is the area which has undergone the most rapid adjustment in migration of people out of the rural area and the largest decrease in farm numbers in recent years.<sup>28</sup>

In area 7 the percentage of part-owners was at least 3 percent lower than in other areas. This represents a significant difference at the 80-percent confidence level when compared with all areas with the exception of areas 1 and 6. Apparently in area 7, farm operators have chosen to engage in more intensive agriculture instead of the extensive agriculture of large operating units. Hence part-ownership is not as prevalent there as in areas in which extensive operations are practiced.

#### AGE OF PART-OWNERS

The increase in part-ownership is accompanied by a gradual shift of part-owners to older age groups. Comparisons made in table 24, using data compiled from the census reports of 1950 and 1954, and information gathered in the survey indicate that an increasing number of older farmers are becoming part-owners. In 1950 and 1954 the modal group was the 35-44 age group, but by 1958 the modal group had shifted to the 45-54 age group. There has also been a marked decrease in the percentage of part-owners in the 25-34 age group. This group in the past has typified the part-owners as being composed of young farmers with limited capital, but possessing great management potential. Now, however, part-ownership has taken on a dual meaning. To some farmers, part-ownership is a means of progressing from tenant to owner-operator, while for other farmers

part-ownership is a means of obtaining a larger operating unit.

#### FARM SIZE AND PART-OWNERSHIP

The shift in age which is taking place among the part-owners further substantiates the hypothesis that part-ownership is now being used as a means of expanding the operating unit as well as a means of progressing from the status of renter to owner-operator.

Data presented in table 25 show that part-owner operating units are increasing in size more than operating units of other tenure groups. Farm size remained relatively constant from 1920 to 1935. Since 1935, all tenure groups have increased the number of acres farmed per individual, but not by any steady process. The net effect has been an increase in farm size of part-owners by 63.5 acres, while tenants have increased their average size farm by 35.5 acres. Owner-operators only increased their average farm size by 13.2 acres.

The primary reason for this differential in farm-size growth between tenure groups is that part-owners are generally younger than owner-operators, as was noted in table 19. Because part-owners are younger, it is likely that they will be more aggressive and willing to undertake the operation of a large farm than will owner-operators. Part-owners either already own the machinery needed to operate a larger farm or are in a position to obtain the additional machinery. Tenants, however, are probably not as likely to be operating with an excess supply of machinery, nor are they as likely to be financially able to purchase the equipment needed on a larger farm. Tenants often have alternative investments existing within their present farms which will yield a greater return than will the investment in machinery for a more extensive farming operation.

In 1958, 78 percent of the part-owners operated farms of 200 acres or more, while only 28 percent of the owner-operators operated farms of over 200 acres (table 26). Part-owners also operated larger farms than both operator landlords and renter landlords. The difference, however, is not as great as the comparison between part-owners and owner-operators.

Data presented in the preceding tables suggest that the role of part-ownership has changed. Part-ownership is still used by young farmers as a means of gradually progressing to the status of owner-operator. It is also being used by establish-

<sup>28</sup> Jehlik, P. J. and Wakeley, R. E. Rural-urban migration in Iowa, 1940-50. Iowa Agr. Exp. Sta. Res. Bul. 407. 1954. p. 802.

TABLE 24. AGE DISTRIBUTION OF PART-OWNER OPERATORS, FOR SELECTED YEARS, IOWA.

Year	Age of owners in years					
	0-24 (percent)	25-34 (percent)	35-44 (percent)	45-54 (percent)	55-64 (percent)	65-over (percent)
1950 <sup>a</sup> .....	1.1	15.2	31.2	29.2	17.5	5.8
1954 <sup>b</sup> .....	0.6	12.7	33.1	30.2	17.4	6.0
1958 <sup>c</sup> .....	0.0	8.7	33.8	36.6	17.4	3.5

<sup>a</sup> Adapted from the 1950 U. S. Census of Agriculture.

<sup>b</sup> Adapted from the 1954 U. S. Census of Agriculture.

<sup>c</sup> Data were obtained from the 1958 survey.

TABLE 25. AVERAGE SIZE OF IOWA FARM OPERATING UNITS OF TENURE GROUPS BY CENSUS YEARS.

Year	Owner-operator		Part-owner		Tenant	
	Acres (number)	Change (percent)	Acres (number)	Change (percent)	Acres (number)	Change (percent)
1920 <sup>a</sup> .....	139.9	.....	183.5	.....	166.8	.....
1925 <sup>a</sup> .....	134.6	-5.3	194.4	+10.9	165.6	-1.2
1930 <sup>a</sup> .....	130.5	-4.1	203.8	+9.4	168.2	+2.6
1935 <sup>a</sup> .....	130.3	-0.2	206.6	+2.8	161.6	-6.6
1940 <sup>b</sup> .....	131.6	+1.3	229.0	+22.4	168.0	+6.4
1945 <sup>b</sup> .....	132.4	+0.8	234.0	+5.0	177.7	+9.7
1950 <sup>b</sup> .....	146.6	+14.2	234.7	+0.7	192.4	+14.7
1954 <sup>b</sup> .....	153.1	+6.5	247.0	+12.3	202.3	+9.9

<sup>a</sup> Adapted from the 1935 U. S. Census of Agriculture, p. 235.

<sup>b</sup> Adapted from the 1954 U. S. Census of Agriculture, p. 214.

ed owner-operators as a means of acquiring management of additional land to gain the benefits of lower production costs.

### TENURE EXPERIENCE OF OWNERS

The theory of the agricultural ladder to ownership was proposed in 1919 by W. J. Spillman as an explanation of farm tenure progress.<sup>29</sup> This theory stated that an individual gains experience and accumulates the necessary capital to own and operate a farm by advancing through the following steps: from family laborer or hired hand, to tenant, to mortgaged owner and finally to unencumbered owner. Each step represents a higher tenure status than the preceding one, attained with the passing of time.

### THE AGRICULTURAL LADDER CONCEPT

In later years the concept of the ladder was changed to include the following four steps: a period when the individual is an unpaid worker on his parents' farm would be "P"; hired hand, "H"; renter, "R"; and owner, "O."<sup>30</sup>

One of the problems encountered with the agricultural ladder theory is that it implies continuing progress toward ownership. In actuality this is not the case. Some individuals never complete the climb to the top rung, while others may even slip down the ladder. All individuals studied are owners, indicating that those who did slip down the ladder have moved up again.

Information about the length of time spent on different rungs of the ladder by various individuals was too inaccurate to yield reliable results. The important analysis is the pattern of experience rather than the length of time spent on various rungs. Women owners were omitted because they often listed the experience of their husbands instead of their own experience.

The gradual increase in farm size and the greater mechanization of farm operations has led some individuals to de-emphasize the usefulness of the agricultural ladder concept as a means of explaining how individuals work their way to ownership.<sup>31</sup> Comparative data gathered in Iowa during 1946 and 1958, however, reveal that present owners have made greater use of the traditional agricultural ladder than past owners.

There has been an increase of about 9 percent in the number of men owners reporting basic agricultural ladder experience since 1946 (table 27). This increase is accompanied by a decrease in "other patterns of farm experience previous to owner-operatorship" and "owner-operatorship without previous farm experience." The two experience groups of the nonoperator-landlord classification increased during the 1946-58 period. The increase of these two groups, significant at the 95-percent confidence level, is explained mainly by

the increase in the number of nonoperator landlords during the past 12 years.

All tenure groups follow the same shift in the pattern of tenure experience distribution. The largest increase in basic agricultural ladder experience has been among the operator-landlord group. Sample size of this group is small. As a result, the sampling error might tend to exaggerate the differences between 1946 and 1958. Even taking this into consideration, there are more owners of farms today who have had experiences corresponding to the agricultural ladder than there were 12 years ago. Apparently the agricultural ladder best explains the route to ownership during periods of prosperity, but in less prosperous periods it does not apply so well.

A more detailed breakdown of tenure experience data is presented in table 28 to show the relative changes in the major tenure experience groups that have taken place between 1946 and 1958.<sup>32</sup> The most significant change was the increase in the P/HRO group, which accounts for the increase in basic agricultural ladder experience as indicated in table 27. The P/HNRO group also is included in the agricultural ladder classifications.

Included in the "other patterns of farm experience previous to owner-operatorship" are the H/RO, H/RNO, PO and PNO groups. Of these there was a significant decline at the 95-percent level in the H/RNO and PNO groups. Indications are that unpatterned experience is waning in Iowa.

"Owner-operatorship without previous farm experience" is represented by the NO group. The decline from 5.3 percent to 2.9 percent is significant at the 95-percent level. This evidence suggests that the number of men shifting to farming without previous experience is decreasing. However, the number of nonoperator landlords with no previous farm experience (NL group) has increased by a significant percentage measured at the 95-percent confidence level. Apparently in times of prosperity individuals with nonfarm experience prefer to invest in farm property while retaining their urban employment.

The last category to be analyzed is the "nonoperator landlord with previous farm experience but not as an owner-operator." Included in this category are the RL, RNL, P/HL and P/HNL groups. Of these only the P/HNL group has shown a significant change. The increase of 3 percent is counterbalanced by slight decreases in the other groups. As a result, no significant change has taken place when the four groups as a whole were analyzed.

### AREA DIFFERENCES IN TENURE EXPERIENCE

Comparisons between areas are also possible (table 28). Significant differences were detected at the 95-percent level in the P/HRO and the PNO groups between areas 5 and 3. Men in area 3 (Northern Grain) have a tendency to make great-

<sup>29</sup> Spillman, W. J. The agricultural ladder. *Amer. Econ. Rev.* 9:29-38. 1919.

<sup>30</sup> Timmons, J. F. and Barlowe, R. Farm ownership in the Midwest. *Iowa Agr. Exp. Sta. Res. Bul.* 361. 1949. p. 892.

<sup>31</sup> Timmons, J. F. and Barlowe, R. What has happened to the agricultural ladder? *Jour. Farm Econ.* 30:30. 1950.

<sup>32</sup> The code letters used in describing these tenure experience groupings represent a period spent by the owner since his fourteenth birthday; P, on his parents' farm; H, as a hired farm worker; R, as a farm renter; N, in nonfarm employment; O, as an owner-operator; and L, as a landlord.

TABLE 26. DISTRIBUTION BY SIZE OF OPERATING UNITS WITHIN TENURE GROUPS, IOWA, 1958.

Tenure groups	Respondents reporting	Acreage intervals									
		0-29	30-69	70-99	100-139	140-199	200-279	280-359	360-519	520-699	700-over
	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Owner-operator .....	604	4.3	5.5	14.7	17.8	30.0	16.0	6.2	3.7	1.0	0.8
Part-owner operator .....	280	0.2	2.3	1.4	7.6	10.4	55.4	18.9	19.2	3.7	0.9
Operator landlord .....	99	9.0	6.8	13.3	15.9	17.0	15.7	7.0	10.0	2.7	2.6
Renter landlord <sup>a</sup> .....	30	5.9	4.6	19.7	12.1	14.3	14.1	21.0	4.6	1.7	2.0
All operators .....	1,013	3.7	4.8	11.2	14.8	22.7	21.1	10.2	8.6	1.9	1.0

<sup>a</sup> An individual who rents land to others and also rents some land from others.

TABLE 27. DISTRIBUTION OF TENURE EXPERIENCE REPORTED BY MEN OWNERS WITHIN TENURE GROUPS, IOWA, 1946 AND 1958.<sup>a</sup>

Tenure experience groups	Respondents reporting		All tenure groups		Owner-operator		Part-owner operator		Operator landlord		Nonoperator landlord	
	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958
	(number)	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Owners reporting nonfarm experience .....	551	620	59.5	52.8*	55.6	53.4	56.9	41.3*	60.7	35.3*	65.8	62.6
Owners reporting farm experience only .....	375	550	40.5	47.2*	44.4	46.6	43.1	58.7*	39.3	64.7*	34.2	37.4
Number reporting .....	926	1,170	926	1,170	399	455	123	239	135	79	269	397
Combinations involving basic agricultural ladder experience .....	462	688	49.9	58.8*	56.9	62.6**	67.5	75.0*	40.7	65.7*	36.1	43.4*
Other patterns of farm experience previous to owner-operatorship .....	342	314	36.9	26.8*	36.3	32.4	31.7	24.1*	51.1	31.6*	33.1	21.2*
Owner-operatorship without previous farm experience .....	49	34	5.3	2.9	6.8	5.0	0.8	0.9	8.2	2.7	3.7	1.6
Nonoperator landlord with previous farm experience but not as owner-operator .....	23	89	6.2	7.6	b	b	b	b	b	b	21.2	22.5
Nonoperator landlord with no previous farm experience .....	16	45	1.7	3.9	b	b	b	b	b	b	5.9	11.3

<sup>a</sup> Information for 1946 was adapted from unpublished data.

<sup>b</sup> Less than 0.5 percent.

\* Significant difference at the 95-percent confidence level.

\*\* Significant difference at the 80-percent confidence level.

TABLE 28. DISTRIBUTION OF TENURE EXPERIENCE OF MEN OWNERS IN ECONOMIC AREAS, IOWA, 1958, COMPARED WITH 1946 TOTALS.<sup>a</sup>

Areas	Respondents reporting	P/HRO <sup>b</sup>	P/HNRO	H/RO	H/RNO	PO	PNO	NO	RL	RNL	P/HL	P/HNL	NL
1.....	165	35.5	24.2	1.2	1.8	13.3	8.6	0.9	1.4	.....	.....	9.0	4.1
2.....	134	31.9	26.7	0.3	0.7	11.8	12.0	3.2	0.4	1.5	.....	5.2	6.3
3.....	154	41.1	27.1	0.7	2.5	9.1	5.0	1.3	0.7	2.5	.....	5.8	4.2
4.....	142	35.6	21.4	1.6	1.8	11.2	9.6	1.9	0.7	1.6	.....	9.2	5.4
5.....	240	29.2	23.9	0.8	2.6	10.9	17.1	5.8	0.4	1.7	.....	3.2	4.4
6.....	164	32.9	26.8	2.4	2.4	10.1	16.2	1.4	.....	0.1	.....	5.2	2.5
7.....	238	36.6	23.3	1.3	2.6	12.9	12.0	2.7	0.6	0.8	.....	5.0	2.2
Iowa 1958 .....	1,237	34.2*	24.5	1.1	2.3*	11.3	12.2*	2.9*	0.5	1.1	.....	6.0*	3.9*
Iowa 1946 .....	926	27.2	22.5	0.8	7.3	10.8	18.0	5.3	1.1	1.5	0.5	3.1	1.9

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

<sup>b</sup> The code letters represent a period spent by the owner since his fourteenth birthday: P, on his parents' farm; H, as a hired farm worker; R, as a farm renter; N, in nonfarm employment; O, as an owner-operator; and L, as a landlord.

\* Significant difference at the 95-percent confidence level.

er use of the traditional agricultural ladder, while men in area 5 (Southern Pasture) leave the farm for a period of years to accumulate capital and later return to become owner-operators.

Differences between groups in other areas are not as great as the two just mentioned. Apparently tenure experience is fairly uniform throughout the state.

#### MODIFICATION OF THE AGRICULTURAL LADDER CONCEPT

Groupings of tenure experience used in previous studies to indicate the usefulness of the agricultural ladder concept are not separated in a manner which shows the decline in the use of the hired hand step. The appropriate comparison with hired hand experience is nonfarm experience; however, both hired hand and nonfarm experience have been grouped together in the major tenure experience groups. To determine empirically that there has been a shift from hired hand to nonfarm experience, new groupings have been made solely on the basis of hired hand and nonfarm experience. This regrouping does not represent a new ladder, but merely shows a flaw existing in the manner in which the ladder was defined.

New techniques of production and advances in technology have brought about changes in the methods of farming. Machine services are enabling more acres to be cultivated by a smaller number of workers. The substitution of capital for labor is resulting in a decreased demand for hired farm hands. Individuals seeking farm ownership have been forced to take nonfarm employment in an attempt to acquire the necessary capital needed to become a farm operator.

The shift from hired hand to nonfarm employment is apparent in table 29. The tenure experience groupings deviate from the usual groups in this table. Divisions were made solely on the basis of hired hand and nonfarm experience to show the changes taking place between these two types of employment. From the 25-34 age group to the 35-44 age group, there has been a highly significant increase in the number reporting hired hand experience and a corresponding decrease in the number reporting nonfarm experience. Differences between other age groups are not so striking, particularly when comparing the percentages in the hired hand category.

The nonfarm experience group should be viewed with discretion. The question pertaining to tenure

experience was phrased as follows: "Since you were 14 years old, how many years have you spent: (a) working on your parents' farm? (b) working on farms as a hired hand? (c) working at nonfarm employment, including armed forces, school, etc.? (d) renting all the land you farmed from others? (e) operating your own land only? (f) owning part and renting part of the land you operate?" Part (c) encompasses a wide range of activities, some of which do not belong in the category of gainful employment. Certain individuals have no doubt been included in the group having nonfarm experience who actually should not be included, thus the percentage is higher than the actual amount. Notwithstanding a possible error introduced in this manner, the shift from hired hand to nonfarm experience is noteworthy.

The analysis of table 29 indicates that the hired hand rung of the agricultural ladder is being replaced by nonfarm employment. This change in the agricultural ladder was partially obscured in previous experience groupings. The capital requirements of operating a farm as well as capital requirements of owning a farm have increased because of improved technology, as mentioned previously. Apparently young farmers are engaging in nonfarm employment to (1) accumulate enough capital to begin farming or (2) use it as part-time employment while farming to decrease the period of capital accumulation required to purchase a farm. In some cases father-son partnership agreements may have substituted for the hired hand step.

One of the consequences of the growing farm size is the reduction in the number of farms available for rent. Farms which were formerly rented as complete operating units are now being rented by nearby farmers to enlarge their enterprises. Net outcome has been to force some individuals out of farming who could not locate a farm to rent and also to force some individuals into low-equity ownership.

An analysis of table 30 suggests that some young tenants have chosen to acquire farms by means of land contracts rather than sell their equipment and seek nonfarm employment. As indicated earlier, a land contract allows a farmer to gain operating control of a farm with little or no down payment. The individual buying the farm does not acquire the deed to the farm until all payments are made or until the land contract is replaced by a mortgage agreement.

TABLE 29. DISTRIBUTION OF TENURE EXPERIENCE OF MAN OWNERS WITHIN AGE GROUPS, IOWA, 1958.

Tenure experience groups	Age of owner in years						
	All ages	0-24	25-34	35-44	45-54	55-64	65-over
	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Nonfarm experience <sup>a</sup> .....	28.3	100.0	52.2	34.7	20.7	27.9	22.1
Hired hand experience <sup>b</sup> .....	18.2	....	6.7	16.6	18.7	19.2	24.2
Nonfarm and hired hand experience <sup>c</sup> .....	24.0	....	23.4	20.6	27.9	23.9	17.9
Neither nonfarm nor hired hand experience <sup>d</sup> .....	29.5	....	17.7	28.1	32.7	29.0	35.8
Number reporting.....	1,230	1	73	228	347	509	72

<sup>a</sup> Includes groups P/RNO, P/RNOL and P/RNL.

<sup>b</sup> Includes groups P/RHO, P/RHOL and P/HRL.

<sup>c</sup> Includes groups P/RHNO, P/RNHOL, P/RHNL.

<sup>d</sup> Includes groups P/RO, P/ROL and P/RL.

TABLE 30. DISTRIBUTION OF FINANCE METHODS OF OWNERS BY PRESENT AGE GROUPS, IOWA, 1958.

Finance method	Respondents reporting	Age of owners in years					
		0-24	25-34	35-44	45-54	55-64	65-over
	(number)	(percent)	(percent)	(percent)	(percent)	(percent)	(percent)
Land contract .....	94	1.4	29.0	38.3	23.8	7.5	---
Mortgage .....	506	---	4.0	22.0	33.8	37.5	2.7
Mortgage and land contract .....	12	---	---	23.9	51.4	21.4	3.3

Use of land contracts is more prevalent among owners in the 25-44 age group because they have not had enough time to accumulate the necessary capital to buy a farm through the use of a mortgage. Owners 45 years old and over usually have had sufficient time to accumulate enough capital to purchase a farm through the use of a mortgage.

The preponderance of owners in the 45-54 age group who are purchasing land both by means of a land contract and by a mortgage indicates that these individuals are expanding their operating units or are purchasing additional farms for investment.

In recent years interest in corporate farming in Iowa has been increasing. Part of the impetus behind this has been the desire to transfer property to the next generation without breaking up an operating unit. Information gathered in the survey shows that less than 1 percent of the owners have incorporated their farms under Iowa law. It is not possible to determine from previous surveys whether or not this is an increase. A logical hypothesis, however, is that there is a slight increase in the number of incorporated farms. Subsequent studies are needed to determine trends now in progress.

More owners of farms today have utilized tenure experience patterns as characterized by the agricultural ladder than in previous years. By grouping tenure experience so as to determine the importance of nonfarm experience, it was found that the hired hand step of the ladder is being replaced by nonfarm experience. Farmers' greater reliance on machine services is eliminating part of the demand for hired hands. The individuals who, in previous years, would have become hired hands are now seeking nonfarm employment to acquire enough capital to begin farming.

Farm enlargement has also had an effect on tenure experience. Some tenant farmers have been forced into premature farm ownership in their efforts to obtain land resources.

#### OWNERSHIP TRANSFER ARRANGEMENTS

Private ownership rights to land must belong either to an individual or to a group of people. Because these rights are perpetual, provisions must be made to transfer ownership between generations. Transfer arrangements can be classified into three major categories: (1) transfer of ownership prior to death (*inter vivos* transfers), (2) plans of transfer to be implemented at the death of the owner and (3) distribution of land according to the laws of descent.

Owners who are interested in a specific distribution of land to their heirs can choose a plan based

on either of the first two types. The owner is free to choose a wide variety of plans according to his desires. If an owner is indifferent as to the disposition of his ownership rights, he may let these rights be distributed by the state laws of descent.<sup>33</sup>

One of the objectives of this study was to determine the extent to which individual transfer arrangements are being made. Answers to the following questions were sought: What proportion of owners have made out wills? Are wills and other transfer plans made out early in life or are they "deathbed" documents? What proportion of owners have utilized *inter vivos* transfer plans? Does occupation affect transfer plans? Are ownership transfer plans affected by the method used to acquire land?

#### TRANSFER PLANS

Information gathered in the survey indicates that a majority of the owners in Iowa have made specific transfer plans. Nearly three of five owners reported they had made wills.<sup>34</sup> An additional 2 percent have already transferred a portion of their land to their heirs (table 31). Part of the owners who reported no plan of transfer may be

TABLE 31. OWNERS REPORTING INTER VIVOS TRANSFERS AND PLANS FOR LAND TRANSFERS, IOWA, 1946 AND 1958.<sup>a</sup>

Nature of transfer <sup>b</sup>	Respondents reporting		Reporting ownership transfers and plans for transfers	
	1946	1958	1946	1958
	(number)	(number)	(percent)	(percent)
Inter vivos transfer.....	961	1,664	2.8	2.2
Have made out wills.....	1,093	1,915	31.3	58.3*
Have made other definite plans to transfer ownership <sup>c</sup> .....	—	725	—	15.2

<sup>a</sup> Information for 1946 was adapted from unpublished data.

<sup>b</sup> Not mutually exclusive categories.

<sup>c</sup> Data for 1946 were unavailable.

\* Significant difference at the 95-percent confidence level.

satisfied with the distribution of their land according to the laws of descent. The large proportion of owners who have made wills indicates the great interest they have in insuring a preferred distribution of their property.

The increase in the number of owners reporting wills during the 1946-58 period is highly significant. Specific reasons explaining this great increase were not available from the questionnaire. A portion of the increase may be the result of educational programs explaining the advantages of individual transfer plans.

Variations in the proportion of owners report-

<sup>33</sup> Timmons, J. F. and O'Byrne, J. C. Transferring farm property within families in Iowa. Iowa Agr. Exp. Sta. Res. Bul. 394, 1953, p. 172.

<sup>34</sup> The nonrespondent bias check in area 4 revealed that 48.3 percent of the nonrespondents had made wills, as compared with 63.9 percent of the respondents. This study indicates an upward bias in the proportion of owners reporting wills.

TABLE 32. PROPORTION OF OWNERS REPORTING WILLS WITHIN VARIOUS AGE GROUPS IN ECONOMIC AREAS, IOWA, 1946 AND 1958.<sup>a</sup>

Area	Respondents reporting (number)	Owners with wills in age groups						All ages (percent)
		0-24 (percent)	25-34 (percent)	35-44 (percent)	45-54 (percent)	55-64 (percent)	65-over (percent)	
1.....	158	....	2.0	8.9	18.1	27.8	43.2	69.2
2.....	111	....	4.5	9.5	22.0	29.9	34.1	56.8
3.....	151	....	3.0	13.8	25.1	25.6	32.5	65.0
4.....	147	....	1.4	12.8	24.8	26.0	35.0	63.9
5.....	152	....	3.3	14.8	21.6	28.2	32.1	41.7
6.....	137	....	5.1	16.4	20.3	27.7	30.5	56.2
7.....	249	0.4	2.8	13.8	23.2	23.3	36.5	63.2
Iowa 1958.....	1,105	0.1	3.2*	13.2**	22.2	26.5	34.8*	58.3
Iowa 1946.....	1,093	b	1.0	10.0	22.0	26.0	41.0	31.3

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

<sup>b</sup> Less than 0.5 percent.

\* Significant difference at the 95-percent confidence level.

\*\* Significant difference at the 80-percent confidence level.

ing wills in different areas may be noted in table 32. The percentages ranged from 69.2 in the Northwest Livestock area to a low of 41.7 in the Southern Pasture area. No apparent reasons are available for this great difference between areas.

#### AGE OF OWNERS WHO HAVE MADE WILLS

Some important differences were noted when the owners with wills were classified by age groups. More than one-third of the individuals reporting wills were in the 65-over age group (table 32). The use of wills increased with each successively older group. Only 13.2 percent of the owners with wills fell in the 35-44 age group, which is the modal group in the age distribution of all owners. There appears to be a close correlation between age and wills.

In comparing information gathered in 1946 and 1958, a significant decline was noted at the 95-percent confidence level in the use of wills by owners 65 and over. This decline does not mean that older individuals are making less use of wills, but rather that owners are making their wills at an earlier age. The proportion of wills reported by owners in age groups 25-34 and 35-44 has increased.

The distribution of owners with wills by age is generally uniform throughout the state. The personal nature of wills and the complex motivation toward their use make an analysis of regional differences impossible with the limited data obtainable from a mail survey.

#### Inter Vivos TRANSFERS

Inter vivos transfers have been used by only 2.2 percent of the owners, as noted in table 31. This proportion, however, does not represent the true extent of such transfers. Included in this tabulation were only those owners who have transferred a portion of their land. Individuals who have transferred all of their land are no longer owners and cannot be measured. If some method were available to determine the number of complete ownership transfers, the proportion of owners using inter vivos transfers would undoubtedly be greater.

Comparison of 1946 and 1958 data with respect to inter vivos transfers revealed that no significant change has taken place in the use of such

plans. The extension of social security coverage to farmers and landlords was expected to increase the transfer of ownership during an owner's lifetime. Apparently the time that social security has been in operation for landlords has not been long enough to have had any appreciable effect.

The percentage of owners who have transferred part of their land to others is even more concentrated among age groups over 54 than the proportion of owners reporting wills. Less than 3 percent of the owners who have transferred part of their land are under 55 years old (table 33).

TABLE 33. PROPORTION OF OWNERS USING INTER VIVOS TRANSFERS BY AGE GROUPS, IOWA, 1946 AND 1958.<sup>a</sup>

Year	Respondents reporting (number)	Age of owners in years			
		0-44 (percent)	45-54 (percent)	55-64 (percent)	65-over (percent)
1958.....	36	—	2.8	16.7	80.5
1946.....	27	7.4			92.6

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

#### OCCUPATION OF OWNER AND TRANSFER PLANS

Data shown in table 34 indicate that business and professional men are using wills to a greater extent than farmers. The proportion of owners reporting wills who are business and professional men is greater than the proportion of this same group among all owners; conversely, farmers reporting wills are a smaller proportion than the farmer percentage of all owners. Apparently the more formal processes in which business and professional men are engaged promotes the use of wills.

During the period 1946-58, the proportion of owners with wills who are business or professional men increased by a significant amount. At the

TABLE 34. DISTRIBUTION BY OCCUPATION OF ALL OWNERS AND OF OWNERS REPORTING WILLS, IOWA, 1946 AND 1958.<sup>a</sup>

Occupation	All owners		Owners reporting wills	
	1958 (percent)	1946 (percent)	1958 (percent)	1946 (percent)
Farmer.....	51.3	45.5	45.5	41.6
Retired farmer.....	16.0	19.1*	28.1	
Housewife.....	7.1	7.0	5.1	
Business and professional.....	18.3	22.2*	13.7	
Laborer and others.....	7.3	6.2	4.5	
Number reporting.....	1,719	991	313	

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

\* Significant difference at the 95-percent confidence level.

same time, the proportion of retired farmers decreased by a significant amount, measured at the 95-percent confidence level.

Information gathered in the survey failed to support the hypothesis that individuals who acquire ownership with family assistance make greater use of specific transfer plans (table 35). Approximately 70 percent of the owners in each method-of-acquisition group had made a will or had other definite plans of transfer. The desire to maintain family ownership apparently is as strong among owners who acquire their land without family assistance as it is among those who receive their farms with family aid.

TABLE 35. DISTRIBUTION OF METHODS OF LAND ACQUISITION OF OWNERS OVER 50 BY PLANS FOR TRANSFER, IOWA, 1958.

Method of acquisition	Respondents reporting	Plans for transfer		
		Will	Other definite plans	No plans
	(number)	(percent)	(percent)	(percent)
Purchase from relatives.....	131	61.5	7.3	31.2
Purchase from nonrelatives.....	570	62.0	7.0	31.0
Purchase from both .....	68	66.6	3.8	29.6
Gift or inheritance.....	125	67.0	6.1	26.9
Combinations with gift or inheritance .....	48	70.1	2.8	27.1
Combinations without gift or inheritance .....	33	74.4	.....	25.6
All methods .....	975	64.4	5.9	29.7

The original Social Security Act of 1935 limited old age insurance to industrial workers. This program was broadened in 1939 to provide benefits for dependents and survivors of insured workers alive after Jan. 1, 1940. In 1950, the benefits of social security were extended to some farm workers, domestic employees and many nonfarm self-employed persons. Self-employed farmers and more hired farm workers were included in this insurance program on Jan. 1, 1955. An amendment in 1956 extended the social security coverage to landlords receiving either cash or share rent who "participate materially" in the management decisions or physical work of farm production.<sup>35</sup>

Sufficient time has not elapsed to provide an adequate analysis of the effect of social security on the tenure pattern of Iowa farms. It has been hypothesized that the receipt of social security payments by farmers will encourage them to retire earlier, increasing the opportunities of young farmers to move up the ladder to ownership. Increased opportunities are likely to evolve for two reasons: (1) more farmers retiring at age 65 and (2) greater use of *inter vivos* transfers.

Greater stability of farm ownership is expected as the social security program becomes more established. Farmers will be able to work out an earlier and more satisfactory retirement program. There are indications of this in table 36. Of the owners receiving social security benefits based on farming activities, 52 percent retired between the ages of 65 and 69. If old age insurance had not

been in effect, it is possible that a portion of those who retired would not have retired until a later age. The retirement of these additional farmers may be increasing the number of farms available to aspiring young tenants.

TABLE 36. USE OF SOCIAL SECURITY BY RETIREMENT AGE OF FARMERS, IOWA, 1958.

Retirement age	Social Security status	
	Receive payments	Do not receive payments
	(percent)	(percent)
0-49.....	0.6	7.7
50-54.....	0.3	20.2
55-59.....	3.3	26.4
60-64.....	11.6	22.7
65-69.....	52.4	13.7
70-74.....	23.0	4.8
75-over.....	8.8	4.5
Number reporting.....	120	173

The number of retired owners not receiving social security benefits tends to cloud the issue. Of this group, 77 percent reported they had retired before reaching age 65. Some of the owners of the group not receiving social security payments may have listed themselves as retired farmers, even though they left the farm before their active business life was over and have become members of other occupations allied to farming. These individuals, now salesmen of real estate, feed, seed and so forth, really should not be included in the computations which resulted in such a large proportion retiring before age 65. The possibility of this bias existing should be noted and would indicate need of additional time for a more complete study of the effects of social security payments on the retirement plans of farmers.

The second effect of social security for farmers and landlords is its effect on ownership transfer plans. Owners can now have more certainty about their future income and will not have to rely so heavily on their land as a source of income. An owner having a guaranteed income in future years will be more likely to make a transfer of ownership to his heirs before he dies than if the guaranteed income did not exist. Results of the survey bear this out.

A significantly larger percentage of the owners receiving social security payments, measured at the 95-percent confidence level, reported having transferred part of their holdings to their children (table 37). The questionnaire was not designed to determine the exact extent of *inter vivos* transfers. An owner who had transferred all of his property to his children while he was still alive

TABLE 37. DISTRIBUTION OF OWNERS WHO HAVE AND HAVE NOT TRANSFERRED OWNERSHIP TO THEIR CHILDREN BY SOCIAL SECURITY STATUS, IOWA, 1958.

Social security status	Respondents reporting	Have transferred ownership	Have not transferred ownership
		(number)	(percent)
Receive payments.....	187	5.8	94.2
Do not receive payments.....	1,148	1.9	98.1

would not be listed as an owner. Because of this, the use of such transfer plans may be greater than table 37 indicates.

The greater use of *inter vivos* transfer plans by owners receiving social security benefits indicates

<sup>35</sup> Peterson, E. E. and Hill, E. B. Farm families and social security. Mich. State Univ. Ext. Bul. 336. 1956. p. 5.



that the Social Security Amendments of 1954 and 1956 have encouraged a transfer of land from parents to children.

More time is needed to determine the effect social security payments to farmers have on tenure

patterns. Present indications, however, show that these social security payments are encouraging more stability of tenure through earlier retirement of farmers and greater use of *inter vivos* transfers.

## SUMMARY AND CONCLUSIONS

Ownership of land by farm operators has been a deep-rooted objective of farmers and public policy throughout Iowa's history. Obstacles impeding the realization of this objective have persisted since the beginning of settlement in the early 1830's. Considerable public legislation has been enacted to encourage the achievement of this objective. The federal Congress enacted the Preemption Act of 1841, the Homestead Act of 1862, the Federal Land Bank Act of 1916, the Farm Credit Act of 1933 and the Bankhead-Jones Act of 1937. The state legislature enacted homestead tax exemption and moratorium legislation for similar reasons.

Despite these legislative acts and the general economic prosperity of the past decade, the objective of owner-operatorship remains difficult to achieve. The past decade has brought about a gradual increase in farm tenancy. Owner-operators have experienced a rapid increase in mortgage debt — from \$434 million in 1950 to nearly \$750 million in 1958. Farm enlargement, higher land price and increasing costs of farm operation and ownership prevent many tenants from becoming landowners. Family assistance is important to young farmers in becoming operators and owners of farms.

Current problems of farm ownership suggest an examination of the ownership structure of Iowa's farms. This study was undertaken to help provide an understanding of how farm lands are held and transferred and who owns Iowa's farms. To obtain the necessary information, 11,002 questionnaires were mailed to a random sample of Iowa landowners. Approximately 24 percent of the owners answered the questionnaire. Each returned questionnaire was weighted to correct for the different probabilities owners had of appearing on the sample list and also for the different sampling intervals used in various areas of the state.

A personal interview nonrespondent check was made to determine the reliability of the answers received from respondents. This check revealed that answers given on the questionnaires in most instances represent the owners of Iowa farmland. In cases where differences were found between respondents and nonrespondents, appropriate qualifying statements have been made.

Findings from this study indicate that farm ownership is becoming more concentrated among nonoperator landlords. These owners now control slightly more than half of all agricultural land. In 1946, they controlled 42 percent of the land. Comparisons of tenure groups reveal that owner-operators represent 32 percent of the owners but operate only 27 percent of the land. Part-owners represent 15 percent of the owners and own 11

percent of the land. Operator landlords represent only 5 percent of the owners, while they control 10 percent of the land. Nonoperator landlords represent 48 percent of all owners but control 52 percent of the land.

Concentration of ownership by specific individuals remains constant. Average size of farms has increased, but this should not be taken as an increase in concentration. Enlargement of family farms to take advantage of lower production costs associated with advancing technology accounts for the growing farm size. A noticeable increase was found in the number of part-owner operators—another indication of the need for large operating units to obtain maximum return from family farm labor and operating capital.

The agricultural ladder theory, proposed in 1919 as a means of explaining the various steps of tenure experience through which an individual progresses in becoming an owner, appears to be undergoing important changes. This study shows a decrease in the proportion of owners who have had experience as hired hands and an increase in the number reporting nonfarm experience. The agricultural ladder appears to consist of these elements: unpaid worker on parents' farm, hired hand or nonfarm employment, renter and owner. In some cases a father-son partnership agreement may have taken the place of the hired hand step on the ladder.

Advances in technology have added a new role to part-ownership by causing farmers to seek larger operating units. The 35-percent increase since 1946 in the number of part-owners, plus the shift to older age groups within the part-owner group, indicates that former owner-operators are renting additional land. Part-ownership now has a dual meaning. It may represent either young farmers climbing the ladder to full ownership or former owner-operators who are expanding their operating units.

Family assistance in the form of gifts or inheritances and the purchasing of land from relatives have eased the capital accumulation problem of some owners. Nearly one-third of the owners obtained ownership by methods involving gifts or inheritances. An additional 20 percent reported purchasing land from relatives, while the remaining one-half obtained ownership by purchasing land from nonrelatives or by other methods. The fact that landlords tend to benefit more from gifts and inheritances than owner-operators indicates that part of the landlord group has obtained ownership without actively seeking it.

Closely associated with the method of acquisition is the finance method owners use. The existing capital structure of Iowa agriculture has made it

difficult for farmers to accumulate the required capital to purchase farms.

Credit sources are rather inflexible in their lending policies and do not adequately meet the needs of farmers seeking title to the land they operate. Individual lenders are increasing in importance as a source of credit, and so is low-equity financing made possible by land installment contracts with private lenders.

To insure continued success of the farm as an operating unit, specific farm property transfer plans should be made. Increased interest in transfer plans was evidenced by the fact that the number of owners with wills in 1958 was nearly double that of 1946. Three of five owners reported they had wills specifying how their property was to be distributed. Age of owners appears to be closely related to plans for transferring ownership. One-third of the owners reporting wills were 65 or over, one-fourth were in the 55-64 age group, one-fifth were in the 45-54 age group, and the remaining one-sixth were 44 or under. Business or professional men are more inclined to make wills for the distribution of their property than are farmers. Methods used in acquiring ownership bear little relationship to the use of wills or other transfer plans.

The social security program for farmers has not been in effect long enough to provide conclusive evidence of its effect on retirement age and *inter vivos* transfer plans. It appears from the

survey that social security payments to farmers are promoting greater stability of tenure through earlier retirement of farmers and by encouraging the use of *inter vivos* ownership transfers.

Information obtained from a mail questionnaire must, by necessity, be limited to easily answered questions of a quantitative nature. For this reason, the study was primarily a report of "how many" and "how much." Explanations of why certain relationships exist can only be presented as possible or partial reasons. This study, however, provides a guide for further inquiry into specific problems associated with land ownership.

Some of the important questions left unanswered in this study are: How can changes be made in public lending policies in order to encourage owner-operations? How can young farmers with limited capital and no family assistance acquire ownership of farms? What changes can be made to improve the use of land installment contracts? What is the role of the corporate form of business organization on family farms? How can *inter vivos* transfer of ownership be accomplished and still provide the previous owner with security of income? How can retirement plans based on social security be implemented to increase tenure stability? A detailed analysis of these questions would provide further information needed to help solve important problems in agriculture and would promote a greater realization of the norm of owner-operatorship of Iowa farms.

## APPENDIX A: STATISTICAL TESTS<sup>36</sup>

### SAMPLING VARIATIONS AND THE STANDARD ERROR OF A PROPORTION

One of the objectives of a sample survey is to estimate the proportion of units in a population which possesses a certain characteristic. For example, in this survey it was desired to estimate the proportion (expressed as a percentage) of farm owners in Iowa who are classified into various tenure groups. As in most surveys, such a "population proportion,"  $P$ , is estimated directly by the corresponding proportion,  $p$ , computed from the sampled units (farm owners). The sample proportion,  $p$ , will usually differ from the "true" or population proportion,  $P$ , for two main reasons: (a) if a number of different samples were drawn, the proportion  $p$  would vary from sample to sample indicating "sampling variation" or "sampling error" and (b) even in samples including 100 percent of the population (as in a census) the interview schedule might show errors because of misunderstood questions, uncertain responses and faulty reading indicating "nonsampling errors."

Variation of a sample proportion is usually measured by the "standard deviation" or "standard error." Precise estimation of this quantity will usually be complex; however, a good approxi-

mate estimate of the over-all standard deviation,  $s_p$ , of the sample proportion  $p$  is given by the "binomial formula."<sup>37</sup> The standard deviation is found to depend on  $p$  and  $N$ , the number of units in the sample.

### CONFIDENCE INTERVAL FOR A PROPORTION

The "standard deviation,"  $s_p$  may be used to provide approximate "confidence statements" for the population proportion,  $P$ , which is to be estimated. For example, the "95-percent confidence interval" for  $P$  can be computed from the formula  $P \pm 2.0 s_p$ . This means that a sample surveyor who repeatedly computes "confidence limits" as  $p - 2.0 s_p$  and  $p + 2.0 s_p$  would find that in about 95 percent of the cases the true proportion,  $P$ , (if known) would lie between these limits. Confidence limits of 95 percent and 80 percent were computed for this survey. The formula for 80 percent "confidence limits" is  $p \pm 1.3 s_p$ .

### THE STANDARD DEVIATION AND SIGNIFICANCE OF DIFFERENCE OF PROPORTIONS OR PERCENTAGES

In using tables of this report it may be of interest to compare the percentages for two characteristics. Differences between sample proportions

<sup>37</sup> The mathematical expression for the binomial standard error of a proportion is

$$s_p = \sqrt{\frac{p(1-p)}{N}}$$

<sup>36</sup> Adapted from Strand, N., with Krane, Scott and Ayres. Helen. Information please, No. 3. Wallace Farmer and Iowa Homestead, Des Moines, Iowa. 1956.

may arise from actual differences between the corresponding population proportions, or the population proportions may be the same and the differences may be due to "sampling" or "nonsampling" errors. Where a difference between sample proportions is found, it is generally true that both causes contribute to the difference. A criterion is needed for deciding whether the observed differences between sample proportions might reasonably have arisen only from the variation inherent in the sample. If it is not reasonable to conclude that such variation would account for the sample difference, at least a portion of the difference must be due to a "real" difference between the corresponding proportions. This difference is termed "significant." Even with large differences between proportions, however, we may not say that it is impossible for the difference to be due entirely to the variation of the sample, only that it is improbable.

The standard deviation of a difference of two population percentages may be calculated in a manner similar to that used to obtain the standard deviation of a percentage. The estimated standard deviation of a difference,  $s_d$ , depends on  $p_1$  and  $p_2$ , the sample proportions, and  $N_1$  and  $N_2$ , the corresponding sample sizes. From this quantity, 95-percent and 80-percent confidence intervals for the population differences,  $D$ , may be established from the formulas  $d \pm 2.0 s_d$  and  $d \pm 1.3 s_d$ , respectively, where  $d$  is the sample difference. If such a confidence interval does not include zero (i.e., if it does not extend from a negative number at one limit to a positive number at the other limit) then it may be said that it is improbable at a particular level (95 percent or 80 percent) that such a difference has arisen from

sampling considerations alone. The sample differences are said to be significant.

#### USE OF NOMOGRAMS FOR TESTING SIGNIFICANT DIFFERENCES OF PERCENTAGES — CASE I

To facilitate comparisons of differences of two percentages, two sets of nomograms have been included in this report as figs. A-1 through A-6. These nomograms permit graphical testing of two percentages for a significant difference at either the 95-percent or 80-percent confidence level without the calculation of the standard error. Reference to these nomograms should aid the reader in further interpretation of data presented.

Two types of nomograms are presented for application in different situations. Care should be taken to refer to the correct nomogram. Figures A-1 and A-2 are appropriate for determination of a significant difference in percentages of units in the same sample with two "mutually exclusive" characteristics. "Mutually exclusive" means that it is impossible for the same unit (owner) to possess both characteristics; it must have only one or none. An example is the tenure classification table in which a respondent may be in one of the four tenure groups, but no more than one. The rule of thumb to follow in using figs. A-1 or A-2 is that both characteristics should appear in the same table and the sum of all percentages in the table should be 100 percent. In such a case the sample sizes  $N_1$  and  $N_2$  will be the same and called simply  $N$ . That is,  $N$  will be the total number in the table which corresponds to 100 percent.<sup>38</sup>

<sup>38</sup> The standard deviation of the difference in this case is expressed as

$$s_d = \sqrt{\frac{p_1(1-p_1)}{N} + \frac{p_2(1-p_2)}{N} + \frac{2p_1p_2}{N}}$$

NOMOGRAM FOR DETERMINATION OF 95% LEAST SIGNIFICANT DIFFERENCE OF PERCENTAGES OF UNITS IN A SAMPLE WITH MUTUALLY EXCLUSIVE CHARACTERISTICS FOR VARYING SAMPLE SIZE N

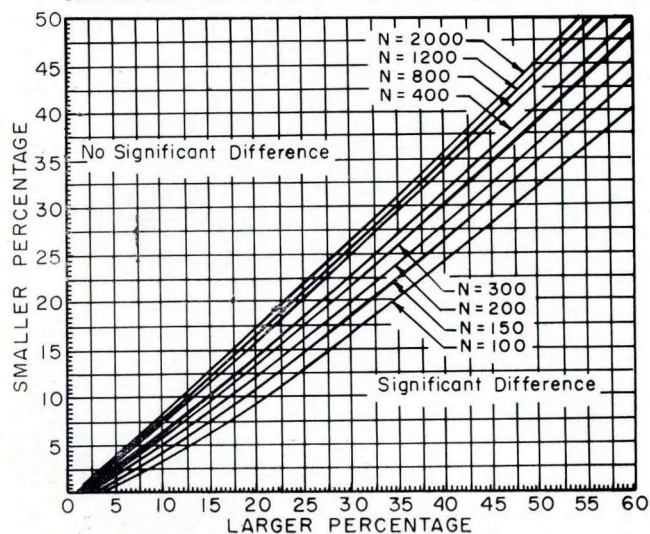


Fig. A-1. Nomogram for determination of a 95-percent least significant difference of percentages of units in a sample with mutually exclusive characteristics for varying sample size  $N$ .

NOMOGRAM FOR DETERMINATION OF 80% LEAST SIGNIFICANT DIFFERENCE OF PERCENTAGES OF UNITS IN A SAMPLE WITH MUTUALLY EXCLUSIVE CHARACTERISTICS FOR VARYING SAMPLE SIZE N

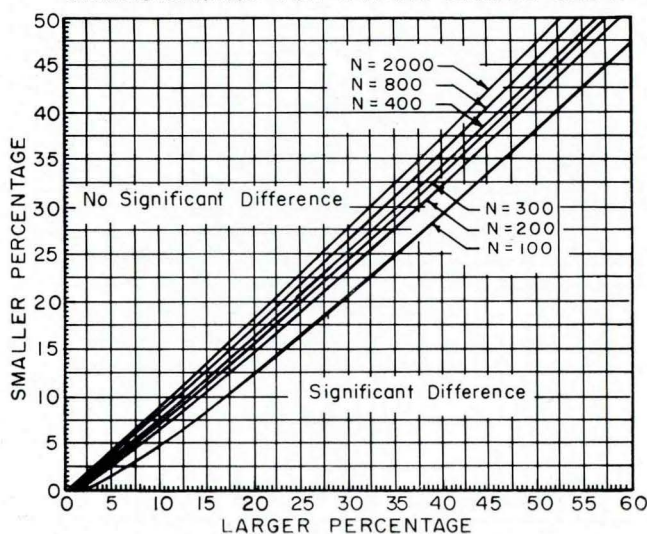


Fig. A-2. Nomogram for determination of an 80-percent least significant difference of percentages of units in a sample with mutually exclusive characteristics for varying sample size  $N$ .

As an example of the use of figs. A-1 and A-2, assume that 1,200 respondents are represented in the table "occupations of farm owners." Figure A-1 will be used to measure the difference at the 95-percent confidence level. Since 1,200 is 100 percent for this table,  $N = 1,200$ . Assume, also, that 20 percent are retired farmers and 15 percent are business and professional men. Along the lower border of the nomogram designated "larger percentage" 20 is marked, and along the left border designated "smaller percentage" 15 is marked. The intersection of a vertical line drawn from 20 and a horizontal line drawn from 15 lies below the curve  $N = 1,200$ . This region is marked "significant difference"; therefore, 20 percent and 15 percent of 1,200 respondents are significantly different at the 95-percent confidence level. Levels of  $N$  other than those represented must be interpolated between the curves for the nearest values shown. The scales of both graphs do not extend to 100 percent since the smaller percentage may not exceed 50 percent; and if the larger percentage is over 60 percent, it is always significantly different from any other percentage in the tables for samples of 100 or more.

USE OF NOMOGRAMS FOR TESTING SIGNIFICANT DIFFERENCES OF PERCENTAGES — CASE II

Figures A-3 through A-6 are more general in application but more complex in operation. They should be used whenever the percentages to be tested are independent of each other. In the situation of figs. A-1 and A-2, the percentages to be compared are dependent, since an increase in one characteristic forces the other characteristics to decrease, and conversely. Where this is not the

case, one of the figs. A-3 through A-6 should be used. Some situations in which these figures are used are: comparisons of percentages from two independent samples, such as the 1946 survey and the 1958 survey; or comparisons or percentages from two independent tabulations from the same sample, such as the percentages for the same tenure classification in two different areas.<sup>39</sup>

As an example of the application of figs. A-3 through A-6, assume that for information of owner-operators 31 percent of 200 respondents in one area are owner-operators, while in another area 39 percent of 300 respondents are owner-operators. Figure A-3 will be used, since it is desired to test these percentages for a significant difference at the 95-percent confidence level. The lower right scale marked "observed percentages" is entered at 31. Then a vertical line is drawn to the curve representing  $N = 200$ . From this point is drawn a horizontal line to the vertical scale in the central portion of the nomogram, and its intersection with this scale is marked. Similarly the point 39 on the lower scale is marked and a vertical drawn to a point representing  $N = 300$ , with another horizontal from this point to the vertical scale and a mark on the scale. There are now two marks on the vertical scale, one at about three-fifths of its height and one at about three-fourths of its height. From the lower mark, an imaginary arc is traced, guided by the arcs on either side, to a corresponding point on the lower left scale, and its intersection on the scale is indicated—in this

<sup>39</sup> For situations in which figs. A-3 through A-6 are applicable, the formula for the standard deviation of difference is

$$S_d = \sqrt{\frac{D_1(1-D_1)}{N_1} + \frac{D_2(1-D_2)}{N_2}}$$

NOMOGRAM FOR DETERMINATION OF 95% LEAST SIGNIFICANT DIFFERENCE OF PERCENTAGES OF UNITS WITH SPECIFIC CHARACTERISTICS FROM TWO SAMPLES OF VARYING SAMPLE SIZES 100 TO 800

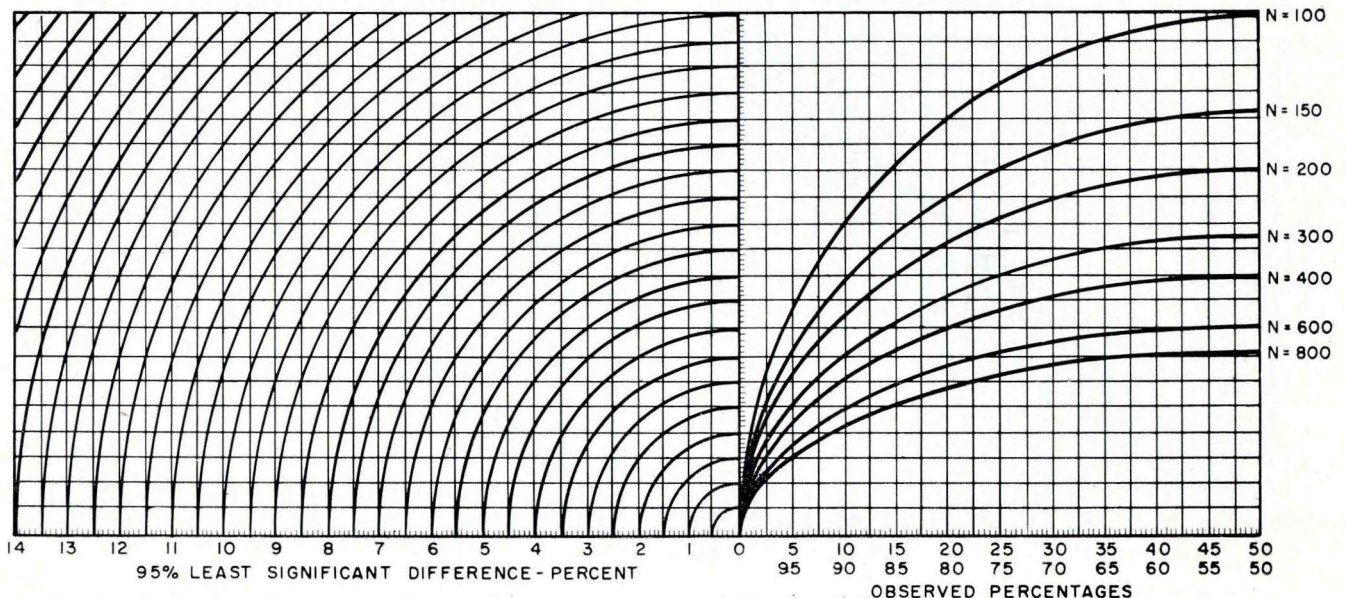


Fig. A-3. Nomogram for determination of a 95-percent least significant difference of percentages of units with specific characteristics from two samples of varying sample sizes 100 to 800.

**NOMOGRAM FOR DETERMINATION OF 95% LEAST SIGNIFICANT DIFFERENCE  
OF PERCENTAGES OF UNITS WITH SPECIFIC CHARACTERISTICS  
FROM TWO SAMPLES OF VARYING SAMPLE SIZES 1000 TO 2000**

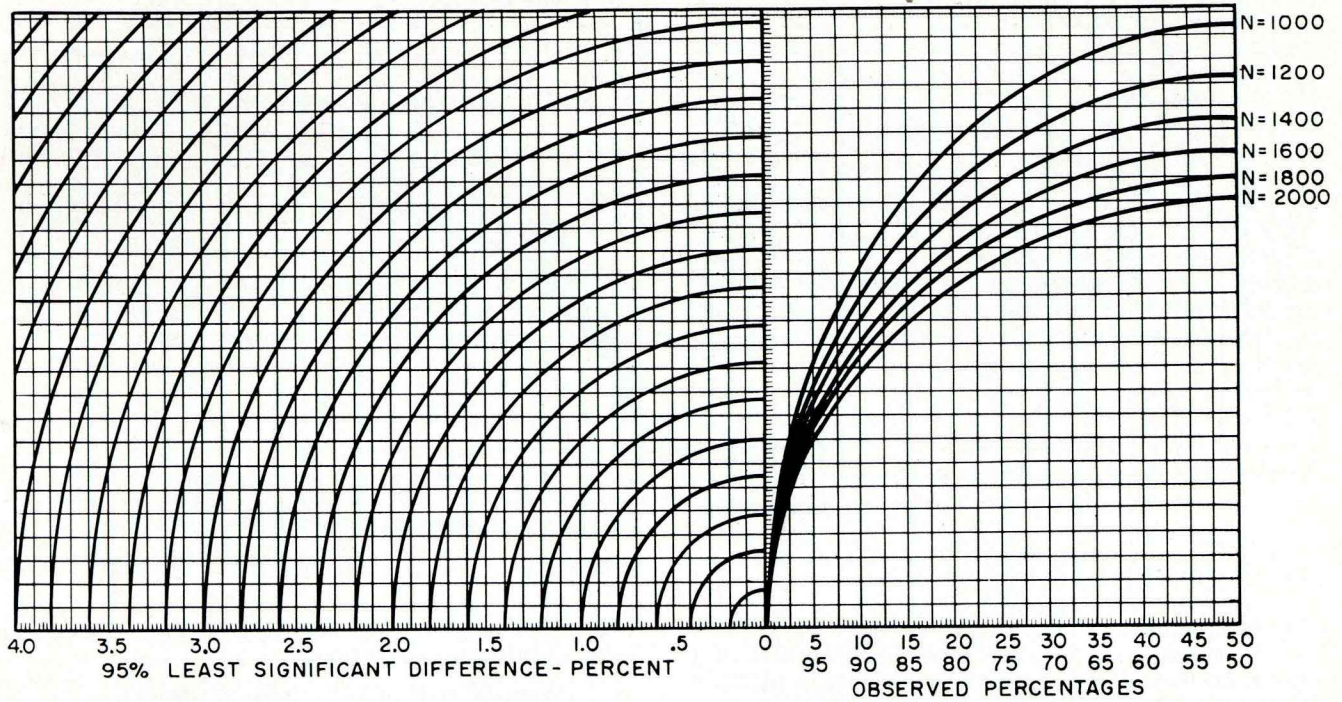


Fig. A-4. Nomogram for determination of a 95-percent least significant difference of percentages of units with specific characteristics from two samples of varying sample size 1,000 to 2,000.

**NOMOGRAM FOR DETERMINATION OF 80% LEAST SIGNIFICANT DIFFERENCE  
OF PERCENTAGES OF UNITS WITH SPECIFIC CHARACTERISTICS FROM  
TWO SAMPLES OF VARYING SAMPLE SIZES 100 TO 800**

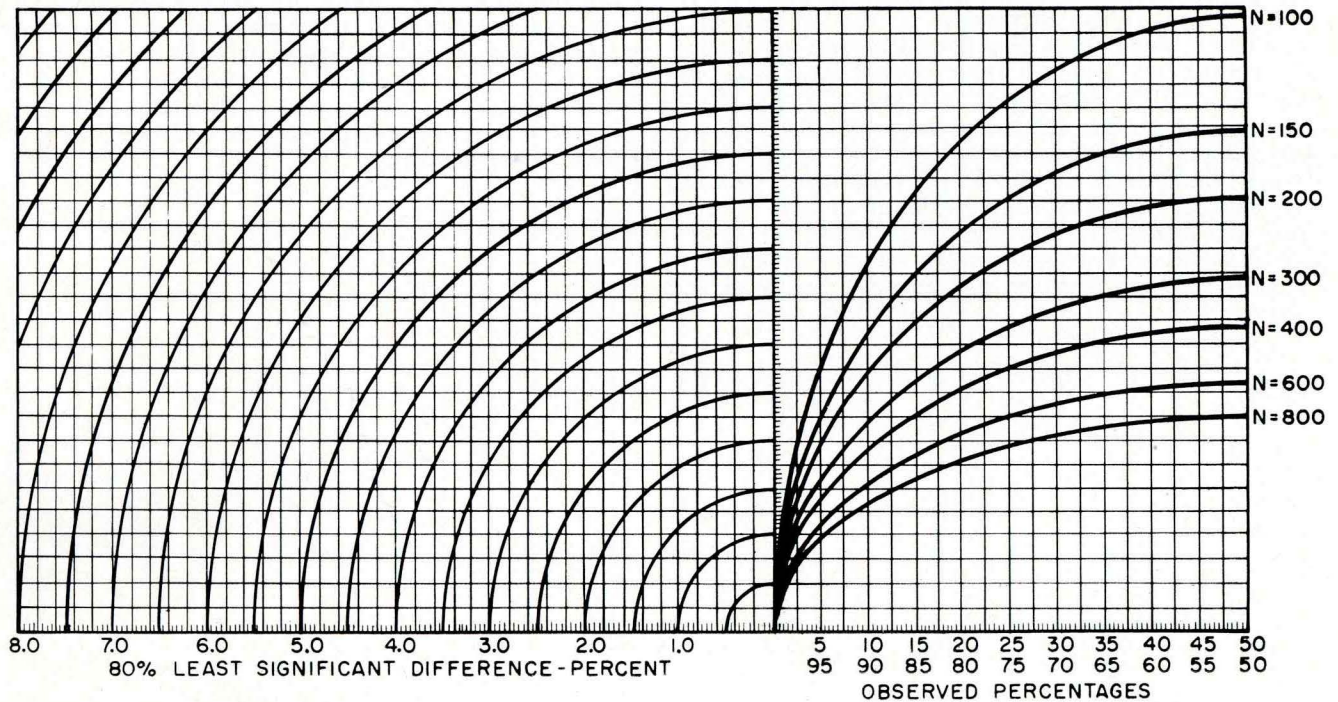


Fig. A-5. Nomogram for determination of an 80-percent least significant difference of percentages of units with specific characteristics from two samples of varying sample sizes 100 to 800.

NOMOGRAM FOR DETERMINATION OF 80% LEAST SIGNIFICANT DIFFERENCE  
OF PERCENTAGES OF UNITS WITH SPECIFIC CHARACTERISTICS  
FROM TWO SAMPLES OF VARYING SAMPLE SIZES 1000 TO 2000

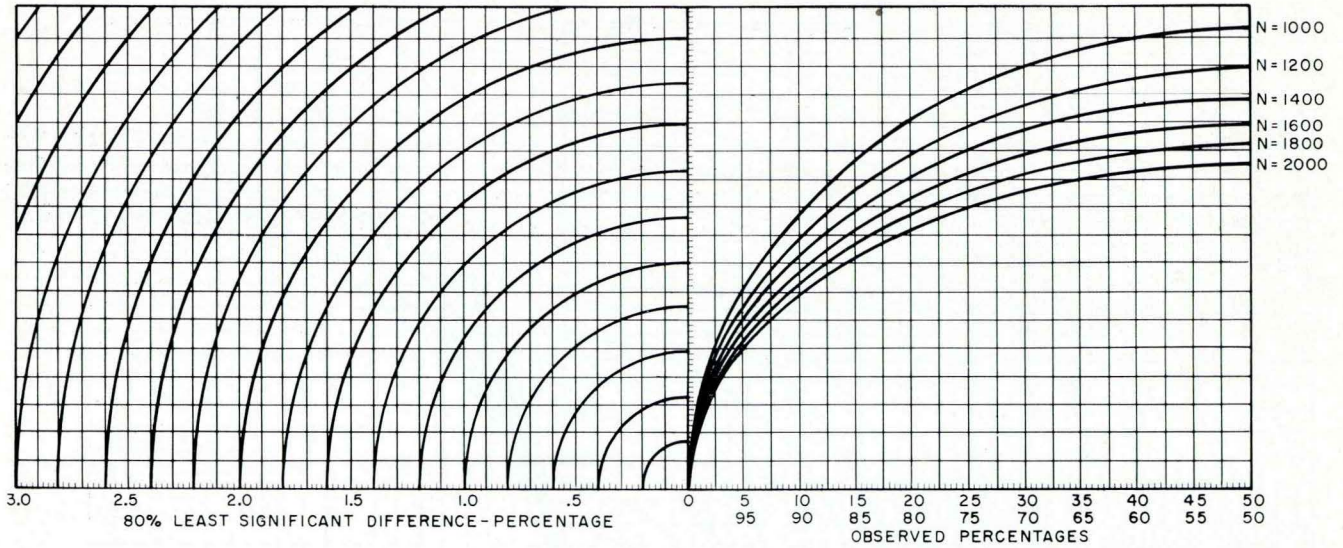


Fig. A-6. Nomogram for determination of an 80-percent least significant difference of percentages of units with specific characteristics from two samples of varying sample sizes 1,000 to 2,000.

case at about 5.6. From this intersection a vertical line is drawn up to intersect a horizontal line drawn from the upper mark on the vertical scale. From this intersection an arc again is followed to the lower scale, this time intersecting it at about 8.5. As the nomogram states, this is the 95-percent least significant difference in percent. Then the actual difference in percent,  $39 - 31 = 8$  percent, is compared with the 8.5 percent just determined. Since the actual difference is smaller than the least significant difference, it is decided that there is not a significant difference at the 95-percent confidence level. Had the actual difference been larger than 8.5 percent, there would have been a significant difference. The left scale of fig. A-3 ends at 14 percent, since any larger difference in percentages based on samples of 100 or more is always significant at the 95-percent level. Similarly the left scale of fig. A-4 ends at 4 percent, since differences larger than this based on samples of 1,000 or more are always significant at the 95-percent level. Figures A-5 and A-6 are used in

the same manner to determine the 80-percent least significant difference.

USE OF NOMOGRAMS FOR CONFIDENCE  
INTERVALS OF PERCENTAGES

It may also be noted that figs. A-3 through A-6 can also be used for finding a 95-percent or an 80-percent confidence interval for a population percentage.<sup>40</sup> If it is desired to find the population percentage of owner-operators of one area, say the area reporting 39 percent of 300 respondents, the nomogram is entered at 39 percent and the same procedure followed as previously described up to the point where the left scale was intersected at 5.6 percent. The 95-percent confidence interval is then 39.0 percent  $\pm$  5.6 percent, or from 33.4 percent to 44.6 percent.

<sup>40</sup> The approximate formula for such a confidence interval is

$$C. I. = \sqrt{p + 2 \frac{p(1-p)}{N}}$$

## APPENDIX B: NONRESPONDENT BIAS CHECK

It is expected in mail surveys that a large percentage of those who were mailed questionnaires will not respond. In this study, about three-fourths of the questionnaires were not answered. The question can be raised, "Are the characteristics of nonrespondents different from respondents?"

To check the validity of estimates made from answers received, a bias check was made of a random sample of nonrespondents in Area 4, the North Central Grain area. Personal interviews were obtained from 91 owners. Comparisons were then made between respondents and nonrespondents of the area for such characteristics as tenure, occupation, method of land acquisition, own-

ership transfer plans, residence of owners, average acres per owner and average value per owner. These comparisons are presented in Appendix C, table C-1, with significant differences at the 95-percent confidence level noted.

Nearly all of the differences between the two estimates were non-significant, which means that differences were probably due to sampling variation and nonsampling errors. For the cases in which significant differences were detected, appropriate statements qualifying the analysis have been made. Because the differences between estimates are small, it is assumed that the possible mail bias was not large and that the information obtained does represent the farm owners of Iowa.

## APPENDIX C: TABLES

TABLE C-1. CHARACTERISTICS OF RESPONDENTS IN COMPARISON WITH INTERVIEWED NONRESPONDENTS IN IOWA LAND OWNERSHIP SURVEY

Item	Respondents	Non-respondents
Number reporting .....	342	91
Acres per farm .....	166.3	159.4
Acres per owner .....	209.0	206.0
Average value of land per owner.....	\$72,107	\$68,870
Percent by tenure		
Owner-operator .....	23.7	31.9
Part-owner operator .....	15.1	15.6
Owner-operator landlord .....	5.4	7.8
Nonoperator landlord .....	55.8	44.7
Percent by occupation		
Farmer .....	45.0	51.6
Retired farmer .....	14.8	19.4
Housewife .....	10.7	8.2

TABLE C-1. (continued)

Item	Respondents	Non-respondents
Business or professional man.....	23.6	11.1*
Laborer and others .....	5.9	9.7
Percent by land acquisition method		
Purchase from relatives.....	10.9	8.0
Purchase from nonrelatives .....	52.5	43.7
Purchase from relatives and nonrelatives....	4.1	2.2
Gifts or inheritance .....	14.7	17.3
Combinations involving gifts or inheritances .....	17.4	28.8
Other .....	0.4	
Owners living in Iowa (percent).....	94.5	93.9
Made will (percent) .....	63.9	48.3*

\* Significant difference at the 95-percent confidence level.

TABLE C-2. DISTRIBUTION OF OWNERS, FARMS, ACREAGE AND VALUE OF LAND OWNED BY TENURE OF OWNER, IOWA AND AREAS, 1958.

Item	Area	Respondents reporting	Owner-operator	Part-owner operator	Operator landlord	Nonoperator landlord
		(number)	(percent)	(percent)	(percent)	(percent)
Farm owners	1	234	21.0	14.3	5.8	58.9
	2	199	31.1	15.1	6.2	47.6
	3	248	25.5	15.3	4.6	54.6
	4	246	23.6	14.2	4.7	57.5
	5	345	34.4	20.6	6.1	38.9
	6	252	38.5	14.1	2.4	45.0
	7	385	37.6	10.9	6.1	45.4
	Iowa	1,909	32.2	14.6	5.2	48.0
Farms owned	1	234	16.5	11.2	10.5	61.8
	2	199	25.2	12.2	12.6	50.0
	3	248	20.4	12.3	8.5	58.8
	4	246	18.6	11.2	9.3	60.9
	5	345	30.3	18.4	11.2	40.1
	6	252	33.3	12.4	4.8	49.5
	7	385	31.9	9.2	10.8	48.1
	Iowa	1,909	26.8	12.3	9.6	51.3
Acreage owned	1	234	18.3	8.6	11.1	62.0
	2	199	26.2	10.3	14.0	49.5
	3	248	19.6	12.3	9.0	59.1
	4	246	21.0	9.8	9.9	59.3
	5	345	28.9	16.7	10.0	44.4
	6	252	34.9	11.3	4.8	49.0
	7	385	30.7	9.2	11.6	48.5
	Iowa	1,909	27.1	11.1	10.1	51.7
Value of land owned	1	205	21.6	9.6	10.9	57.9
	2	182	27.8	10.3	13.4	48.5
	3	216	22.2	13.7	7.1	57.0
	4	210	22.9	10.2	8.5	58.4
	5	309	25.8	17.6	10.9	45.7
	6	224	33.5	11.5	4.1	50.9
	7	333	30.9	9.8	10.1	49.2
	Iowa	1,888	27.2	11.2	9.2	52.4

TABLE C-3. AVERAGE PER OWNER OF FARMS, ACREAGE AND VALUE OF LAND, AND AVERAGE SIZE AND VALUE OF EACH FARM OWNED BY TENURE OF OWNER, IOWA AND AREAS, 1958.

Item	Area	Respondents reporting (number)	Owner-operator (percent)	Part-owner operator (percent)	Operator landlord (percent)	Nonoperator landlord (percent)
Average number of farms per owner	1	234	1.0	1.0	2.4	1.4
	2	199	1.0	1.0	2.5	1.3
	3	248	1.0	1.0	2.3	1.3
	4	246	1.0	1.0	2.5	1.3
	5	345	1.0	1.0	2.1	1.2
	6	252	1.0	1.0	2.3	1.3
	7	385	1.0	1.0	2.1	1.3
	Iowa	1,909	1.0	1.0	2.3	1.3
Average owned acreage per owner	1	234	205.8	140.8	449.2	247.2
	2	199	193.2	156.9	515.1	239.0
	3	248	174.3	181.6	438.0	245.3
	4	246	189.2	146.7	459.8	219.3
	5	345	174.7	168.5	340.5	237.9
	6	252	174.1	155.0	389.3	210.6
	7	385	168.1	174.3	390.2	220.6
	Iowa	1,909	178.2	161.3	416.5	228.1
Average value of land per owner	1	205	\$66,320	\$41,975	\$118,577	\$72,224
	2	182	42,224	31,809	96,676	49,557
	3	216	54,593	55,686	115,117	71,446
	4	210	69,365	51,100	124,755	74,000
	5	309	25,042	26,578	52,398	38,254
	6	224	38,372	35,921	67,720	50,164
	7	333	44,385	48,175	95,283	63,187
	Iowa	1,888	44,000	39,316	91,325	59,214
Average size of each farm owned (acres)	1	234	205.8	140.8	190.6	181.5
	2	199	193.2	156.9	206.3	184.4
	3	248	174.3	181.6	193.7	183.3
	4	246	189.2	146.7	181.5	163.1
	5	345	174.7	168.5	163.3	203.5
	6	252	174.1	155.0	166.8	165.5
	7	385	168.1	174.3	188.6	175.9
	Iowa	1,909	178.2	161.3	184.6	177.6
Average value of each farm	1	205	\$66,320	\$41,975	\$51,371	\$52,970
	2	182	42,224	31,809	38,754	39,258
	3	216	54,593	55,686	50,830	53,147
	4	210	69,365	51,100	49,331	54,855
	5	309	25,042	26,578	25,384	32,615
	6	224	38,372	35,921	29,013	39,202
	7	333	44,385	48,175	44,856	50,909
	Iowa	1,888	44,000	39,316	40,305	46,270

TABLE C-4. DISTRIBUTION OF OWNERSHIP INTERESTS BY MARITAL STATUS, IOWA, 1958.

Ownership interests	Respondents reporting (number)	Single (percent)	Married (percent)	Widow (percent)	Widower (percent)
Complete ownership .....	1,546	5.3	83.5	7.0	4.2
Land contract .....	106	3.6	94.4	2.0	....
Life estate .....	39	13.6	14.6	71.8	....
Undivided interest .....	89	13.6	59.1	20.7	6.6
Combination of interests .....	84	9.3	73.3	12.3	5.1
All interests.....	1,864	6.1	80.9	9.0	4.0



TABLE C-5. DISTRIBUTION METHODS OF LAND ACQUISITION OF MEN OWNERS BY ACREAGE OWNED, IOWA, 1958.

Method of acquisition	Respondents reporting		Acreage intervals					1,000 and over				
	(number)	(percent)	0-29	30-69	70-99	100-139	140-219	220-259	260-379	380-499	500-999	(percent)
Purchase from relatives.....	213	2.1	4.7	16.3	23.8	40.6	6.9	5.3	0.4	0.1	0.1	0.1
Purchase from others.....	852	3.1	6.9	16.0	16.0	24.3	6.4	10.1	3.6	3.1	3.1	0.4
Purchase from both.....	89	1.3	1.3	5.1	4.9	25.1	11.4	30.0	11.5	9.3	9.3	1.4
Gift or inheritance.....	116	0.4	3.8	19.4	18.2	22.4	5.4	10.9	5.6	3.8	3.8	0.5
Combinations with gift or inheritance but no gift or inheritance.....	272	0.4	1.0	7.6	9.6	24.6	15.6	17.9	7.0	14.2	14.2	2.0
Combinations with no family assistance.....	3	56.4	.....	.....	.....	24.5	.....	.....	.....	.....	19.1	.....

TABLE C-6. DISTRIBUTION OF MEN AND WOMEN OWNERS WITHIN NUMBER OF FARMS OWNED, BY METHOD OF LAND ACQUISITION, IOWA, 1958.

Sex and number of farms owned	Re-spondents reporting	Combinations involving gift or inheritance		Combinations not involving gift or inheritance	
		Gifts or inheritances (number)	(percent)	Purchase (number)	Other (percent)
<b>Men</b>					
1 farm.....	1,328	7.7	14.0	78.2	0.1
2 farms.....	160	5.2	37.2	57.6	.....
3 farms.....	39	6.6	37.7	54.9	0.8
4 farms.....	11	4.5	60.4	35.1	.....
5 or more farms.....	5	2.7	55.7	39.6	2.0
Total (men).....	1,543	7.2	16.6	76.2	.....
<b>Women</b>					
1 farm.....	218	38.6	13.3	47.0	1.1
2 farms.....	33	31.8	26.8	41.4	.....
3 farms or more.....	10	27.5	56.4	16.1	.....
Total (women).....	261	37.4	16.5	45.2	0.9

TABLE C-7. PROPORTION OF OWNERS REPORTING RECEIPT OF GIFT OR INHERITANCE OTHER THAN LAND, BY SEX AND BY METHOD OF LAND ACQUISITION, IOWA, 1958.

Method of acquisition	Men		Women	
	(number)	(percent)	(number)	(percent)
Gift or inheritance.....	100	43.5	71	47.3
Combinations involving gift or inheritance.....	257	44.9	44	57.8
Purchase.....	1,091	32.8	101	34.0
Combinations involving no gift or inheritance.....	3	25.6	.....	.....
Other.....	2	100.0	3	43.4
All groups.....	1,453	35.7	219	42.8

TABLE C-8. DISTRIBUTION OF OWNERS OF RENTED FARMS BY NUMBER OF FARMS OWNED, IOWA, 1958, COMPARED WITH 1946 TOTALS.<sup>a</sup>

Area	Respondents reporting	Distribution by number of farms owned				
		1 farm	2 farms	3 farms	4 farms	5 or more farms
1.....	152	71.1	18.8	6.4	2.6	1.1
2.....	108	71.6	20.5	5.3	1.4	1.2
3.....	147	70.9	21.8	5.2	1.4	0.7
4.....	153	70.1	21.6	4.8	2.6	0.9
5.....	159	76.6	18.8	3.6	0.8	0.2
6.....	119	78.9	13.8	5.6	1.1	0.6
7.....	198	74.1	19.6	4.4	1.0	0.9
State—1958 ..	1,036	73.7	19.1	4.9	1.5	0.8
State—1946 ..	658	76.6	16.9	5.2	0.9	0.4

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

TABLE C-9. PERCENTAGE DISTRIBUTION OF FINANCE METHODS OF OWNERS WITHIN TENURE GROUPS, IOWA, 1958.

Finance method	Owner-operator	Part-owner	Operator landlord	Nonoperator landlord
Free of debt.....	53.0	45.0	61.1	77.5
Land contract.....	10.4	10.0	2.2	1.6
Mortgage.....	36.3	43.9	35.1	20.4
Land contract and mortgage.....	0.3	1.1	1.6	0.5
Number reporting.....	530	247	91	741

TABLE C-10. DISTRIBUTION OF LANDLORDS, NUMBER OF FARMS, ACREAGE AND VALUE OF FARMS OWNED, BY NUMBER OF FARMS OWNED, IOWA, 1958.

Item	Number, acreage and value (total)	Distribution by owners having				
		1 farm (percent)	2 farms (percent)	3 farms (percent)	4 farms (percent)	5 or more farms (percent)
Landlords (number)	1,036	73.7	19.1	4.9	1.5	0.8
Farms (number)	1,432	53.5	27.7	10.7	4.3	3.8
Acreage in farms (acres)	257,807	53.2	26.4	10.9	4.3	5.2
Value of farms (dollars)	56,506,287	54.0	26.4	10.5	4.6	4.5

TABLE C-11. DISTRIBUTION OF OWNERS AND VALUE OF LAND BY VALUE GROUPS, IOWA, 1958.<sup>a</sup>

Value intervals (dollars)	Estimated owners		Estimated value	
	(number)	(percent)	(dollars)	(percent)
0 - 4,999	2,706	1.75	9,004,860	0.11
5,000 - 9,999	4,828	3.13	33,898,394	0.42
10,000 - 14,999	8,961	5.80	104,298,390	1.28
15,000 - 24,999	25,765	16.68	499,484,035	6.15
25,000 - 49,999	51,552	33.37	1,855,251,221	22.85
50,000 - 74,999	31,884	20.64	1,902,069,248	23.42
75,000 - 99,999	12,905	8.35	1,081,543,256	13.32
100,000 - 149,999	9,672	6.26	1,137,956,539	14.01
150,000 - 249,999	4,181	2.71	766,034,656	9.43
250,000 and over	2,016	1.31	730,914,153	9.00
Totals	154,470	100.00	8,120,454,752	100.00

<sup>a</sup> Owners and values expanded to state totals.

TABLE C-12. PATTERNS OF TENURE EXPERIENCE REPORTED BY MEN OWNERS, IOWA, 1958.

Tenure experience groups	Proportion of total	Tenure experience subgroups	Proportion of total
1. Basic agricultural ladder experience			
(a) Without nonfarm experience (P/HRO grouping)	36.5	PHRO and PHROL PRO and RPOL HRO and HROL	11.9 21.4 3.2
(b) With nonfarm experience (P/HRNO grouping)	26.1	PHNRO and PHNROL PNRO and PNROL HNRO and HNROL	11.1 10.5 4.5
2. Farm experience previous to owner-operatorship			
(a) Without nonfarm experience (H/RO grouping)	1.4	HO and HOL RO and ROL	0.9 0.5
(b) With nonfarm experience (H/RNO grouping)	2.3	HNO and HNOL RNO and RNOL	1.6 0.7
3. Owner-operatorship without previous farm operating experience			
(a) Without nonfarm experience (PO grouping)	6.4	PHO and PHOL PO and POL O and OL	2.9 3.1 0.4
(b) With farm and nonfarm experience (PNO grouping)	13.1	PHNO and PHNOL PNO and PNOL	5.1 8.0
(c) No previous farm experience (NO grouping)	2.9	NO and NOL	2.9
4. Nonoperator landlord with previous experience as farm operator but not as owner-operator			
(a) Without nonfarm experience (RL grouping)	0.4	PHRL PRL HRL RL	0.2 0.1 0.1
(b) With nonfarm experience (RNL grouping)	0.8	PHNRL PNRL HNRL RNL	0.3 0.4 0.1

TABLE C-12. (continued)

Tenure experience groups	Proportion of total	Tenure experience subgroups	Proportion of total
5. Nonoperator landlord with no previous experience as farm operator			
(a) Without nonfarm experience (P/HL grouping)		PHL PL HL L	
(b) Farm and nonfarm experience (P/HNL grouping)	6.1	PHNL PNL HNL	1.5 3.0 1.6
(c) No farm experience (NL grouping)	4.1	NL	4.1

TABLE C-13. DISTRIBUTION OF TENURE EXPERIENCE OF MEN BY AGE AT WHICH LAND OWNERSHIP WAS FIRST ACQUIRED, IOWA, 1958.

Tenure experience groups	Respondents reporting	Age of owners in years				
		Under 25	25-34	35-44	45-54	55 and over
	(number)	(percent)	(percent)	(percent)	(percent)	(percent)
P/HRO	423	6.4	37.4	39.4	15.0	1.8
P/HRNO	301	4.6	40.0	35.5	15.3	4.6
H/RO	15	28.2	39.6	12.6	19.7	
H/RNO	26	21.7	24.5	33.6	15.9	4.2
PO	138	20.4	42.9	17.6	7.7	1.4
PNO	144	18.3	42.9	30.0	6.9	1.9
NO	33	23.9	31.1	27.1	10.7	7.2
RL	7			30.8	36.7	32.5
RNL	14		40.8	45.7	1.3	12.2
P/HL						
P/HNL	72	3.8	28.4	29.5	24.5	13.8
NL	45	10.9	32.7	28.5	18.7	9.2
State	1,218	11.2	38.1	33.0	13.9	3.8

TABLE C-14. PROPORTION OF OWNERS WITH WILLS WITHIN AGE GROUPS, IOWA, 1958.

Age groups	Number respondents reporting	Percentage with wills
0 - 24	3	32.0
25 - 34	88	39.6
35 - 44	279	50.9
45 - 50	221	54.1
51 - 54	239	52.2
55 - 64	486	59.8
65 - 74	408	66.3
75 and over	162	72.5
All	1,886	58.3

TABLE C-15. DISTRIBUTION OF OWNERS REPORTING WILLS WITHIN VARIOUS AGE GROUPS, BY OCCUPATION, IOWA, 1958.

Age groups	Respondents reporting	Farmer	Retired farmer	Housewife	Business and professional	Laborer and others
	(number)	(percent)	(percent)	(percent)	(percent)	(percent)
Under 35 years .....	33	70.1	---	3.4	13.4	13.1
35-44 years .....	131	69.6	1.0	0.5	22.4	6.5
45-54 years .....	221	66.5	2.6	3.5	20.6	6.8
55-64 years .....	263	47.8	13.6	4.9	28.5	5.2
65 years and over .....	346	15.9	44.8	14.4	19.1	5.8

TABLE C-16. DISTRIBUTION OF OWNERS REPORTING WILLS WITHIN OCCUPATIONS BY VARIOUS AGE GROUPS, IOWA, 1946 AND 1958.<sup>a</sup>

Age groups	All owners		Farmer		Retired farmer		Housewife		Business and professional		Laborer and others		
	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958	1946	1958	
	(percent)		(percent)		(percent)		(percent)		(percent)		(percent)		
Under 35 years .....	1.3	3.6	0.7	5.5	---	---	6.2	1.8	2.2	2.2	7.2	7.5	
35-44 years .....	10.6	13.6	11.8	20.8	1.1	0.8	---	1.0	23.3	13.7	28.6	14.1	
45-54 years .....	23.6	23.5	38.2	34.2	3.4	3.2	6.2	11.8	20.9	21.8	21.4	25.6	
55-64 years .....	26.2	26.9	29.6	28.2	23.9	19.3	31.3	18.8	20.9	34.5	14.2	22.6	
65 years and over .....	38.3	32.4	19.7	11.3	71.6	76.7	56.3	66.6	32.7	27.8	28.6	30.2	
Number reporting—1946 .....	313		152	88	16	68	43	14					
Number reporting—1958 .....	994		447	198	68	219	62						

<sup>a</sup> Information for 1946 was adapted from unpublished data. Timmons and Barlowe, *op. cit.*

TABLE C-17. DISTRIBUTION OF OWNERS REPORTING WILLS IN ECONOMIC AREAS BY OCCUPATIONS, IOWA, 1946 AND 1958.<sup>a</sup>

Economic area	Respondents reporting	Farmer	Retired farmer	Housewife	Business and professional	Laborer and other
	(number)	(percent)	(percent)	(percent)	(percent)	(percent)
1.....	151	36.3	30.7	10.8	16.1	6.1
2.....	107	46.8	17.0	7.8	20.5	7.9
3.....	150	46.2	21.3	4.7	21.0	6.8
4.....	126	39.9	17.3	8.9	30.5	3.4
5.....	130	52.9	11.0	2.7	26.1	7.3
6.....	118	47.0	16.4	5.2	22.7	8.7
7.....	209	47.0	21.4	7.4	19.6	4.6
State—1958 .....	991	45.5	19.1	7.0	22.2	6.2
State—1946 .....	313	48.6	28.1	5.1	13.7	4.5

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

TABLE C-18. PROPORTION OF LANDLORDS REPORTING LAND RENTED TO SONS OR SONS-IN-LAW, IOWA AND AREAS, 1946 AND 1958.<sup>a</sup>

Economic area	Respondents reporting	Landlords renting to their children		
		All landlords	Nonoperator landlords	Operator landlords
		(number)	(percent)	(percent)
1.....	120	36.6	36.4	39.1
2.....	86	27.7	27.8	27.3
3.....	114	37.4	39.0	24.1
4.....	115	31.2	29.6	46.1
5.....	123	27.9	28.9	23.2
6.....	81	35.4	35.8	30.4
7.....	143	49.4	50.1	46.0
State—1958 .....	782	36.1	36.2	35.2
State—1946 .....	665	27	30	19

<sup>a</sup> Information for 1946 was adapted from Iowa Agr. Exp. Sta. Res. Bul. 361.

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## APPENDIX D: QUESTIONNAIRE

### IOWA LAND OWNERSHIP SURVEY

- A.1. How many acres of farmland do you (and your wife or husband) own in Iowa? Include land mortgaged or land in which you own only an interest as well as land owned free of debt. \_\_\_\_\_ acres.
- a. How many of these acres in "A.1." above do you (and your wife or husband) own as sole owner (s)? \_\_\_\_\_ acres.
- Of these solely owned acres:
1. How many acres are you buying under purchased contract or contract for deed? (Do not include mortgaged land) \_\_\_\_\_ acres.  
(a) How much debt is still owed? \$ \_\_\_\_\_
  2. How many acres are mortgaged? \_\_\_\_\_ acres.  
(a) How much debt is still owed? \$ \_\_\_\_\_
  3. How many acres are fully paid for? \_\_\_\_\_ acres.
- b. How many of the acres in "A.1." above do you have a life estate in? (Life estate refers to land which you own and control during your lifetime, but cannot sell, trade, or otherwise transfer.) \_\_\_\_\_ acres.
- c. How many of the acres in "A.1." above are in unsettled estates (other than life estate), partnerships, or other undivided interest? \_\_\_\_\_ acres.
- Total acres from a, b and c (should agree with acres in "A.1.") \_\_\_\_\_ acres.
- B. How much do you think all of your Iowa farmland including present buildings would sell for? \$ \_\_\_\_\_
- C. How many acres of your farmland did you (and your wife or husband) acquire through:
1. Purchase from relatives? \_\_\_\_\_ acres.
  2. Purchase from others? \_\_\_\_\_ acres.
  3. Gift? (Other than inheritance) \_\_\_\_\_ acres.
  4. Inheritance of full interest? \_\_\_\_\_ acres.
  5. Inheritance of part interest and purchase of rest from others? \_\_\_\_\_ acres.
  6. Inheritance of part interest without purchase of rest from others? (Report total acres, not just your share) \_\_\_\_\_ acres.
  7. Other? \_\_\_\_\_ acres.  
a. Please explain "other" \_\_\_\_\_  
Total (should agree with question "A.1.") \_\_\_\_\_ acres.
- D.1. Have you ever received money (including proceeds from the sale of property) acquired through gift, will or estate settlement? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, did this enable you to purchase, improve, or operate any of your land? Yes \_\_\_\_\_ No \_\_\_\_\_
- b. If yes, about how much did you use for this purpose? \$ \_\_\_\_\_
- E.1. Are you actually farming (by yourself or with hired labor) any of the land you own in Iowa? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, how many of the acres you own do you operate? \_\_\_\_\_ acres.
2. Do you rent out any of your Iowa farmland to others? (including livestock-share partnership or lease) Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, how many acres do you rent to farm operators? \_\_\_\_\_ acres.
- b. If yes, how many farms or tracts do you rent to different farm operators? \_\_\_\_\_ number.
- c. If yes, how many of these farm operators are your sons or sons-in-law? \_\_\_\_\_ number.
3. If you rent land to others, is any of the land supervised by a professional farm management service? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, how many acres? \_\_\_\_\_ acres.
4. Do you farm any land which you rent from others? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, how many acres? \_\_\_\_\_ acres.
- F.1. Have you made out a will covering your land? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If no, have you made other definite plans for any of your children or other relatives to eventually acquire ownership of your land? Yes \_\_\_\_\_ No \_\_\_\_\_
- G. Is any of the land you (and your wife or husband) own in Iowa owned as a corporation? (incorporated under Iowa law) Yes \_\_\_\_\_ No \_\_\_\_\_
- H.1. How many children do you have? \_\_\_\_\_
2. Have you already transferred ownership of any land to your children? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, how many acres? \_\_\_\_\_
- I.1. If you have ever operated a farm, have you retired from farming by turning over most or all of the farm work and management to someone else? Yes \_\_\_\_\_ No \_\_\_\_\_
- a. If yes, at what age did you retire? \_\_\_\_\_
2. Do you receive social security benefits based on past farming operations? Yes \_\_\_\_\_ No \_\_\_\_\_
- J. Has or will some member (s) of your family or other relative take over or continue the actual operation of your farm? Yes \_\_\_\_\_ No \_\_\_\_\_ Don't Know \_\_\_\_\_
- K.1. At what age did you first own land? \_\_\_\_\_ years.
2. Since you were 14 years old, how many years have you spent:
- a. Working on your parents' farm? \_\_\_\_\_ years.
- b. Working on farms as a hired hand? \_\_\_\_\_ years.
- c. Working at nonfarm employment, including armed services, school, etc.? \_\_\_\_\_ years.
- d. Renting all the land you farmed from others? \_\_\_\_\_ years.
- e. Operating your own land only? \_\_\_\_\_ years.
- f. Owning part and renting part of the land you operate? \_\_\_\_\_ years.
- L.1. How is your land owned? \_\_\_\_\_ ACRES
- a. By husband and/or wife, jointly or separately \_\_\_\_\_
- b. As a single woman (including widow or divorced) \_\_\_\_\_
- c. As a single man (including widower or divorced) \_\_\_\_\_
- d. In joint ownership, other than with husband or wife \_\_\_\_\_  
Total acres (should agree with acres in question "A.1.") \_\_\_\_\_  
Explain nature of joint ownership other than with husband or wife \_\_\_\_\_
2. What is your present age? \_\_\_\_\_ years.
3. Are you single \_\_\_\_\_, married \_\_\_\_\_, widow or widower? \_\_\_\_\_
4. What is (was, if retired) your principal occupation? \_\_\_\_\_
5. Do you live on a farm? Yes \_\_\_\_\_ No \_\_\_\_\_
6. Are you depending on your land rented to others as your principal source of income? Yes \_\_\_\_\_ No \_\_\_\_\_
7. Do you (and your wife or husband) live in Iowa? Yes \_\_\_\_\_ No \_\_\_\_\_
- M.1. How many people (other than your wife or husband) have ownership interests in the land you reported? \_\_\_\_\_
- a. How many of these people live in states other than Iowa? \_\_\_\_\_
- N. Any further information about your land ownership situation you wish to send us will be greatly appreciated: \_\_\_\_\_
- O. Do you want us to send you a copy of the report of this study? Yes \_\_\_\_\_ No \_\_\_\_\_

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