

A STUDY TO DETERMINE THE NUMBER OF
ANNUAL ENTRY OPPORTUNITIES IN PRODUCTION AGRICULTURE
FOR KANSAS

by

DWIGHT E. HYLE

B.S., Northeast Missouri State University, 1969

543
1226 5600

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1973

Approved by:

James Albracht
Major Professor

LD
2668
R4
1973
H9
C.2
Doc.

ACKNOWLEDGMENTS

The author would like to acknowledge and express his appreciation for those who aided him in preparing and writing this report. Special acknowledgment is given to Dr. James Albracht, Professor Howard Bradley, Professor Paul Stevenson, and Dr. Ralph Field of the Agricultural Education Staff, Kansas State University, for their support, encouragement, and guidance throughout the planning and completion of this report.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENT.....	ii
LIST OF TABLES.....	iv
LIST OF FIGURES.....	v
Chapter	
I. THE PROBLEM.....	1
Introduction.....	1
Statement of the Problem.....	2
Limitations.....	3
Assumptions.....	3
Definition of Terms.....	3
II. REVIEW OF RELATED LITERATURE.....	5
III. DESIGN AND PROCEDURE.....	8
Method.....	8
Population.....	9
Measurement.....	9
IV. REPORT OF FINDINGS.....	10
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	22
SELECTED BIBLIOGRAPHY.....	26
APPENDIX.....	29

LIST OF TABLES

TABLE		PAGE
I	ANNUAL ENTRY OPPORTUNITIES IN PRODUCTION AGRICULTURE FOR KANSAS COUNTIES.....	14
II	ANNUAL ENTRY OPPORTUNITIES IN PRODUCTION AGRICULTURE FOR THE STATE OF KANSAS.....	21

LIST OF FIGURES

FIGURE		PAGE
1.	Entry Opportunities in Production Agriculture by County.....	30
2.	Total opportunities in Production Agriculture by County.....	31
3.	Average Gross Income From Production Agriculture by County.....	32

CHAPTER I

THE PROBLEM

I. Introduction

Comprehensive planning for educational programs in production agriculture is needed in our high schools to prepare young men leaving high school to be qualified to assume the jobs in production agriculture as they appear (3). With the gross income of Kansas Farmers increasing by 56.6% from 1964 to 1969 there needs to be some analysis of the number of opportunities available (5).

Three approaches were developed at Oklahoma State University by Lu, Horne, and Tweeten (4) to determine the number of entry opportunities in production agriculture. The first approach involved land transactions as the basis for computing the replacement needs of farmers. It was assumed that 36% of all farm land transactions in Oklahoma would provide new entries into production agriculture (4). This approach was not used in this study because of the limited amount of information available on the land transactions in Kansas. It was the opinion of the author that too many assumptions would need to be made about the size and the dollar amount of the land transactions, the type of lands transferred and the location of the land being transferred in order to arrive at an average land transfer unit.

The second approach was based upon farm economic units of \$10,000 gross income or more (4). This approach involved all farms of \$10,000 gross income or more and all farm units under \$10,000 gross income were consolidated into units of \$10,000 gross income. This approach was not

used because, in the opinion of the author, a \$10,000 gross income would not provide a satisfactory income for a farmer to live on and raise his family.

The third approach in determining the number of production agriculture opportunities was based upon economic units of \$20,000 gross income or more (4). This approach was selected by the author because a farm gross income of \$20,000 or more would provide an adequate economic unit for a satisfactory standard of living for the farmer and his family. The author was advised by authorities in the field of determining the annual number of production agriculture that this approach was the most satisfactory method to use.

II. Statement of the Problem

The purpose of the study was to determine the number of annual entry opportunities in production agriculture in Kansas by county and state.

Specific objectives of the report were:

1. How many farmers in each county and state had a gross income over \$20,000?
2. How many \$20,000 gross farming units were possible with the consolidation of all units having a gross income of less than \$20,000 in each county and state?
3. How many hired workers of 150 days or more were there in each county and state?
4. How many annual entry opportunities were there for each county and state?
5. How many farmers retire annually in each county and state?
6. How many farmers die or become disabled each year in each county

and state?

7. How many annual entry opportunities were there in production agriculture for each county and state?

III. Limitations

The study is limited to approach three for determining production agriculture opportunities (4). Approach three involved only those farms with more than \$20,000 gross income or more plus the number of farming units of \$20,000 gross income which could be developed by consolidation of all farming units of less than \$20,000 gross income. Also included were hired farm workers of 150 days or more.

The study is also limited to the classifications of income as provided for in the United States Bureau of Census, 1969 Census of Agriculture, Volume I, Part 21, Kansas, Sections 1 and 2.

IV. Assumptions

To determine the annual entry opportunities for the study, the following assumptions have been made:

1. The mortality and disability rates used in the study were accurate for the population included in this study.
2. The retirement age for Kansas farmers was age 65.
3. The mean and median age of the population were the same.
4. An economic farm unit was one which has gross annual sales of \$20,000 or more.

V. Definition of Terms

For the purpose of this study, certain words were set aside and given special definitions not necessarily those of common usage.

Farm: A business with the purpose of raising crops or livestock.

Economic Farm Unit: A farm with annual gross income of \$20,000 or more.

Hired Farm Workers: A person who is paid to work on a farm 150 days or more during the year.

Total Opportunities: The number of production agriculture employment opportunities in each county and the state.

Annual Entry Opportunities: The number of yearly opportunities to enter the field of production agriculture and work for or operate an economical farm unit.

CHAPTER II

REVIEW OF RELATED LITERATURE

A review of literature was done at Farrell Library, Kansas State University, and in the Agricultural Education Office at Kansas State University. The number of studies that were directly related to on the farm replacement needs in production agriculture was limited in number.

Edwards and Otte (2) stated that projections of the trends of the 1960's toward the year 2000 suggest that the income gap is narrowing sufficiently to abate the economics pull of the major urban centers on migrations from rural areas. In addition, local improvements in quality and quantity of the labor force and job opportunities in rural areas suggested a lessening of migration from depressed areas during the next two or three decades (2). With increased dollars in the rural areas there will be increased opportunities for new entrants into production agriculture to secure an economic farm unit.

Lu, Horne, and Tweeten (4), in a study done at Oklahoma State University, determined that 25,668 entrant farm operators will be needed in Kansas for the years 1965 to 1974. Of these 25,668 entrant farm operators, 7,031 (27.4%) would be new entrants.

The study by Lu, Horne, and Tweeten (4) further showed that based on opportunities from vacancies on large farms as well as from combining small farms, entrants farm operators in Delaware (49%), Connecticut (38%), and Rhode Island (36%) have the highest chance of obtaining an economic farm unit, whereas; the lowest chances are Alaska (10%), North Carolina

(10%), and South Carolina (8%) (4).

In a study done by the University of Kentucky (1) 427 farm operators and farm workers were needed on the surveyed farms, whereas; only 362 will be needed at the end of five years.

Although the number for the five year projection is smaller than the present labor force, replacements would be needed as the median turnover for individuals on these farms were:

1. operator - not owner - 20 years
2. operator - owner - 20 years
3. foreman - 16 years
4. livestock herdsman - 19 years
5. tobacco producer - 4 years
6. agricultural mechanic - 25 years
7. other crop producer - 6 years
8. general farm worker - 7 years (1)

Drawbaugh and Merritt (3) projected a 12.2% increase in full-time employment and a 52.0% decrease in seasonal or part-time employment for the five-year period 1971 to 1976 in New Jersey. Recruitment needs for replacement and/or expansion include 1,279 full-time workers (3).

A. H. Krebs (8) reported that the percentage being trained in agriculture is about 16% of the total vocational enrollment. With only 25% of the secondary students enrolled in vocational education, he indicated that the "percentage of all students enrolled in agriculture would approximate 4%, far too low a percentage to meet the needs for agricultural manpower."

In relationship to potential entry opportunities, Bishop and Tolley (9) stated that "It appears, therefore; that there will be approximately

ten potential young farmers for each farm producing \$10,000 or more of marketings, which will become available to new operators during the 1960's." In a study done in Indiana, Field states (10) "more than 45% of all yearly replacements are in job titles of operator-owner and operator-not owner."

Other studies have indicated that vocational agriculture was a valuable preparation for farming. Jacobson (13) conducted a study of high school graduates who had vocational agriculture and those who did not. Of the graduates who were farming the vocational agriculture graduates had larger family operations, kept more advanced records, and were more satisfied with their farming operation. Thompson (15) found that 89% of all the vocational agriculture graduates in the Ford High School in Ford, Kansas, considered vocational agriculture instruction to be valuable in their present position.

There was ample research to indicate that a significant percentage of farm vocational agriculture students were in production agriculture. In a study by Creager (12) 38% of farm vocational agriculture students were farming. Creager studied the graduates of LaCygne High School, LaCygne, Kansas, for the period 1960-1969. A study by Jones (14) indicated that 26% of the farm vocational agriculture graduates of Peabody High School were farming and that an additional 12% of the graduates were involved in part-time farming. Jones studied the occupational placement of the Peabody, Kansas, High School for the period from 1951 to 1966.

CHAPTER III

DESIGN AND PROCEDURE

I. Method

This study was designed to determine the number of annual entry opportunities in production agriculture in Kansas. These entry opportunities become increasingly important when considering the number of entrants needing training to compete for and fill entry opportunities in production agriculture.

A formula was developed by Lu, Horne, and Tweeten, whereby the information given in the 1969 Census of Agriculture could be utilized to determine the number of annual entrant opportunities in production agriculture (4). The number of farms having gross incomes of \$20,000 or more was given in the 1969 Census of Agriculture. The number of \$20,000 economical units which were possible was determined by subtracting the gross income of the farms making \$20,000 or more from the total gross income for all farms in the county. The number of hired farm workers was given in the 1969 Census of Agriculture. Adding the number of existing economic units, possible economic units, and hired farm workers gives the possible entry opportunities.

The number retiring each year was determined by dividing the total opportunities in half, then dividing the number representing one half of the total opportunities by the number of years there were between the average farmer's age and 65.

The number that died or were disabled was determined by multiplying

the percentage that will die or become disabled times the total opportunities. This figure is then divided by the number of years the farmer will be part of the work force.

Adding the number that retire each year gives the number of annual entry opportunities.

II. Population

The population for the study consisted of all farmers and hired farm workers in Kansas. The number of farmers and hired farm workers for each county and state was taken from the 1969 Census of Agriculture. Units of \$20,000 or more gross income was used as a basis for determining the total farming opportunities available in Kansas.

III. Measurement

The information determined was recorded in tabular form for each county and state of Kansas for each of the seven information factors of the study. These factors were prepared containing the data for the counties and the data for the state.

After the findings were analyzed the author summarized the study and listed the conclusions and recommendations for further study.

Recommendations were made for the study to be done in five years when the 1974 Census of Agriculture becomes available. It was also recommended that vocational agriculture programs be provided for those entering production agriculture.

CHAPTER IV

REPORT OF FINDINGS

The purpose of this study was to determine the number of annual entry opportunities in production agriculture for Kansas. There are three major approaches for estimating the annual entry opportunities in production agriculture as follows:

1. economic units based upon a percentage of the land transactions each year;
2. economic farming units of \$10,000 or more gross income per year;
3. economic farming units of \$20,000 or more gross income.

After communicating with agricultural economists at Kansas State University and Oklahoma State University the author was advised that the \$20,000 or more gross income units was the most effective and efficient approach to use to determine the number of entry opportunities in production agriculture on an annual basis.

Approach Used:

To determine the annual entry opportunities in production for Kansas the \$20,000 or more gross income approach was used. This approach involved determining the number of farm units of \$20,000 gross income or more, and then determining the number of \$20,000 gross income units which could be obtained if all farming units of less than \$20,000 gross income were consolidated into \$20,000 gross income units. Hired farm labor opportunities of 150 days or more are added to the above totals to obtain the total production agricultural opportunities for each county and for

the state. Formulas were used to determine the number of farmers who retired annually, and the number who would be expected to die or be disabled annually. The annual retirement death and disability figures were added to obtain the number of yearly opportunities in production agriculture for each county and the total for the state.

Number of Farming Units:

The number of farms with \$20,000 or more gross income was taken from the 1969 Census of Agriculture, Part 21, Sections 1 and 2, for Kansas. Information for units of \$20,000 or more gross income was obtained after taking the total income per county and computing the amount of gross income for the farms with units of \$20,000 or more gross income. Total income for all farms was also taken from the 1969 Census data. Data was given in increments of \$20,000--\$30,000; \$30,000--\$40,000; \$40,000--\$60,000; \$60,000--\$80,000; and units over \$80,000 annual gross income. The number of farms in each of the above units was obtained from the Census data. An average gross income of \$25,000 was used for farms in the \$20,000 to \$30,000 range, \$35,000 for farms in the \$30,000 to \$40,000 range and an average gross income of \$50,000 for the \$40,000 to \$60,000 range; \$70,000 was used for the \$60,000 to \$80,000 range and \$90,000 was used for the farmers with over \$80,000 annual gross income. After the average gross income per farm unit was determined the total income for farmers with \$20,000 gross income or more was obtained by adding the sums of the above gross income categories.

The amount of gross income for farms with under \$20,000 annual gross income was obtained by subtracting the total gross incomes for farms with more than \$20,000 gross income units from the total gross income for each of the counties. The number of available units with gross incomes of

\$20,000 was obtained by dividing the total remaining income by \$20,000.

Retirement:

The annual retirement numbers were determined by taking the average age of the farmers for each of the counties and then dividing the number of farmers in the county by two, since it was assumed that one-half of the farmers would be over the average age. It was also assumed that farmers would retire at age 65. The number of farmers who would retire annually was obtained by dividing the number of farmers who were over the age by the number of years from the average age to age 65. For example, if the average age of farmers in the county was 50 years and there were 400 farmers over age 50, then it could be calculated that 26 farmers would retire annually. The number of farmers would be divided by the number of years to retirement (15) to obtain the number who retire annually.

Death and Disability Figures:

The number who would be expected to die or be disabled annually was determined by reading the standard death and disability tables of the Insurance Industry. From the information in the Insurance tables it was found that 16% of the workers died between their beginning employment and age 65. It was also found that 16% of the workers became disabled between their beginning employment and age 65. For example, in a county with 800 farmers it could be expected that $(800 \times .16)$ 128 would die by age 65 and 128 would be disabled by age 65. A total of 256 would die or be disabled by age 65. A work life of 45 years from age 20 to age 65 was used to determine the expected number who would die or become disabled each year. In the above example there would be an annual rate of 5.7

(265 ÷ 45) farmers who would die or become disabled annually.

Format Used:

In order to obtain the number of annual opportunities in production agriculture by county the following format was used. The first column listed the number of farm units with \$20,000 or more gross income. The second column contained the number of farm units of \$20,000 or more gross income provided all farms with gross incomes of less than \$20,000 were consolidated into \$20,000 gross income units. The third column gave the number of hired workers who annually work 150 days or more. The total opportunities column is the sum of the number of units of \$20,000 or more, the number of \$20,000 units after consolidation of farms under \$20,000 gross income, and the number of hired workers of 150 days or more.

Column five listed the number of farmers who would be expected to retire each year based upon the total number of production agriculture opportunities and the retirement rate by the formulas described on page 12. Column six provided the number which would be expected to die or become disabled per year based upon standard insurance tables for death and disability. The final column indicated the number of annual opportunities in production agriculture and was obtained by adding the number who died or were disabled to the number who retired annually.

Findings:

Information in Tables I and II lists the yearly opportunities in production agriculture for each of the counties and for the State of Kansas. Also included in the tables are: the number of units of \$20,000 gross income or more, the number of \$20,000 gross income units which could be consolidated from units of less than \$20,000, the hired workers of 150 days or more, total opportunities, the number who retired each year, and the number who would die or be disabled.

TABLE I

ANNUAL ENTRY OPPORTUNITIES IN PRODUCTION AGRICULTURE FOR KANSAS COUNTIES

County	Total no. of units \$20,000 or more	No. of \$20,000 units possible from consol- idation of units of less than \$20,000	Hired workers of 150 days or more	Total opport- unities	No. retire each year	No. which die or are disabled each year	Yearly opport- unities
Allen	169	271.25	55	495.25	19.96	2.43	22.39
Anderson	230	275.25	45	550.25	18.58	2.70	21.28
Atchison	187	378.90	34	599.90	19.47	2.95	22.42
Barber	227	511.50	143	881.50	33.64	4.33	37.97
Barton	168	1819.03	120	2107.03	78.03	10.37	88.40
Bourbon	167	345.33	55	567.33	22.69	2.79	25.48
Brown	361	481.57	89	931.57	31.47	4.58	36.05
Butler	336	1050.96	190	1576.96	59.28	7.76	67.04
Chase	110	864.69	93	1067.69	39.25	5.25	44.50
Chautauqua	93	188.56	99	380.56	16.54	1.87	18.41
Cherokee	144	290.68	38	472.68	16.52	2.32	18.84
Cheyenne	199	384.10	65	684.10	23.82	3.19	27.01
Clark	144	499.81	84	727.81	34.65	3.58	38.23
Clay	261	431.97	47	739.97	26.42	3.64	30.06
Cloud	229	399.39	71	699.39	25.52	3.44	28.96

TABLE I Con't.

County	Total no. of units of \$20,000 or more	No. of \$20,000 units possible from consolidation of units of less than \$20,000	Hired workers of 150 days or more	Total opportunity-tunities	No. retire each year	No. which die or are disabled each year	Yearly opportunity-tunities
Coffey	218	277.09	42	537.09	20.65	2.64	23.29
Comanche	160	456.70	85	701.70	25.24	3.45	28.69
Cowley	281	744.33	128	1153.33	44.01	5.67	49.68
Crawford	132	364.31	63	559.31	20.11	2.75	22.86
Decatur	168	360.07	48	576.07	19.33	2.83	22.16
Dickinson	365	776.71	99	1240.71	45.61	6.10	51.71
Doniphan	256	359.21	65	680.21	22.22	3.34	25.56
Douglas	177	336.05	62	575.05	23.56	2.83	26.39
Edwards	144	286.56	53	483.56	21.58	2.38	23.96
Elk	92	203.64	23	318.64	13.50	1.56	15.06
Ellis	111	767.40	81	959.40	31.55	4.72	36.27
Elsworth	120	295.11	32	447.11	17.19	2.20	19.39
Finney	295	2206.35	297	2798.35	92.05	13.77	105.82
Ford	292	2081.04	139	2512.04	92.35	12.36	104.71
Franklin	229	365.27	101	695.27	25.37	3.42	28.79

TABLE I Con't.

County	Total no. of units of \$20,000 or more	No. of \$20,000 units possible from consolidation of units of less than \$20,000	Hired workers of 150 days or more	Total oppor-tunities	No. retire each year	No. which die or are disabled each year	Yearly oppor-tunities
Geary	78	121.65	22	221.65	7.69	1.09	8.78
Gove	222	993.16	104	1319.16	39.97	6.49	46.46
Graham	115	238.53	39	392.53	14.53	1.93	16.46
Grant	150	616.19	121	878.19	26.45	4.32	30.77
Gray	242	1049.34	123	1414.34	45.62	6.96	52.58
Greeley	108	538.64	94	740.64	27.03	3.64	30.67
Greenwood	202	366.20	93	661.20	27.09	3.25	30.34
Hamilton	115	224.21	66	405.21	13.87	1.99	15.86
Harper	265	453.55	89	807.55	31.54	3.97	35.51
Harvey	225	466.22	46	737.22	25.07	3.62	28.69
Haskell	220	891.22	142	1253.22	35.40	6.16	41.56
Hodgeman	196	481.40	71	748.40	25.63	3.68	29.31
Jackson	154	397.98	33	584.98	21.29	2.87	24.06
Jefferson	203	375.66	74	652.66	22.35	3.21	25.56
Jewell	308	502.13	78	888.13	32.41	4.37	36.78

TABLE I Con't.

County	Total no. of units \$20,000 or more	No. of \$20,000 units possible from consoli- dation of units of less than \$20,000	Hired workers of 150 days or more	Total oppor- tunities	No. retire each year	No. which die or are disabled each year	Yearly oppor- tunities
Johnson	151	258.06	77	487.06	17.35	2.39	19.74
Kearny	124	513.89	98	735.89	25.20	3.62	29.51
Kingman	288	405.65	83	776.65	26.41	3.82	34.05
Kiowa	136	268.14	75	479.14	21.20	2.35	23.55
Labette	189	776.65	76	1041.65	40.37	5.12	45.49
Lane	176	471.36	80	727.36	24.24	3.58	27.82
Leavenworth	154	319.24	128	601.24	21.47	2.95	24.42
Lincoln	178	321.12	51	550.12	21.15	2.70	23.85
Linn	154	285.00	57	496.00	21.75	2.44	24.19
Logan	122	234.18	60	416.18	12.76	2.04	14.80
Lyon	230	796.81	103	1129.81	44.13	5.56	49.69
McPherson	322	930.52	71	1323.52	45.95	6.51	52.46
Marion	348	542.04	48	938.04	30.06	4.61	34.67
Marshall	371	548.25	52	971.25	31.12	4.78	35.90
Meade	183	789.80	97	1069.80	37.66	5.26	42.92

TABLE I Con't.

County	Total no. of units \$20,000 or more	No. of \$20,000 units possible from consol- idation of units of less than \$20,000	Hired workers of 150 days or more	Total oppor- tunities	No. retire each year	No. which die or are disabled each year	Yearly oppor- tunities
Miami	167	379.07	49	595.07	21.87	2.92	24.79
Mitchell	217	373.79	77	667.79	24.37	3.28	27.65
Montgomery	130	394.58	80	604.58	21.90	2.97	24.87
Morris	173	369.29	54	596.29	26.85	2.93	29.78
Morton	123	170.22	99	392.22	12.65	1.93	14.58
Nemaha	406	538.75	50	994.75	29.96	4.89	34.85
Neosho	152	439.94	75	666.94	27.11	3.28	30.39
Ness	221	363.30	68	652.30	23.98	3.21	27.19
Norton	159	306.94	43	508.94	19.42	2.50	21.92
Osage	217	365.98	59	641.98	23.95	3.16	27.11
Osborne	213	524.91	49	786.91	28.71	3.87	32.58
Ottawa	206	348.20	64	618.20	23.96	3.04	27.00
Pawnee	197	842.76	93	1132.76	40.68	5.57	55.25
Phillips	172	363.11	53	588.11	20.70	2.89	23.59
Pottawatomie	224	568.41	88	880.41	33.34	4.33	37.67

TABLE I Con't

County	Total no. of units \$20,000 or more	No. of \$20,000 units possible from consol- idation of units of less than \$20,000	Hired workers of 150 days or more	Total oppor- tunities	No. retire each year	No. which die or are disabled each year	Yearly oppor- tunities
Pratt	191	1065.53	96	1352.53	53.24	6.65	59.89
Rawlins	161	332.04	57	550.04	17.51	2.70	20.21
Reno	422	805.79	176	1403.79	49.77	6.91	56.68
Republic	324	761.26	61	1146.26	40.93	5.64	46.57
Rice	226	404.26	70	700.26	23.81	3.44	27.25
Riley	161	263.79	37	461.79	16.95	2.27	19.22
Rooks	138	313.91	54	505.91	19.60	2.49	22.09
Rush	115	332.95	49	496.95	18.96	2.44	21.40
Russell	111	287.21	35	433.21	17.05	2.13	19.18
Saline	197	354.50	75	626.50	25.26	3.08	28.58
Scott	207	1248.22	155	1610.22	46.80	7.92	54.72
Sedgwick	377	809.21	203	1389.21	45.69	6.83	52.52
Seward	119	412.63	107	638.63	20.86	3.14	24.00
Shawnee	159	319.90	114	592.90	23.90	2.91	26.81
Sheridan	190	474.45	59	723.45	23.95	3.56	27.51

TABLE I Con't.

County	Total no. of units \$20,000 or more	No. of \$20,000 units possible from consol- idation of units of less than \$20,000	Hired workers of 150 days or more	Total oppor- tunities	No. retire each year	No. which die or are disabled each year	Yearly oppor- tunities
Sherman	224	395.60	142	761.60	25.05	3.74	28.79
Smith	277	501.20	61	839.20	28.54	4.13	32.67
Stafford	199	341.43	64	604.43	24.77	2.97	27.74
Stanton	154	364.98	171	689.98	19.16	3.39	22.55
Stevens	197	255.74	121	573.74	18.62	2.82	21.44
Sumner	380	621.81	139	1140.81	41.94	5.61	47.55
Thomas	220	425.80	119	764.80	28.32	3.76	32.08
Trego	104	306.07	31	441.07	15.98	2.17	18.15
Wabaunsee	204	368.18	84	656.18	26.24	3.23	29.47
Wallace	117	202.60	78	397.60	11.69	1.95	13.64
Washington	405	716.32	87	1208.32	39.23	5.94	45.17
Wichita	183	1139.51	129	1451.51	39.22	7.14	46.36
Wilson	136	268.05	37	441.05	17.50	2.17	19.67
Woodson	97	745.12	65	907.12	36.28	4.46	40.74
Wyandotte	32	133.23	75	240.23	9.68	1.18	10.86

TABLE II

ANNUAL ENTRY OPPORTUNITIES IN PRODUCTION AGRICULTURE FOR THE STATE OF KANSAS

State	Total no. of units of \$20,000 or more	No. of \$20,000 units possible from consol- idation of units of less than \$20,000	Hired workers of 150 days or more	Total oppor- tunities	No. retire each year	No. which die or are disabled each year	Yearly oppor- tunities
Kansas	20,998	54,570.16	8,649	84,217.16	3,011.77	410.79	3,422.56
Ave./County	199.98	519.71	82.37	802.06	28.68	3.91	32.59

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

While the number of people employed in farming in Kansas has been on the decline in the past years, the average gross income per farm has shown a steady increase. The gross farming income has increased 56.6% from 1964 to 1969. Each year more capital was invested in building farming units capable of providing economic opportunities for the farmer and his family. Each year the farmer needed to become more productive to offset increased farm costs. To take advantage of the developments of new technology the farmer needed to be well educated. It became increasingly important to provide educational programs which would prepare the farmer to be more productive. It was important to know how many farmers and farm workers were needed annually by locality so that appropriate educational programs could be developed.

One of the problems confronting educators was to accurately predict the number of entrant opportunities in production agriculture each year. To do this a satisfactory approach for determining the number of farmers and farm workers who were needed each year was essential. The purpose of this study was to determine the number of annual entry opportunities in production agriculture for each county and the state of Kansas.

Previously three approaches were developed at Oklahoma State University by Lu, Horne, and Tweeten, to predict the number of replacement needs in production agriculture. The first approach involved land transactions

as the basis for computing the replacement needs of farmers. This method assumed that 36% of the land transactions in Oklahoma would provide entry opportunities in production agriculture. This approach was not used for Kansas because information needed to use this approach was not available.

Approach two was based upon an economic farm unit of \$10,000 or more gross income per year. The information needed to compute this approach was found in the Census of Agriculture. This approach was not used because a \$10,000 gross income would not be a satisfactory income for a farmer to rear a family.

The third approach was based upon \$20,000 or more gross income farming units. This approach involved adding the number of farms with gross incomes of \$20,000 or more and the number of hired farm workers of 150 days or more and the number of \$20,000 gross farming units which could be available with consolidation of farm units with gross incomes of less than \$20,000. The annual entry opportunities were determined by calculating the number of farmers who retired, died or became disabled each year. Annual entry opportunities in production agriculture were calculated for each county and for the state of Kansas

The results of the study were recorded in tabular form for each county and for the state. Information in Table I indicated that there were 24 counties with 40 or more annual opportunities to enter production agriculture. The six counties with the most annual opportunities to enter production agriculture as either a farm operator or as a hired farm worker were: Finney (105.82), Ford (104.71), Barber (88.40), Butler (67.04), Pratt (59.89), and Reno (56.68). There were 16 counties which had fewer than 20 annual opportunities to enter production agriculture. The six counties with the lowest number of entry opportunities

per year were Geary (8.78), Wyandotte (10.86), Wallace (13.64), Morton (14.58), Logan (14.80), and Elk (15.06).

Data in Table II reported that the average county in Kansas had 199.98 farms with gross annual incomes of \$20,000 or more, and 519.71 units would be available after consolidation of farms with less than \$20,000 gross annual income. There was an average of 82.37 hired farm workers per county. When the number of economic units of \$20,000 and the number of hired farm workers were added there were 802.06 entry opportunities per county in production agriculture. Upon the determination of the average annual entry opportunities it was found that 28.68 farmers retired and 3.91 died or became disabled each year providing a total of 32.95 annual entry opportunities per county.

There were 20,998 farms in Kansas which had gross incomes of \$20,000 or more with the possibility of 54,570.16 units of \$20,000 gross income after consolidation of the farms with incomes under \$20,000 gross per year. Kansas had 8,649 hired farm workers of 150 days or more. This gave 84,217.16 employment opportunities in production agriculture for Kansas. There were 3,011.16 who retired and 410.79 who died or became disabled annually. Thus there are 3,428.56 annual opportunities to enter production agriculture in Kansas due to retirement, death and disability.

The approach used to determine the number of annual production agriculture opportunities appeared to be workable. Many of the employment opportunities in counties with high average incomes will be hired farm workers. Economical farm units of \$20,000 could be obtained through consolidation of existing units or by intensification of the farming program. Other alternatives to increase farm income could be by custom farm work or supplemental employment with off-farm jobs.

The author recommends that the findings of this study be made available for predicting the annual entry opportunities in production agriculture for Kansas. The author also recommends that this approach be used again in five years when the 1974 Census of Agriculture becomes available. It is recommended that vocational agriculture programs be provided for those entering production agriculture,

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

1. Employment Opportunities and Competencies Needed in Farm Occupations in Selected Countries in Kentucky, Vocational Agricultural Education, State Department of Education, Frankfort, Kentucky, March, 1968.
2. U. S. Department of Agriculture, A Good Life for More People, 1971 Yearbook of Agriculture, U.S. Government Printing Office, 1971.
3. Drawbaugh, Charles C. and Richard H. Merritt, New Jersey Manpower Needs in Natural Resources and/or Agriculture, Rutgers University, New Brunswick, New Jersey, 1972.
4. Lu, Yoo-Chi, James Horne, and Luther Tweeten, Farming Opportunities for Farm Youth in Oklahoma and the United States, Bulletin B-683, Agricultural Experiment Station, Oklahoma State University, September, 1970.
5. U. S. Bureau of the Census, Census of Agriculture, 1969, Volume I, Area Reports, Part 21, Kansas, Section I. Summary Data, U.S. Government Printing Office, Washington, D. C., 1972.
6. U. S. Bureau of the Census, Census of Agriculture, 1969, Volume I, Area Reports, Part 21, Kansas, Section 2. County Data, Allen Co.-Leavenworth, Co., U.S. Government Printing Office, Washington, D.C., 1972.
7. U. S. Bureau of the Census, Census of Agriculture, 1969, Volume I, Area Reports Part 21. Kansas, Section 2. County Data, Lincoln Co.-Wyandotte Co., U.S. Government Printing Office, Washington, D.C., 1972.
8. Krebs, A. H., "General Report of the Advisory Council on Vocational Education, 1968: An Analysis." The Agricultural Education Magazine, 40:269-270, 272, June, 1968.
9. U. S. Office of Education, Vocational Education - The Bridge Between Man and His Work, General Report Prepared by the Advisory Council on Vocational Education, U.S. Government Printing Office, Washington, D.D., 1968.
10. Field, Ralph G., A Study of Occupational Opportunities and Training Needs for Youth for On-Farm Jobs in Selected Indiana Counties. Doctor's thesis. Purdue University, 1970.
11. New York Life Insurance Company, Standard Table of Mortality, New York, New York, 1959.

12. Creager, Marvin, A Follow-Up Study of LaCygne High School Male Graduates Between the Years 1960 - 1969. Master's Report. Kansas State University, 1971.
13. Jacobson, Robert B., A Comparison of the Responses of Vocational Agriculture and Non-Vocational Agriculture Students as to Factors Influencing Them to Become Farmers. Master's Report. Kansas State University, 1970.
14. Jones, Gary L., A Follow-Up Study of the Male Graduates of Peabody High School from 1951 to 1966. Master's Report. Kansas State University, 1967.
15. Thompson, David F., A Follow-Up of the Vocational Agriculture Graduates of Ford High School from 1953 - 1968. Master's Report. Kansas State University, 1969.

APPENDIX

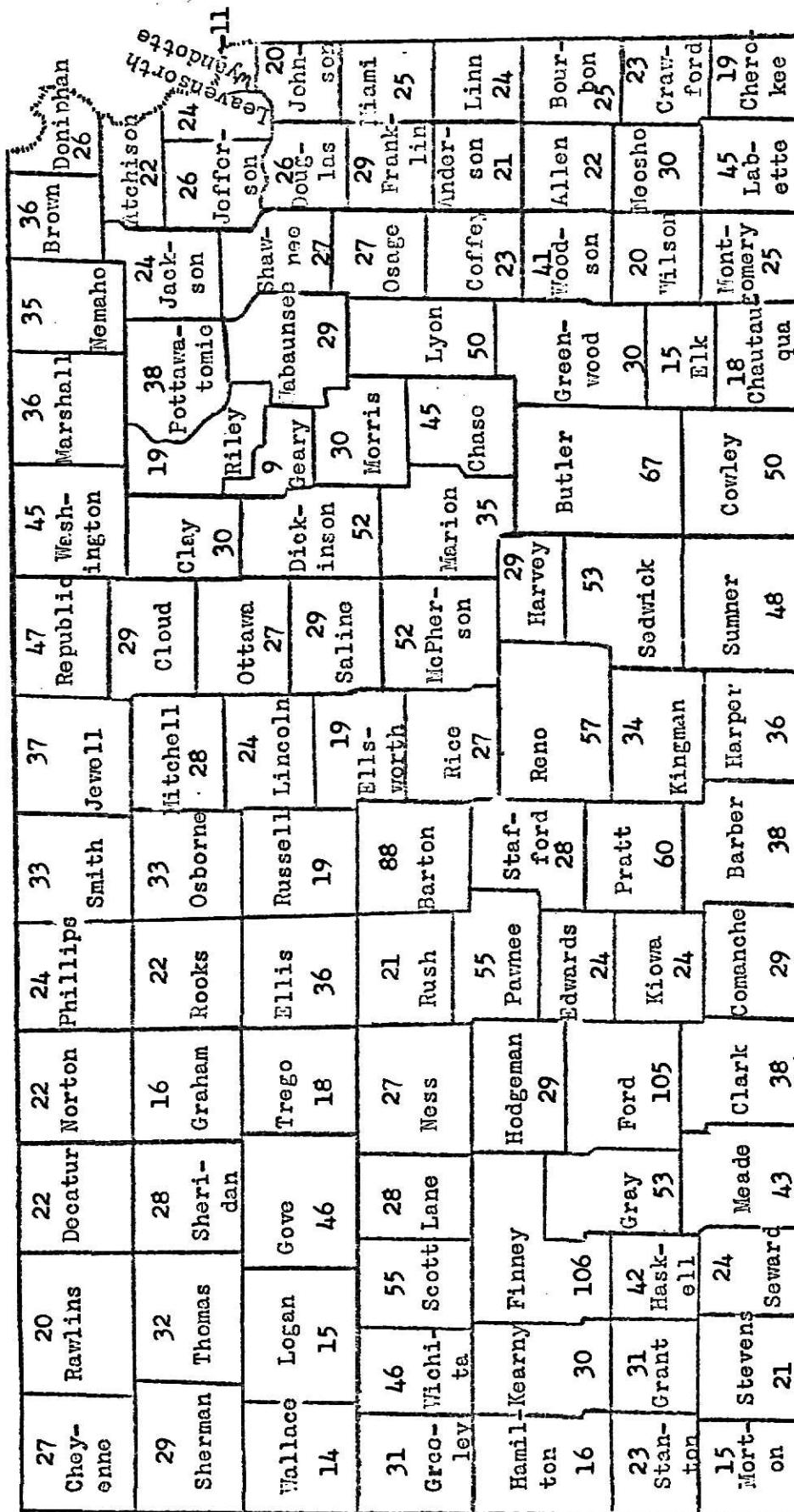


Figure 1

Entry Opportunities in Production Agriculture by County

A STUDY TO DETERMINE THE NUMBER OF
ANNUAL ENTRY OPPORTUNITIES IN PRODUCTION AGRICULTURE
FOR KANSAS

by

DWIGHT E. HYLE

B.S., Northeast Missouri State University, 1969

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1973

The purpose of this study was to determine the number of annual entry opportunities in production agriculture for Kansas. The objective was to identify the number of farming opportunities by county and state with \$20,000 or more annual gross income.

To determine the number of entry opportunities in production agriculture a method was used which was developed by the Agricultural Economics Department of Oklahoma State University. The method used involved the determination of entry opportunities based upon the number of farm opportunities with \$20,000 or more gross income. Information needed to determine the entry opportunities was taken from the 1969 Census of Agriculture, Volume I, Part 21, Kansas, Sections 1 and 2. The number of farms with gross incomes of \$20,000 or more, and the number of units of \$20,000 gross income which would be possible from the consolidation of the remaining farm units with gross incomes of less than \$20,000 was entered into the formula along with the number of hired farm workers to give the total opportunities in production agriculture.

After the gross number of farming opportunities was obtained the following approach was used to calculate the number of farmers which would be needed annually. The number retiring annually was determined by taking the average age of the farmers and calculating the number above the average age which would retire by the age 65. Insurance tables were used to determine the number who die or become disabled. Retirement, death, and disability numbers were totaled to get the annual opportunities for production agriculture for each county and the state.

The results were recorded in tabular form. There were 24 counties with 40 or more annual opportunities to enter production agriculture. The six counties with the most opportunities were Finney (105.82), Ford

(104.71), Barber (88.40), Butler (67.04), Pratt (59.89), and Reno (56.68). There were 16 counties which had fewer than 20 annual opportunities to enter production agriculture. The six counties with the lowest number of opportunities per year were Geary (8.78), Wyandotte (10.86), Wallace (13.64), Morton (14.58), Logan (14.80), and Elk (15.06). For Kansas the average county had 199.98 farms with gross annual incomes of \$20,000 or more, and 519.71 units would be available after consolidation of farms with less than \$20,000 gross income. There was an average of 82.37 hired farm workers per county giving a total of 802.06 opportunities in production agriculture per county. Upon the determination of the annual entry opportunities it was found that 28.68 farmers retired and 3.91 died or became disabled each year providing a total of 32.95 annual entry opportunities per county.

There were 20,998 farms in Kansas which had gross incomes of \$20,000 or more with the possibility of 54,570.16 units of \$20,000 gross income after consolidation. Kansas had 8,649 hired farm workers for 150 days or more. This gave 84,217.16 employment opportunities in production agriculture for Kansas. There were 3,011.16 who retired annually and 410.79 who died or became disabled. Thus there would be 3,428.56 annual opportunities to enter production agriculture in Kansas due to retirement, death and disability.

The approach used to determine the number of annual production agriculture opportunities appeared to be workable. Many of the employment opportunities in counties with high average incomes will be for hired farm workers. Economical farm units of \$20,000 could be obtained through consolidation of existing units or by intensification of the farming program. Other alternatives to increase farm income could be by custom

farm work or supplemental employment with off-farm jobs.

The author recommended that the findings of this study be made available for predicting the annual entry opportunities in production agriculture for Kansas. The author also recommended that this approach be used again in five years when the 1974 Census of Agriculture becomes available. It was recommended that vocational agriculture programs be provided for those entering production agriculture.