Economic Study Report No. S70-3

June 1970

FARM OPERATOR LEVEL-OF-LIVING INDEXES IN THE MIDCONTINENT REGION, 1950-64

by

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FARM OPERATOR LEVEL-OF-LIVING INDEXES IN THE MIDCONTINENT REGION, 1950-64

Jerome M. Stam*

I. Introduction

It is important that those concerned with the problems of rural America are informed about the farm level-of-living situation -- particularly in their section of the country. This study utilizes the U.S. Department of Agriculture's farm operator level-of-living indexes. 1/ By employing a series of tables and maps, the farm operator level-of-living situation is analyzed for 1950, 1959, and 1964. Emphasis in this analysis is on the 15-state, midcontinent region, which is the 12-state north-central region plus Colorado, Montana, and Wyoming. The three additional states were included because of their important economic relationship with the states of the north-central region. For example, Montana is part of the Ninth Federal Reserve District which has its headquarters in Minneapolis. These states contain 1,196 of the 3,071 counties of the United States or 38.9 percent of the total. Agriculture is an important segment of the region's economy.

U.S. Department of Agriculture level-of-living indexes relate to the farm operator. In 1964, about 5.8 percent of the estimated total U.S.

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1/ J. M. Zimmer and E. S. Manny, Farm Operator Level of Living Indexes for Counties of the United States, 1950, 1959, and 1964, U.S. Department of Agriculture, Statistical Bulletin 406, (Washington: U.S. Government Printing Office, 1967), 73 pp.

population, or 11,229,000 people, lived in the households of farm operators. 2/ Farm households were even more important relatively in the midcontinent region in that same year.

II. Objectives of the Study

The general purpose of the study is to provide laymen, extension personnel, educators, government employees, economic development organizations, and others interested in the economic well-being of farm operators with a ready reference source outlining the situation as it existed in the Midwestern United States between 1950 and 1964. The intent is to show where low farm-operator incomes exist rather than why they exist.

Specific objectives were:

(1) To assess briefly the U.S. Department of Agriculture's farm operator level-of-living index as a measure of economic well-being; and

(2) To relate the level of farm operator living in the 15 midcontinent region states and their counties to the United States, north-central region, and Minnesota indexes in each of the years under consideration, 1950, 1959, and 1964.

III. The Farm Operator Level-of-Living Index as a Measure of Economic Well-Being

The farm operator level-of-living indexes are based on five variables obtained from the U.S. Census of Agriculture: (1) average value of products sold per farm, (2) average value of land and buildings per farm, (3) percentage of farms with telephones, (4) percentage of farms with home freezers, and

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2/ J. M. Zimmer and E. S. Manny, Population Characteristics of Farm Operator Households, U.S. Department of Agriculture, Agricultural Economic Report No. 141, (Washington: U.S. Government Printing Office, 1968), p. 1.

(5) percentage of farms with automobiles. 3/ It is important to note that weights for dollar figures were adjusted for changes in the price levels through time, thus compensating for such changes.

The index is compiled for the majority of separate counties in all 50 states. However, data for those counties with fewer than 500 farms in 1959 were combined with other counties. Data for all counties in each such combination were treated as though they were for a single county. An attempt was made to aggregate counties that were similar in agricultural and other economic characteristics. Identical county combinations were used for 1950 and 1964, even though the original delineation was based on 1959 information.

The base year for the index is 1959. In that year, the U.S. county average index was 100. It had increased to 122 in 1964, but was 59 in 1950. States and counties with indexes above these figures in the respective years were over the national average, while those below were short of it.

The farm operator level-of-living index is a useful indicator of the relative well being of the farm operator family. Different geographical areas may be compared. Moreover, the index shows movements which have occurred in the level-of-living of the same or different regions over time. Thus, the level-of-living index is an extremely helpful tool if it is employed with a recognition of both its strengths and limitations.

One of its important limitations is the change in farm definitions through time. In the 1950 Census of Agriculture, a farm was defined as a place of 3 or more acres if the value of farm products produced for both home use and

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3/ The detailed methodology involved in computing the index is explained in J. M. Zimmer and E. S. Manny, Farm Operator Level-of-Living Indexes for Counties of the United States, 1950, 1959, and 1964, op. cit., pp. 1-2, 67-70.

sale in 1949 totaled $150 or more. Places of less than 3 acres were included only if the value of actual sales of agricultural products amounted to $150 or more. In 1959 and 1964, places of less than 10 acres were included as farms if the estimated sales of agricultural products for the year amounted to at least $250. Places of 10 or more acres were counted as farms if the estimated sales for the year amounted to at least $50. The less restrictive 1950 definition would allow the inclusion of more low-income farms. Such a difference would be especially important in low-income areas and, in any case, accounts for part of the difference between the 1950 and later indexes. The definitional change between 1950 and 1959 thus is much more important in the low-income, small-farm areas of the Southeastern States than in the central part of the country.

Some might object to the use of the county as the unit of geographical consideration. Although total population and population density does vary by county, it would be difficult to devise a more readily available unit for study. Statistics are compiled on the basis of counties, and some effort has been made in compiling the index to compensate for low farm operator density. It has been pointed out that counties are combined with other counties in compiling the index whenever they have fewer than 500 operators.

However, these are not the major shortcomings of the index. Perhaps its shortcomings have been outlined most succinctly by Ruttan. 4/ Although he was discussing the old Bureau of Agricultural Economics index, the criticisms still hold because the same technique has been used in calculating the index in more recent years. His criticims are: (1) The index is not closely related to average net income per farm operator, except at the lower income levels; (2) It is designed to measure only farm operator family level-of-living,

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4/ Vernon W. Ruttan, "The Relationship Between the BAE Level-of-Living Indexes and the Average Income of Farm Operators," Journal of Farm Economics, Vol. XXXVI, (February 1954), pp. 44-51. For details of the criticisms see this article.

i.e., it does not attempt to measure the level-of-living of all rural farm families or all rural families; (3) The index does not take into account farm operator and family earnings from off-farm sources; and (4) It does not take into account either the quantity or the quality of the telephone, home freezers, or automobiles owned.

In his criticism Ruttan does not imply "that either the level-of-living index or the income measure can not be extremely useful if employed with a clear recognition of what each does and does not measure." 5/ It is on this basis that one may proceed with further analysis.

IV. Farm Operator Level-of-Living Indexes for the United States -A Brief Look

This section provides background material, about the farm operator level-of-living situation in the United States in 1950, 1959, and 1964. The U.S. index stood at 59 in 1950, 100 in 1959, and 122 in 1964. This represents a 69.5 percent increase during 1950-59, 22.0 percent during 1959-64, and 106.8 percent during the entire 1950-64 span (table 1).

Space does not permit a detailed analysis. In 1950, California led all states with an index of 93, while Mississippi was last with 21. Arizona moved into first place in 1959 with an index of 167, while Mississippi still trailed with 62. Arizona still led in 1964 with a value of 192, but Mississippi and West Virginia tied for last that year with a figure of 89. Surprisingly, Mississippi showed the most improvement between 1950 and 1964 (323.8 percent), while Iowa showed the least gain (53.8 percent).

5/ Ibid., p. 45. However, farm operator level-of-living indexes are not going to be computed by the United States Department of Agriculture following the 1970 Census of Agriculture, mainly because of recognition of problems of the type discussed above.

Table 1. Farm operator level-of-living indexes and percentage increases for the United States, regions, divisions, and states, 1950, 1959, and 1964.

Area	1950	1959	1964	1950-59	1959-64	1950-64
	indexes			percentage change		
U.S.	59	100	122	69.5	22.0	106.8
Regions						
Northeast	75	112	126	49.3	12.5	68.0
North Central	76	114	130	50.0	14.0	71.1
South	39	81	108	107.7	33.3	176.9
West	77	126	145	63.6	15.1	88.3
New England	73	108	124	47.9	14.8	69.9
Maine	63	99	116	57.1	17.2	84.1
New Hampshire	72	104	119	44.4	14.4	65.3
Vermont	72	110	123	52.8	11.8	70.1
Massachusetts	79	111	126	40.5	13.5	59.5
Rhode Island	79	112	124	41.8	10.7	57.0
Connecticut	88	124	140	40.9	12.9	59.1
Middle Atlantic	76	114	128	50.0	12.3	68.4
New York	80	116	128	45.0	10.3	60.0
New Jersey	86	123	138	43.0	12.2	60.5
Pennsylvania	70	110	124	57.1	12.7	77.1
East North Central	77	115	128	49.4	11.3	66.2
Ohio	75	112	124	49.3	10.7	65.3
Indiana	77	117	130	51.9	11.1	68.8
Illinois	85	125	141	47.1	12.8	65.9
Michigan	68	106	120	55.9	13.2	76.5
Wisconsin	77	111	123	44.2	10.8	59.7
West North Central	76	114	131	50.0	14.9	72.4
Minnesota	79	113	128	43.0	13.3	62.0
Iowa	91	128	140	40.7	9.4	53.8
Missouri	55	93	112	69.1	20.4	103.6
North Dakota	71	113	132	59.2	16.8	85.9
South Dakota	76	113	133	48.7	17.7	75.0
Nebraska	82	123	142	50.0	15.4	73.2
Kansas	80	117	135	46.2	15.4	68.8

Table 1. Farm operator level-of-living indexes and percentage increases for the United States, regions, divisions, and states, 1950, 1959, and 1964 (Cont'd.).

Area	1950	1959	1964	1950-59	1959-64	1950-1964
	indexes			percentage change		
South Atlantic	33	81	108	113.2	33.3	184.2
Delaware	80	122	139	52.5	13.9	73.8
Maryland	71	113	132	59.2	16.8	85.9
Virginia	42	80	103	90.5	28.8	145.2
West Virginia	35	68	89	94.3	30.9	154.3
North Carolina	32	74	98	131.2	32.4	206.3
South Carolina	33	74	97	124.2	31.1	193.9
Georgia	31	82	110	164.5	34.1	254.8
Florida	47	102	134	117.0	31.4	185.1
East South Central	30	68	92	126.7	35.3	206.7
Kentucky	39	72	92	84.6	27.8	135.9
Tennessee	31	71	94	129.0	32.4	203.2
Alabama	22	65	92	195.5	41.5	318.2
Mississippi	21	62	89	195.2	43.5	323.8
West South Central	47	91	120	93.6	31.9	155.3
Arkansas	25	64	95	156.0	48.4	280.0
Louisiana	35	90	115	157.1	27.8	228.6
Oklahoma	51	91	111	78.4	22.0	117.6
Texas	59	103	131	74.6	27.2	122.0
Mountain	71	122	139	71.8	13.9	95.8
Montana	71	126	144	77.5	14.3	102.8
Idaho	76	122	136	60.5	11.5	78.9
Wyoming	74	126	150	70.3	19.0	102.7
Colorado	78	124	143	59.0	15.3	83.3
New Mexico	53	100	131	88.7	31.0	147.2
Arizona	85	167	192	96.5	15.0	125.9
Utah	65	112	122	72.3	8.9	87.7
Nevada	79	135	153	70.9	13.3	93.7
Pacific	83	131	154	57.8	17.6	85.5
Washington	80	121	135	51.2	11.6	68.8
Oregon	74	119	137	60.8	15.1	85.1
California	93	147	179	58.1	21.8	92.5
Alaska	30	100	100	233.3	0	233.3
Hawaii	87	---	153	-----	----	75.9

Map I provides an overview of the state index situation and compares it with the national average value in 1950, 1959, and 1964. The map shows the heavy concentration of lower values in the South and border states. Twelve states, most of them Southern States, were below the national average in every year considered. The list includes Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia, and West Virginia. In 1950, these states were joined by Florida and New Mexico in being below the U.S. average. By 1959, Florida and New Mexico were above the national average, but Maine had fallen below it. In 1964, Michigan and New Hampshire joined the group below the national average.

Counties serve to illustrate the tremendous variation which exists within the country. For example, in 1950 the county with the highest index was Kern County, California with a value of 145, and the low was an almost unbelievable figure of 6 in Leslie County, Kentucky. In 1959, the high was 243 in Imperial County, California and the low was 26 in Breathitt County, Kentucky. These same two counties were high and low again in 1964 with values of 378 and 46, respectively.

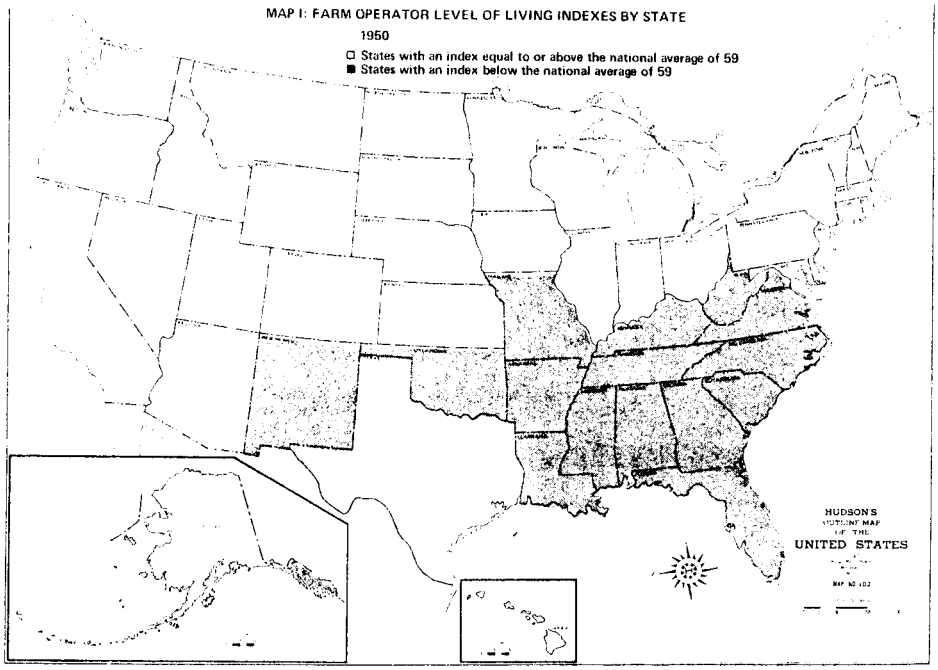
V. Farm Operator Level-of-Living Indexes for the Midcontinent Region

The purpose of this section is to investigate farm operator level-of-living indexes in detail for the 15-state midcontinent region. First, a general look at the situation is taken at the state level within the region. Next, a detailed analysis of conditions at the county level is made. County indexes throughout the region are compared with three different standards or norms -- the United States average, the north-central region average, and the Minnesota average — for each of the years under consideration, 1950, 1959, and 1964.

MAP I: FARM OPERATOR LEVEL OF LIVING INDEXES BY STATE

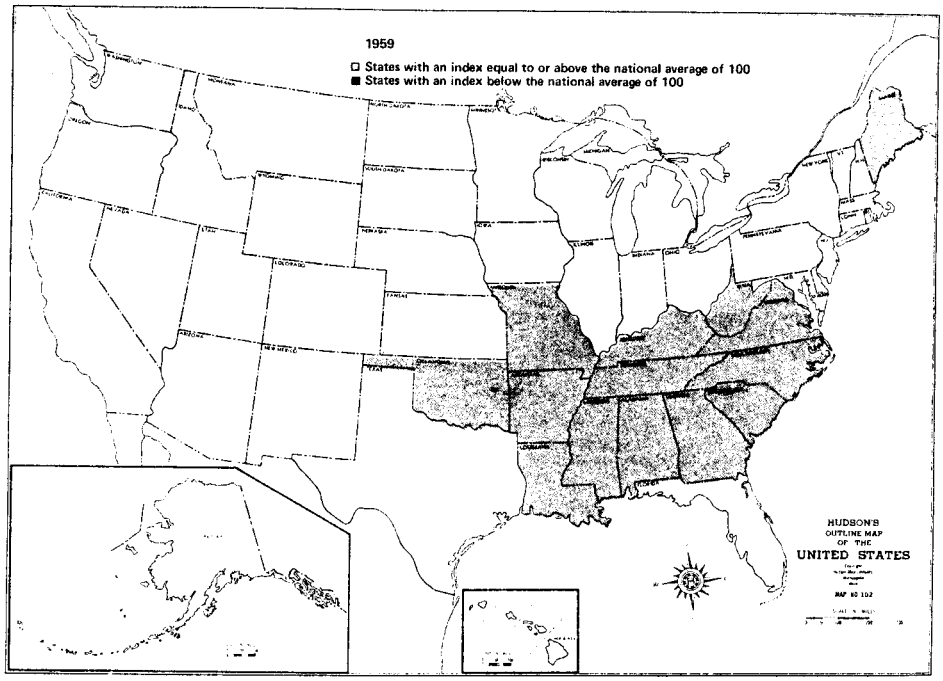
1950

□ States with an index equal to or above the national average of 59
■ States with an index below the national average of 59



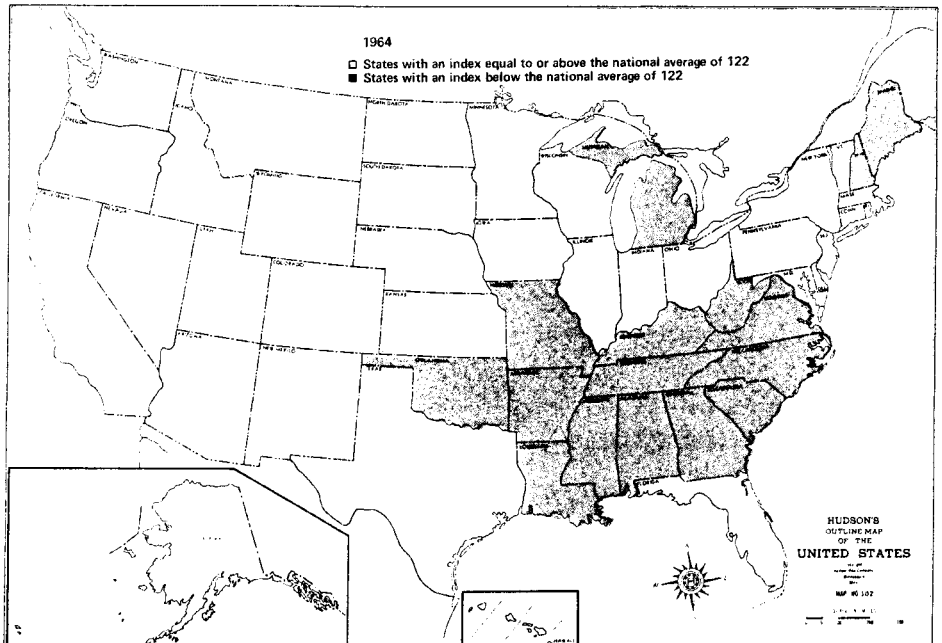
1959

□ States with an index equal to or above the national average of 100
■ States with an index below the national average of 100



1964

□ States with an index equal to or above the national average of 122
■ States with an index below the national average of 122



A. By State

Farm operator level-of-living indexes for each midcontinent region state are given in table 2. Here the states are listed in alphabetical order with no attempt at ranking. All midcontinent region states had an index above the U.S. average in each year, with the exception of Missouri which was below the national average in each year. In 1950, Iowa had the highest index (91), while Missouri had the lowest (55). These same states held the extremes again in 1959 with respective values of 128 and 93. But in 1964 Wyoming, with an index of 150, replaced Iowa at the top, while Missouri still trailed with 112.

Table 2. Farm operator level-of-living indexes and percentage increase for states in the midcontinent region and the United States, 1950, 1959, and 1964.

Area	Level-of-living index			Percentage Increase		
	1950	1959	1964	1950-59	1959-64	1950-64
U.S.	59	100	122	69.5	22.0	106.8
1. Colorado	78	124	143	59.0	15.3	83.3
2. Illinois	85	125	141	47.1	12.8	65.9
3. Indiana	77	117	130	57.9	11.1	68.8
4. Iowa	91	128	140	40.7	9.4	53.8
5. Kansas	80	117	135	46.2	15.4	68.8
6. Michigan	68	106	120	55.9	13.2	76.5
7. Minnesota	79	113	128	43.0	13.3	62.0
8. Missouri	55	93	112	69.1	20.4	103.6
9. Montana	71	126	144	77.5	14.3	102.8
10. Nebraska	82	123	142	50.0	15.4	73.2
11. North Dakota	71	113	132	59.2	16.8	85.9
12. Ohio	75	112	124	49.3	10.7	65.3
13. South Dakota	76	113	133	48.7	17.7	75.0
14. Wisconsin	77	111	123	44.2	10.8	59.7
15. Wyoming	74	126	150	70.3	19.0	102.7

Through time, the gaps in level-of-living among the midcontinent region states have been lessening. This is illustrated by the lowest ranking state, Missouri, showing the greatest improvement (103.6 percent) in its index between 1950 and 1964. In contrast, the high ranking state of Iowa showed the least gain (53.8 percent). Perhaps the reason the gap between states lessened during this period was due to the poorer areas acquiring electricity (hence, home freezers) and telephones during this span. The richer areas typically possessed these items in 1950.

The rank of midcontinent region states, as determined by farm operator level-of-living indexes, is given in table 3. The reported values represent how each state ranked in the U.S. in each particular year. For example, a rank of 7.0 for a state indicates that the state was seventh in the nation based on the farm operator level-of-living index in the year being considered. A value of 5.5 shows that the state was tied for fifth and sixth places in the country for that year. In 1950 and 1959, the conterminous 48 states and Alaska were included in the rankings. All 50 states were included in 1964.

It is obvious that if the 15 states are ranked from high to low based on all U.S. data, they also are ranked for the midcontinent region. This is the case in table 3. From this table, it is evident that considerable shifting in order occurred in the midcontinent region between each year — 1950, 1959, and 1964.

Table 3. Rank of midcontinent region states as determined by farm operator level-of-living indexes, 1950, 1959, and 1964.

State	1950	State	1959	State	1964
	Rank		Rank		Rank
1. Iowa	2.0	1. Iowa	4.0	1. Wyoming	5.0
2. Illinois	5.5	2. Montana	5.5	2. Montana	6.0
3. Nebraska	7.0	3. Wyoming	5.5	3. Colorado	7.0
4. Kansas	9.5	4. Illinois	7.0	4. Nebraska	8.0
5. Minnesota	13.5	5. Colorado	8.5	5. Illinois	9.0
6. Colorado	16.0	6. Nebraska	10.5	6. Iowa	10.5
7. Indiana	17.5	7. Kansas	16.5	7. Kansas	16.5
8. Wisconsin	17.5	8. Indiana	16.5	8. South Dakota	19.0
9. South Dakota	19.5	9. Minnesota	20.5	9. North Dakota	20.5
10. Ohio	21.0	10. North Dakota	20.5	10. Indiana	24.0
11. Wyoming	22.5	11. South Dakota	20.5	11. Minnesota	25.5
12. Montana	27.0	12. Ohio	24.0	12. Ohio	29.0
13. North Dakota	27.0	13. Wisconsin	26.5	13. Wisconsin	31.5
14. Michigan	30.0	14. Michigan	30.0	14. Michigan	34.0
15. Missouri	34.0	15. Missouri	37.0	15. Missouri	38.0

B. By County, Related to the United States Average

The analysis now turns to farm operator level-of-living indexes in the 1,196-county, 15-state midcontinent region. In this section, the counties of the region are compared with the United States county average index for three separate years – 1950, 1959 and 1964.

1. 1950

In 1950, 13.4 percent of the 1,196 midcontinent region counties had farm operator level-of-living indexes below the U.S. average of 59. Of these 160 counties, 54 were located in Missouri. Thus, the ranking in table 5 indicates that Missouri headed the list, with 47.4 percent of its counties below the U.S. average of 59. At the other extreme, Iowa, Nebraska, and

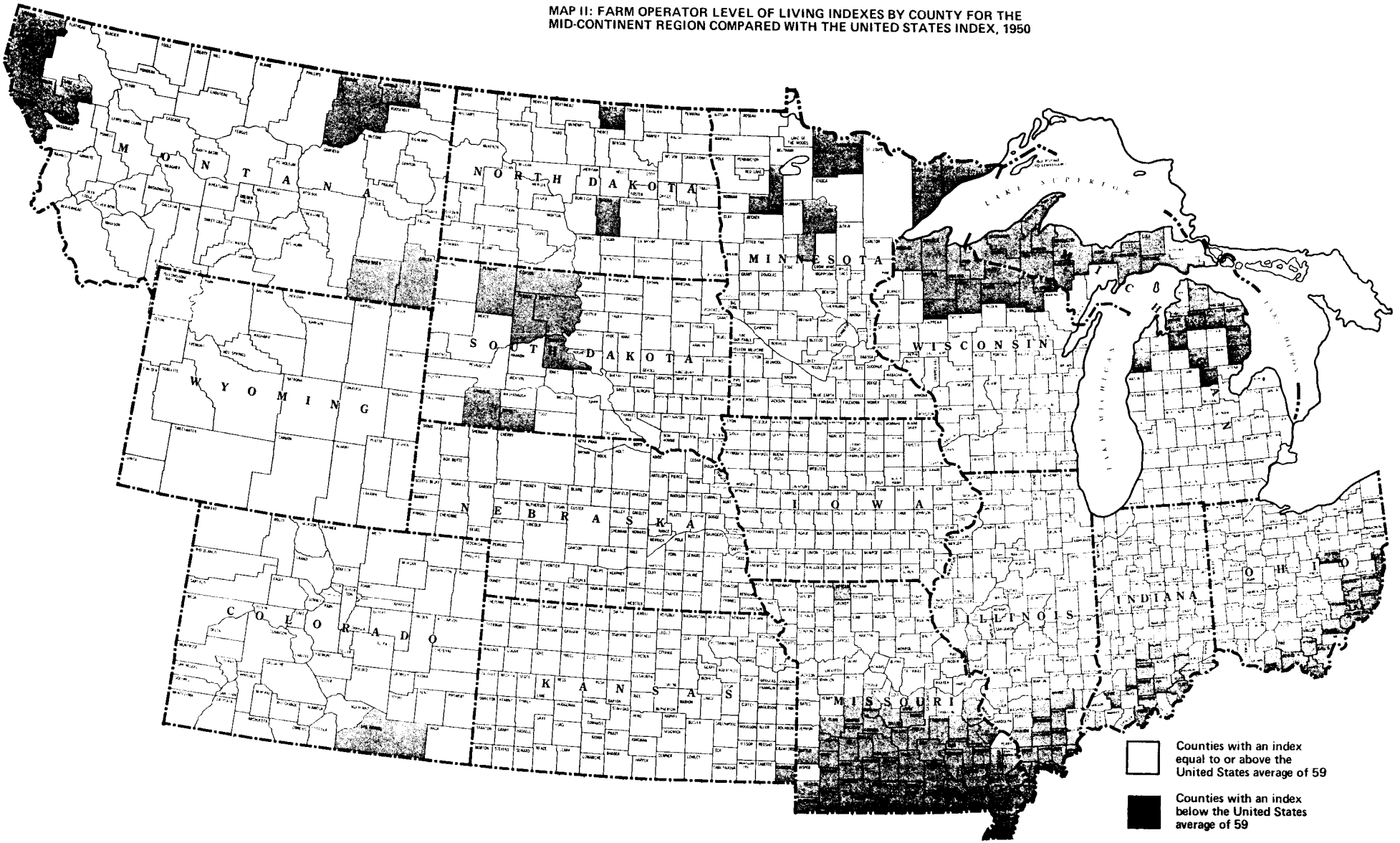
Wyoming had no counties lower than the national average. Only six states — Missouri, Michigan, Ohio, Illinois, Wisconsin, and Indiana — had 10 or more counties below the U.S. average. Minnesota had six counties or 6.9 percent of its total counties below the U.S. level.

Map II shows the location of the low-index counties for 1950 and the heaviest concentrations of counties with low farm operator level-of-living indexes in the Upper Peninsula of Michigan, southern Missouri, and northern Wisconsin. Smaller clusters of low-index counties are located in the northern part of Michigan's Lower Peninsula, northern Minnesota, and the southern portions of Illinois, Indiana, and Ohio. Other low-income counties are located in Colorado, North and South Dakota, and Montana.

Table 4. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the United States index, 1950.

State	Total number of counties	Number below U.S. index (59)	Percentage below U.S. index
1. Missouri	114	54	47.4
2. Michigan	83	25	30.1
3. Ohio	88	16	18.2
4. Illinois	102	16	15.7
5. Wisconsin	71	11	15.5
6. Montana	56	8	14.3
7. Indiana	92	13	14.1
8. South Dakota	67	7	10.4
9. Minnesota	87	6	6.9
10. North Dakota	53	2	3.8
11. Colorado	63	1	1.6
12. Kansas	105	1	1.0
13. Iowa	99	0	0.0
14. Nebraska	93	0	0.0
15. Wyoming	23	0	0.0
Total	1,196	160	13.4

MAP II: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE UNITED STATES INDEX, 1950



2. 1959

In 1959, 16.4 percent of the midcontinent region counties had farm operator level-of-living indexes below the national average (table 5). Of the 196 counties below the U.S. average, 63 were located in Missouri. Thus, it is not surprising that 55.3 percent of Missouri's counties were below the U.S. average. The remainder of the midcontinent region states are ranked in the table 5 also. Wyoming was the only state in the 15-state area which did not have a county below the national average. The rankings in table 5 indicate that seven of the midcontinent states had 10 or more counties below the U.S. county average. Ten of the 15 states had a higher percentage of their counties with indexes below the U.S. county average in 1959 than in 1950.

The geographical location of the counties with farm operator level-of-living indexes below the U.S. county average is shown in map III. Heavy concentration of counties below the national average were located in the Upper Peninsula of Michigan, central and southern Missouri, and northern Wisconsin. Other significant clusters of low-index counties were in northern Minnesota, north central South Dakota, extreme northwestern Montana, south central Colorado, and in the southern portions of Illinois, Indiana, and Ohio.

3. 1964

The number and percentage of midcontinent region counties with farm operator level-of-living indexes below the U.S. county average index of 122 in 1964 are given in table 6. The percentage of counties in the region below the national average increased to 25.2 percent in 1964. The percentage of

MAP III: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE UNITED STATES INDEX, 1959

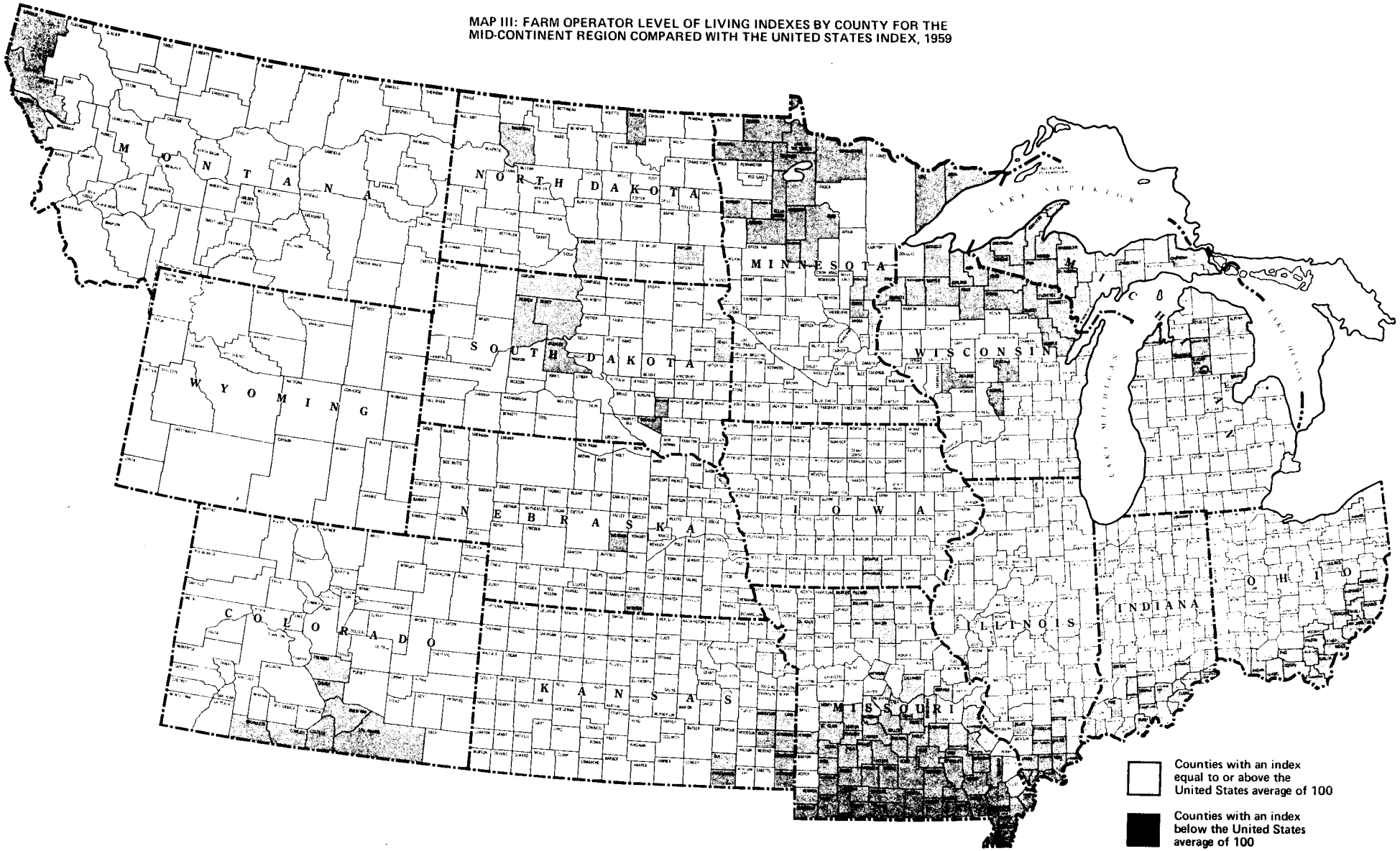


Table 5. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the United States index, 1959.

State	Total number of counties	Number below U.S. index (100)	Percentage below U.S. index
1. Missouri	114	63	55.3
2. Michigan	83	19	22.9
3. Wisconsin	71	16	22.5
4. Ohio	88	19	21.6
5. Minnesota	87	17	19.5
6. Indiana	92	15	16.3
7. Illinois	102	14	13.7
8. Colorado	63	7	11.1
9. South Dakota	67	7	10.4
10. Kansas	105	8	7.6
11. North Dakota	53	4	7.5
12. Montana	56	3	5.4
13. Nebraska	93	2	2.2
14. Iowa	99	2	2.0
15. Wyoming	23	0	0.0
Total	1,196	196	16.4

counties below the national average increased in 11 of the 15 states between 1959 and 1964. Of the 301 region counties below the national average, 83 were in Missouri and 42 in Michigan. These two states alone accounted for 42% of the midcontinent area low-index counties. Missouri led all midcontinent states with 72.8 percent of its counties below the U.S. average. Eight of the states had 10 or more percent of their counties below the U.S. index of 122. Minnesota ranked fifth with 35.6 percent of its counties below the U.S. index of 122. Only North Dakota and Wyoming had no counties below the national average in 1964.

An interesting geographical distribution of the low-index counties is revealed in map IV. Large concentrations of counties below the national average index in 1964 were located in southern Missouri and in the northern parts of Michigan, Wisconsin, and Minnesota. Lesser concentrations of

Table 6. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the United States index, 1964.

State	Total number of counties	Number below U.S. index (122)	Percentage below U.S. index
1. Missouri	114	83	72.8
2. Michigan	83	42	50.6
3. Wisconsin	71	32	45.1
4. Ohio	88	34	38.6
5. Minnesota	87	31	35.6
6. Indiana	92	24	26.1
7. Illinois	102	18	17.6
8. Kansas	105	17	16.2
9. Iowa	99	9	9.1
10. Montana	56	4	7.1
11. South Dakota	67	3	4.5
12. Nebraska	93	3	3.2
13. Colorado	63	1	1.6
14. North Dakota	53	0	0.0
15. Wyoming	23	0	0.0
Total	1,196	301	25.2

low-index counties were situated in northern Missouri, and southern Iowa, southern Illinois, southern Indiana, and southern and eastern Ohio. The remaining counties in the 15 states below the national average are few in number and quite scattered.

4. Change from 1950 to 1964

Between 1950 and 1964, farm operator level-of-living indexes in the midcontinent region generally lost ground when compared with the national average. In 1964, an addtional 11.8 percent of the 15-state area's counties were below the national average than in 1950 (table 7). Ten of the 15 states experienced increases in the number of low index counties between 1950 and 1964. The sharpest gain was the 29.6 experienced by Wisconsin. Minnesota

MAP IV: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE UNITED STATES INDEX, 1964

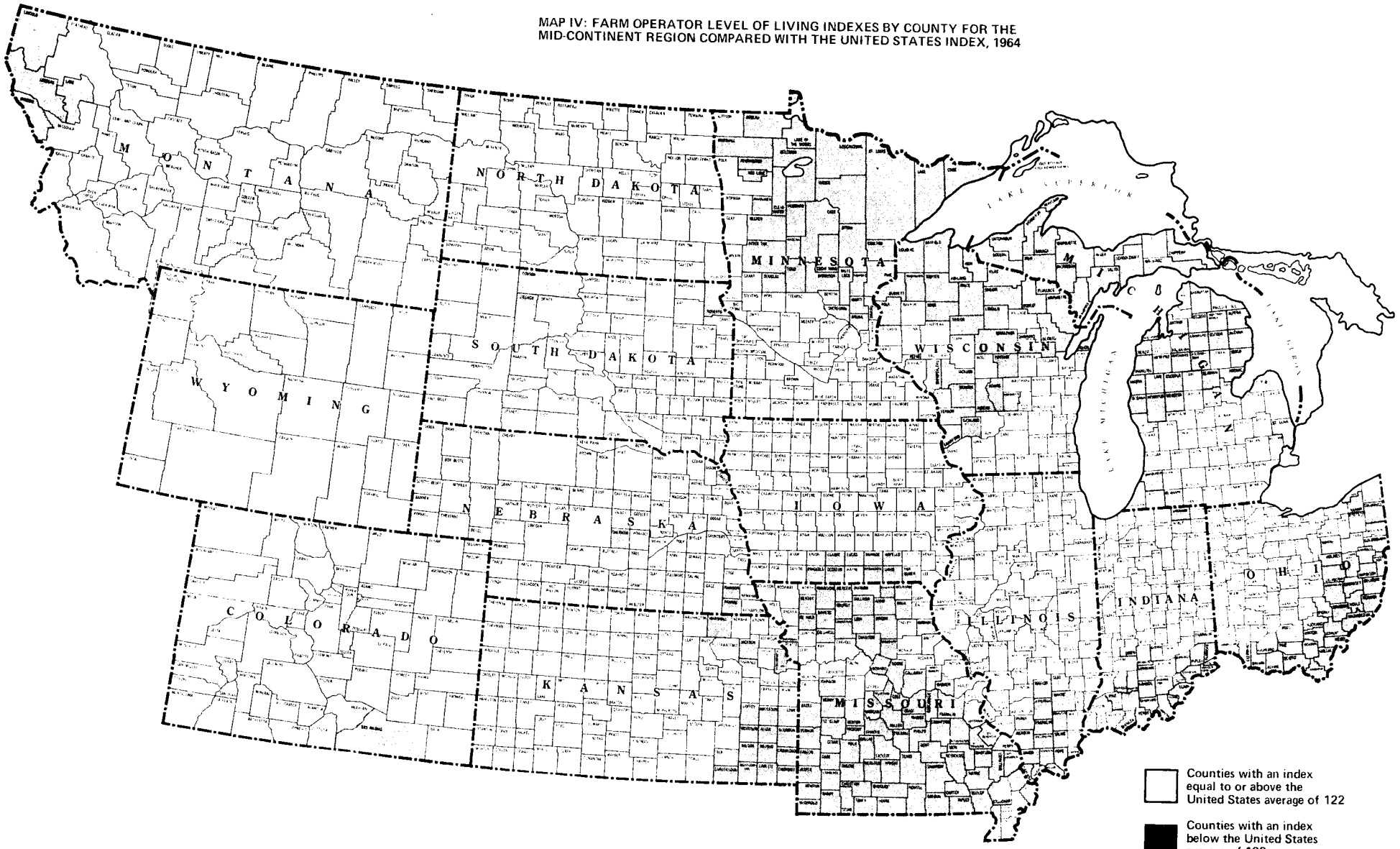


Table 7. Ranking of midcontinent region states according to thepercentage of counties below the U.S. county average farm operator level-of-living indexes 1950, 1959, and 1964, and by net percentage change of indexes, 1950-64.

Ranking of states 1950	Percentage of counties below U.S. index 1950	Ranking of states 1959	Percentage of counties below U.S. index 1959	Ranking of states 1964	Percentage of counties below U.S. index 1964	Ranking of states on basis of net percentage change 1950-64	Net percentage change 1950-64
1. Missouri	47.4	1. Missouri	55.3	1. Missouri	72.8	1. Wisconsin	+29.6
2. Michigan	30.1	2. Michigan	22.9	2. Michigan	50.6	2. Minnesota	+28.7
3. Ohio	18.2	3. Wisconsin	22.5	3. Wisconsin	45.1	3. Missouri	+25.4
4. Illinois	15.7	4. Ohio	21.6	4. Ohio	38.6	4. Michigan	+20.5
5. Wisconsin	15.5	5. Minnesota	19.5	5. Minnesota	35.6	5. Ohio	+20.4
6. Montana	14.3	6. Indiana	16.3	6. Indiana	26.1	6. Kansas	+15.2
7. Indiana	14.1	7. Illinois	13.7	7. Illinois	17.6	7. Indiana	+12.0
8. S. Dakota	10.4	8. Colorado	11.1	8. Kansas	16.2	8. Iowa	+ 9.1
9. Minnesota	6.9	9. S. Dakota	10.4	9. Iowa	9.1	9. Nebraska	+ 3.2
10. N. Dakota	3.8	10. Kansas	7.6	10. Montana	7.1	10. Illinois	+ 1.9
11. Colorado	1.6	11. N. Dakota	7.5	11. S. Dakota	4.5	11. Colorado	0.0
12. Kansas	1.0	12. Montana	5.4	12. Nebraska	3.2	12. Wyoming	0.0
13. Iowa	0.0	13. Nebraska	2.2	13. Colorado	1.6	13. N. Dakota	- 3.8
14. Nebraska	0.0	14. Iowa	2.0	14. N. Dakota	0.0	14. S. Dakota	- 5.9
15. Wyoming	0.0	15. Wyoming	0.0	15. Wyoming	0.0	15. Montana	- 7.2
Total	13.4		16.4		25.2		+11.8

was second with 28.7 percent. No net percentage change was registered by Colorado and Wyoming, while Montana and North and South Dakota had some net improvement during the 1950-64 span.

Considerable change occurred in the ranking of individual states between each of the years under consideration. This switching was much more prevalent among the middle rankings than among those at either extreme. Space does not permit a detailed discussion. Individual state changes may be ascertained from table 7.

C. By County, Related to the North-Central Region Average

The reference point now switches from the United States to the north-central region index. In this section, each county index in the 15-state midcontinent region is compared with the farm operator level-of-living index for the 12-state north-central region in each of the respective years, 1950, 1959, and 1964. Because the 15-state midcontinent entirely encompasses the 12-state north-central region, this essentially is an analysis of the situation within the 15-state region. Only a minority of the midcontinent region's counties and farm operators are located in Colorado, Montana, and Wyoming — the only midcontinent region states not included in the north-central region.

1. 1950

The north-central region farm operator level-of-living index was 76 in 1950. In that year, 560 out of the 1,196 midcontinent region counties had indexes below this figure (table 8). This was 46.8 percent of the total. Missouri alone had 108 of the 560 low-index counties. Only six Missouri counties were above the north-central region average. All states in the midcontinent region, with the lone exception of Iowa, had 25 percent or more of their counties below the north-central average in 1950. Six of the states had over 50 percent

Table 8. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the north-central region index, 1950

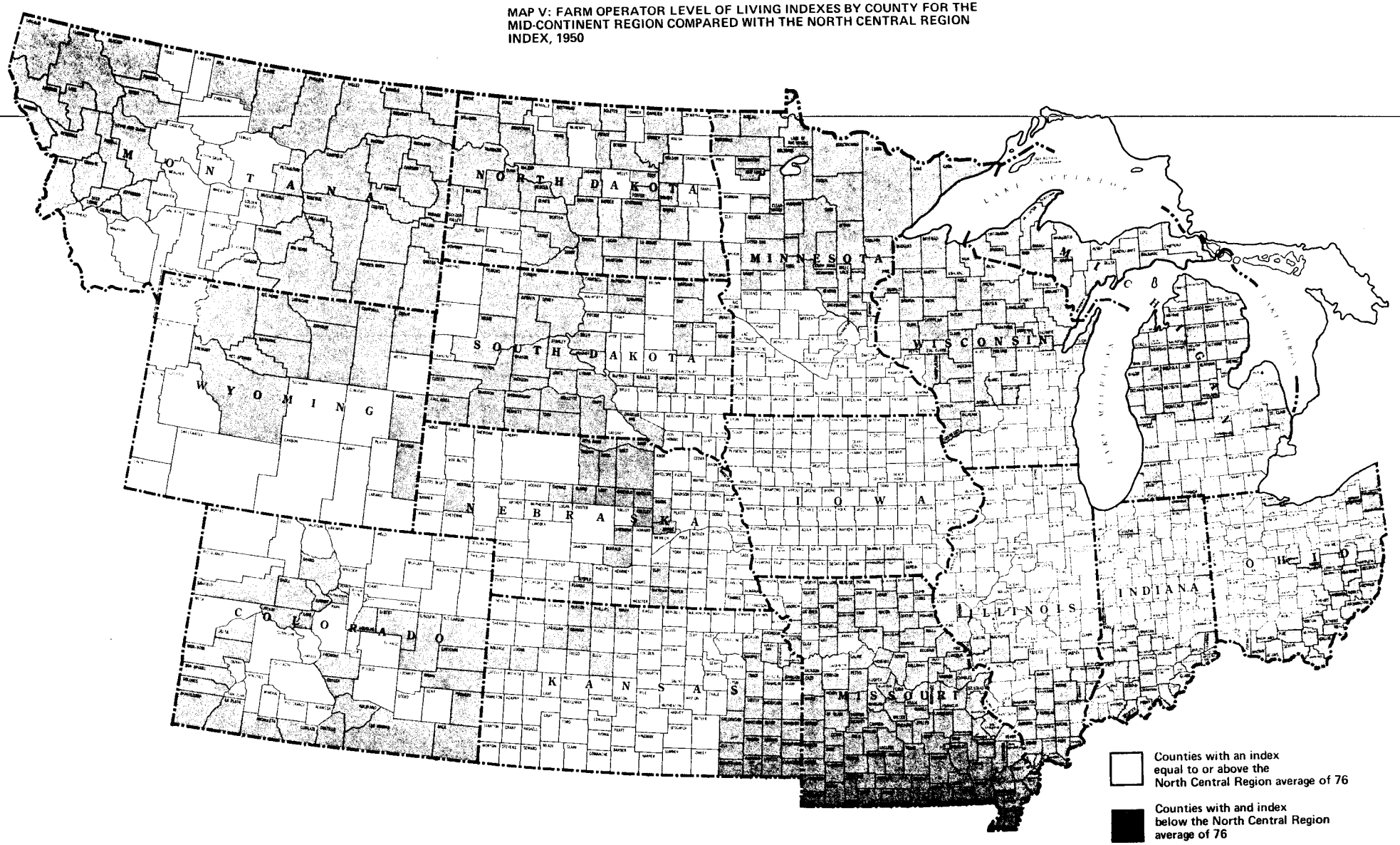
State	Total number of counties	Number below N.C.R. index (76)	Percentage below N.C.R. index
1. Missouri	114	108	94.7
2. North Dakota	53	41	77.4
3. Michigan	83	60	72.3
4. Montana	56	40	71.4
5. Wisconsin	71	37	52.1
6. South Dakota	67	34	50.7
7. Wyoming	23	11	47.8
8. Colorado	63	29	46.0
9. Indiana	92	36	39.1
10. Ohio	88	34	38.6
11. Minnesota	87	33	37.9
12. Illinois	102	34	33.3
13. Kansas	105	33	31.4
14. Nebraska	93	24	25.8
15. Iowa	99	6	6.1
Total	1,196	560	46.8

of their counties below the north-central figure. This indicates widely divergent index number values among the counties in that year.

The geographic distribution of the low-index counties for 1950 presented in map V is interesting. Essentially all above average counties were located in the highly productive agricultural areas which produce corn, wheat, and range products. Of course, exceptions existed such as the Red River Valley area of Minnesota and North Dakota which produces large quantities of sugar beets, flax, and potatoes. But, the adherence to the general rule is quite impressive.

Briefly focusing on the low-index-value counties, it is not surprising to find large concentrations in the northern parts of Michigan, Minnesota, and Wisconsin. It was also expected that the southern parts of Illinois, Indiana,

MAP V: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE NORTH CENTRAL REGION INDEX, 1950



and Ohio and most of Missouri would be low-index-value areas. This had been shown in the earlier analysis. What are new are the large blocks of low-index counties in Colorado, North and South Dakota, Montana, and Wyoming. Large portions of this area are plains and mountain areas subject to great weather variation and limited in crop-growing ability where annual rainfall is low.

2. 1959

In 1959, the north-central region farm operator level-of-living index was 114 compared with the U.S. average of 100. Thus, the north-central index in that year had only a 14 point advantage over the national average as opposed to 17 points in 1950 (76 compared with 59). Based on this evidence, one would expect fewer midcontinent region counties to be below the north-central average in 1959 than in 1950.

The data in Table 9 indicate that 40.6 percent of the midcontinent region counties were below the north-central average farm operator level-of-living index in 1959. This compares with 46.8 percent in 1950 and is not as great a decrease as one might expect. Ten of the 15 midcontinent states showed some improvement between 1950 and 1959.

Missouri had 104 of the 485 low-index counties in the 15-state area for 1959. Seven states had over 40 percent of their counties below the north-central average in that year. Only one state, Wyoming, had less than 10 percent of its counties below the north-central region average. Thus, despite the improvement between 1950 and 1959, many counties remained below average in 1959.

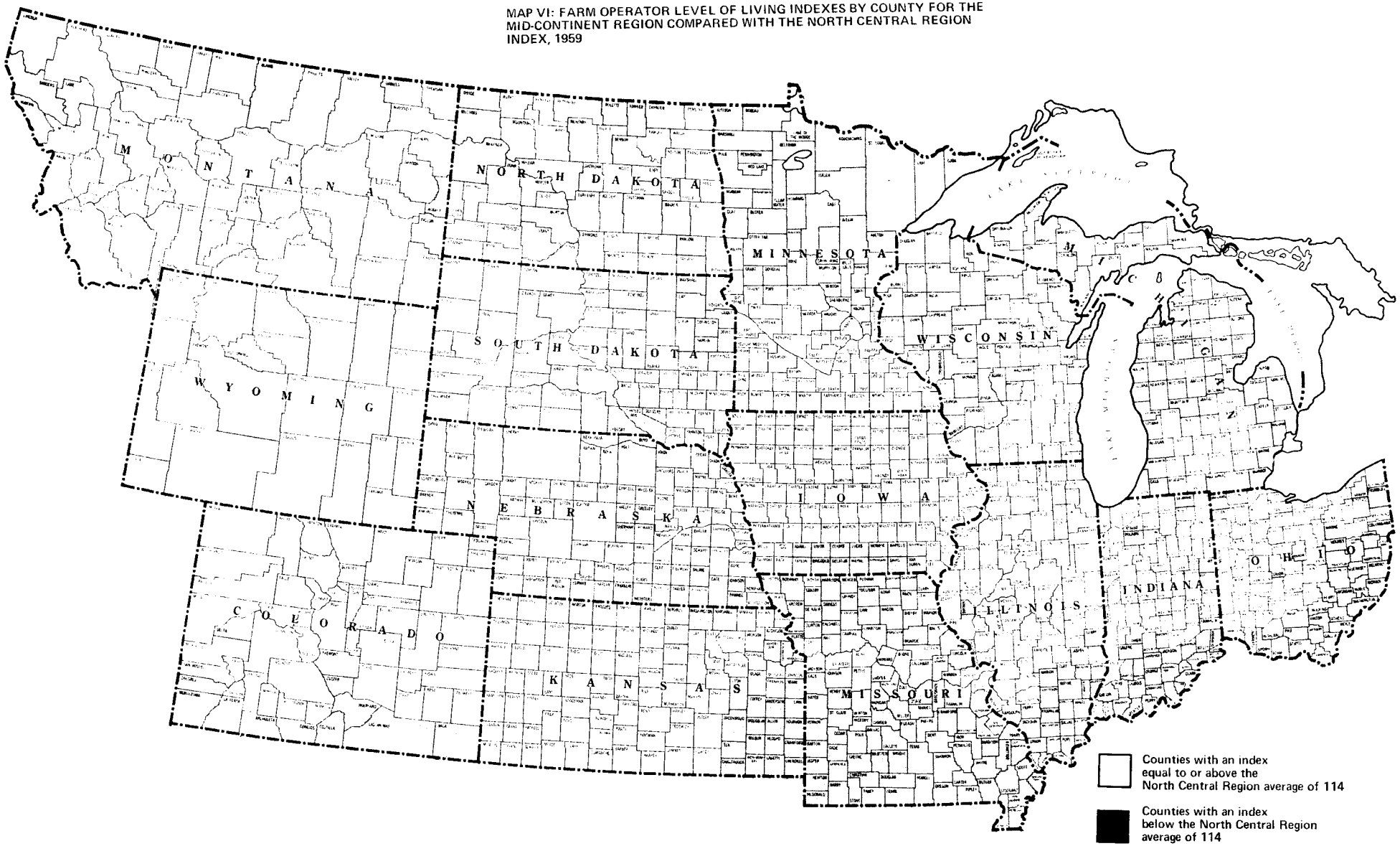
Table 9. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the north-central region index, 1959.

State	Total number of counties	Number below N.C.R. index (114)	Percentage below N.C.R. index
1. Missouri	114	104	91.2
2. Michigan	83	63	75.9
3. Wisconsin	71	42	59.2
4. North Dakota	53	25	47.2
5. Minnesota	87	41	47.1
6. Ohio	88	37	42.0
7. South Dakota	67	28	41.8
8. Indiana	92	33	35.9
9. Illinois	102	30	29.4
10. Kansas	105	30	28.6
11. Colorado	63	13	20.6
12. Montana	56	10	17.9
13. Nebraska	93	14	15.1
14. Iowa	99	13	13.1
15. Wyoming	23	2	8.7
Total	1,196	485	40.6

The geographical distribution of the low-index counties in 1959 is shown in map VI. The biggest change between 1950 and 1959 was fewer below average counties in 1959 in the seven western states of the region. Low-index counties were fairly well scattered in these states in 1959 with the exception of clusters in southern Colorado, North and South Dakota, and southeastern Kansas.

In the eastern eight states, large concentrations of below average counties are found in Missouri, southern Iowa, Illinois, Indiana and Ohio, and northern Michigan, Minnesota, and Wisconsin. The southern penetration of low-index counties in Michigan, Minnesota, and Wisconsin is substantial.

MAP VI: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE NORTH CENTRAL REGION INDEX, 1959



3. 1964

In 1964, the north-central region farm operator level-of-living index was 130 compared with 122 for the United States. The number of midcontinent region counties below the north-central average increased to 43.1 percent in 1964 from the 40.6 percent figure of 1959. Seven of the 15 states in the midcontinent region experienced increases in the number of low-index counties between 1959 and 1964. Two states, Minnesota and Nebraska, had no change, and the remaining six states showed an improvement.

The detailed midcontinent region situation for 1964 is shown in table 10. Michigan, with 91.6 percent of its counties below the north-central region index, replaced Missouri as the state with the highest percentage of below average counties. Once again only one state, Wyoming, had fewer than 10 percent of its counties below the north-central average index. Six states had over 40 percent of their counties below the north-central region index. Minnesota ranked fifth, with 47.1 percent of its counties below the 130 level.

Map VII shows that the majority of the below average, farm operator living index counties for the midcontinent region were located in the eight easternmost states in 1964. Of these eight, Michigan and Missouri were almost entirely below the north-central region average. Most of the upper and central portions of Minnesota and Wisconsin were below average, as were southern Illinois, southern Indiana, and southern and eastern Ohio. The southern two tiers of counties in Iowa were mostly below average.

In the seven western states of the midcontinent area, the largest concentrations of counties below the 1964 north-central region farm operator level-of-living index were in southern Colorado and eastern Kansas. Northwestern Montana had a cluster of below average counties, but the pattern

Table 10. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the north-central region index, 1964.

State	Total number of counties	Number below N.C.R. index (130)	Percentage below N.C.R. index
1. Michigan	83	76	91.6
2. Missouri	114	103	90.4
3. Wisconsin	71	49	69.0
4. Ohio	88	49	55.7
5. Minnesota	87	41	47.1
6. North Dakota	53	23	43.4
7. Kansas	105	41	39.0
8. Indiana	92	34	37.0
9. South Dakota	67	20	29.9
10. Illinois	102	26	25.5
11. Colorado	63	15	23.8
12. Iowa	99	19	19.2
13. Nebraska	93	14	15.1
14. Montana	56	6	10.7
15. Wyoming	23	0	0.0
Total	1,196	516	43.1

was one of scattered groupings of below par counties in North and South Dakota and Nebraska. Wyoming had no counties below the north-central average.

4. Change 1950-64

The midcontinent region experienced a slight improvement in the level of farm operator living between 1950 and 1964 when it is compared with the north-central region index. The situation improved between 1950 and 1959, but regressed a bit between 1959 and 1964. Nevertheless, a slight net gain was achieved relative to the north-central index. In 1964, the 15 states had 3.7 percent fewer counties below the north-central region figure than in 1950 (Table 11). During this period, the situation worsened relative to the north-central standard in only five of the 15 states. The sharpest

MAP VII: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE NORTH CENTRAL REGION INDEX, 1964

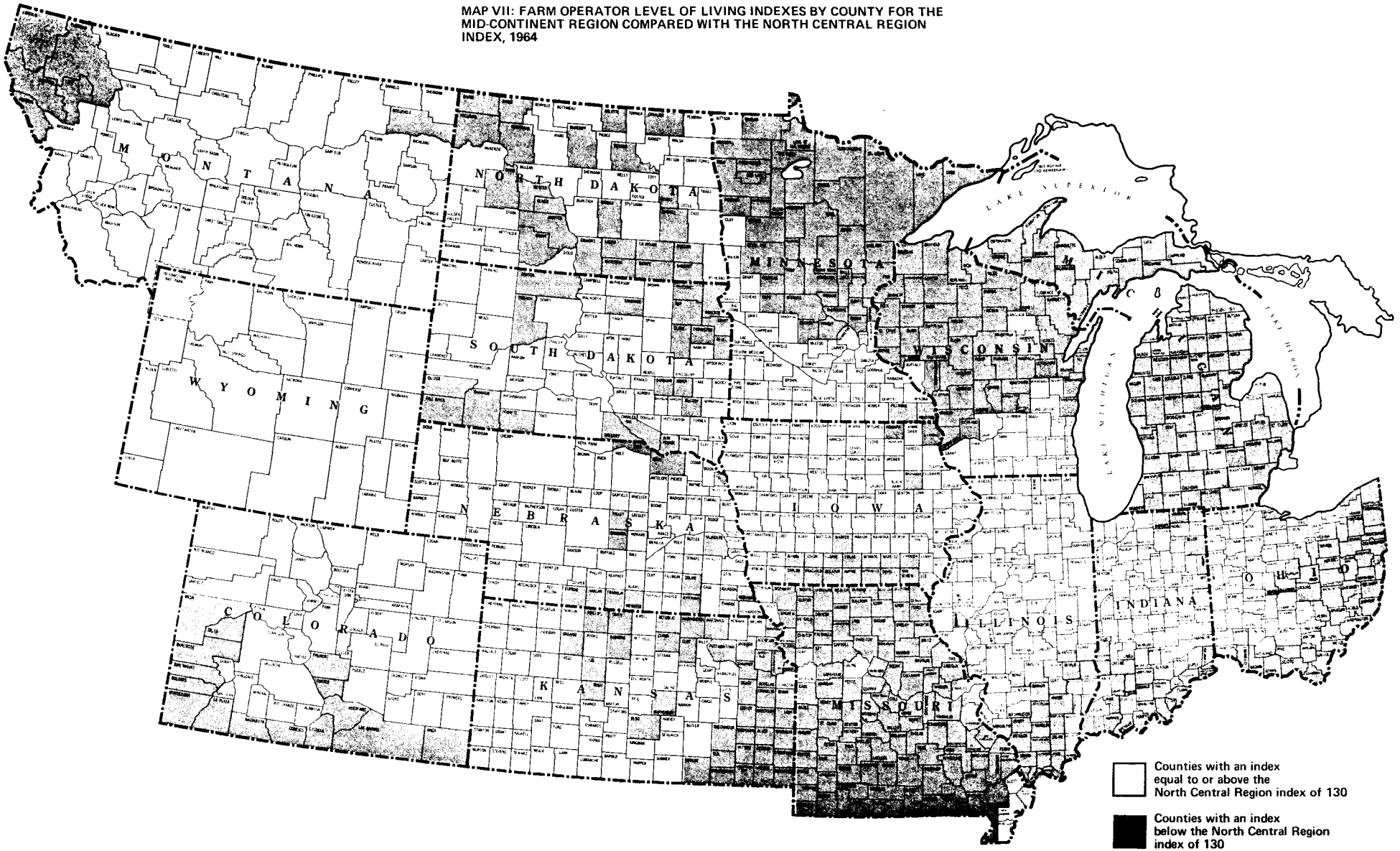


Table 11. Ranking of midcontinent region states according to the percentage of counties below the north-central region farm operator level-of-living indexes 1950, 1959, and 1964, and by net percentage change of indexes, 1950-64.

Ranking of states, 1950	Percentage of counties below N.C.R. index, 1950	Ranking of states, 1959	Percentage of counties below N.C.R. index, 1959	Ranking of states, 1964	Percentage of counties below N.C.R. index, 1964	Ranking of states on basis of net percentage change, 1950-64	Net percentage change 1950-64
1. Missouri	94.7	1. Missouri	91.2	1. Michigan	91.6	1. Michigan	+19.3
2. N. Dakota	77.4	2. Michigan	75.9	2. Missouri	90.4	2. Wisconsin	+16.9
3. Michigan	72.3	3. Wisconsin	59.2	3. Wisconsin	69.0	3. Iowa	+13.1
4. Montana	71.4	4. N. Dakota	47.2	4. Ohio	55.7	4. Minnesota	+ 9.2
5. Wisconsin	52.1	5. Minnesota	47.1	5. Minnesota	47.1	5. Kansas	+ 7.6
6. S. Dakota	50.7	6. Ohio	42.0	6. N. Dakota	43.4	6. Indiana	- 2.1
7. Wyoming	47.8	7. S. Dakota	41.8	7. Kansas	39.0	7. Missouri	- 4.3
8. Colorado	46.0	8. Indiana	35.9	8. Indiana	37.0	8. Illinois	- 7.8
9. Indiana	39.1	9. Illinois	29.4	9. S. Dakota	29.9	9. Nebraska	-10.7
10. Ohio	38.6	10. Kansas	28.6	10. Illinois	25.5	10. Ohio	-18.1
11. Minnesota	37.9	11. Colorado	20.6	11. Colorado	23.8	11. S. Dakota	-20.8
12. Illinois	33.3	12. Montana	17.9	12. Iowa	19.2	12. Colorado	-22.2
13. Kansas	31.4	13. Nebraska	15.1	13. Nebraska	15.1	13. N. Dakota	-34.0
14. Nebraska	25.8	14. Iowa	13.1	14. Montana	10.7	14. Wyoming	-47.8
15. Iowa	6.1	15. Wyoming	8.7	15. Wyoming	0.0	15. Montana	-60.1
Total	46.8		40.6		43.1		- 3.7

increase in below average counties was the 19.3 percent incurred by Michigan. In contrast, 10 states showed a decrease in the number of low-index counties between 1950 and 1964. The greatest improvement, when counties were compared to the north-central index, occurred in the western states of South Dakota, Colorado, North Dakota, Wyoming, and Montana.

The rank of the various states switched substantially between 1950 and 1959, and again between 1959 and 1964. The greatest change, however, occurred between 1950 and 1959. For example, there was a dramatic decrease from 48 to 9 in the percentage of Wyoming counties having index values below the north-central region average. This change moved Wyoming from 7th to 15th among the 15 midcontinent region states arranged from highest to lowest on the basis of percentages of counties having indexes below the north-central region average. Ohio, in contrast, experienced an increase in the percentage of below average counties that switched it from tenth place in 1950 to sixth place in 1959.

D. By County, Related to the Minnesota Average

In this section, each county index in the midcontinent region is related to the farm operator level-of-living index for Minnesota for each of the study years, 1950, 1959, and 1964. The point of reference throughout is the Minnesota index. This allows one to see how the rest of the 15-state area compares with the Minnesota average in each of the years. Moreover, it allows one to see how Minnesota counties rate in relation to the larger region.

Throughout the 1950-64 period, the Minnesota farm operator level-of-living index is above the U.S. average, but its margin of advantage has decreased through time. For example, the difference between the Minnesota and U.S. indexes was 20 points in 1950 (79 to 59), 13 points in 1959 (113 to 100), and six points

in 1964 (128 to 122). When a comparison is made with the north-central region index, the situation is different. Here the Minnesota index led the north-central index by three points in 1950 (79 to 76), but trailed by one point in 1959 (113 to 114) and by two points in 1964 (128 to 130).

1. 1950

In this year, 53.8 percent of the midcontinent region counties had farm operator level-of-living indexes below the Minnesota average of 79. This was 644 of the 1,196 counties in the area — the highest total under any of the situations considered in this study. All of the states in the region, with the exception of Iowa, had over 30 percent of their counties below the Minnesota index (table 12). Eight of the 15 states had over 50 percent of their counties

Table 12. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the Minnesota index, 1950

State	Total number of counties	Number below Minnesota index (79)	Percentage below Minnesota index
1. Missouri	114	110	96.5
2. North Dakota	53	45	84.9
3. Michigan	83	67	80.7
4. Wyoming	23	18	78.3
5. Montana	56	41	73.2
6. South Dakota	67	47	70.1
7. Wisconsin	71	39	54.9
8. Colorado	63	32	50.8
9. Ohio	88	43	48.9
10. Minnesota	87	41	47.1
11. Indiana	92	41	44.6
12. Illinois	102	39	38.2
13. Kansas	105	40	38.1
14. Nebraska	93	31	33.3
15. Iowa	99	10	10.1
Total	1,196	644	53.8

below the Minnesota index (table 12). Eight of the 15 states had over 50 percent of their counties below, while six states had an excess of 70 percent of their counties under the Minnesota level. All but four (96.5 percent) of Missouri's counties were below the Minnesota index. A great deal of variation existed not only within the 15-state area, but also within Minnesota inasmuch as 41 of her 87 counties were below the state average.

The geographical distribution of midcontinent region counties below the Minnesota index for 1950 is shown in map VIII. In that year, two huge belts and two smaller blocks of counties in the 15-states were below the Minnesota index. The first belt runs from Montana and Wyoming across North and South Dakota into the northern parts of Minnesota, Wisconsin, and Michigan. This belt is broken only by a few North Dakota counties in the Red River Valley. One projection from this belt extends into north central Nebraska. The second belt begins in eastern Kansas and extends across Missouri and extremely southern Iowa into the southern portions of Illinois and Indiana and ends in southern and eastern Ohio. Turning now to the smaller blocks of counties, one finds a sizable area of below average counties in northwestern Montana. The second block is located in Colorado. In addition, one small collection of low-index counties is in southern Nebraska and northern Kansas. Thus, in 1950 with reference to the Minnesota index, only the most productive corn, soybean, sugar beet, wheat, and range area tended to be above average.

2. 1959

The percentage of midcontinent region counties with farm operator level-of-living indexes below the Minnesota index of 113 was 38.0 in 1959 (table 13). This was a net percentage decrease of 15.8 percent in the number of below average

MAP VIII: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE MINNESOTA INDEX, 1950

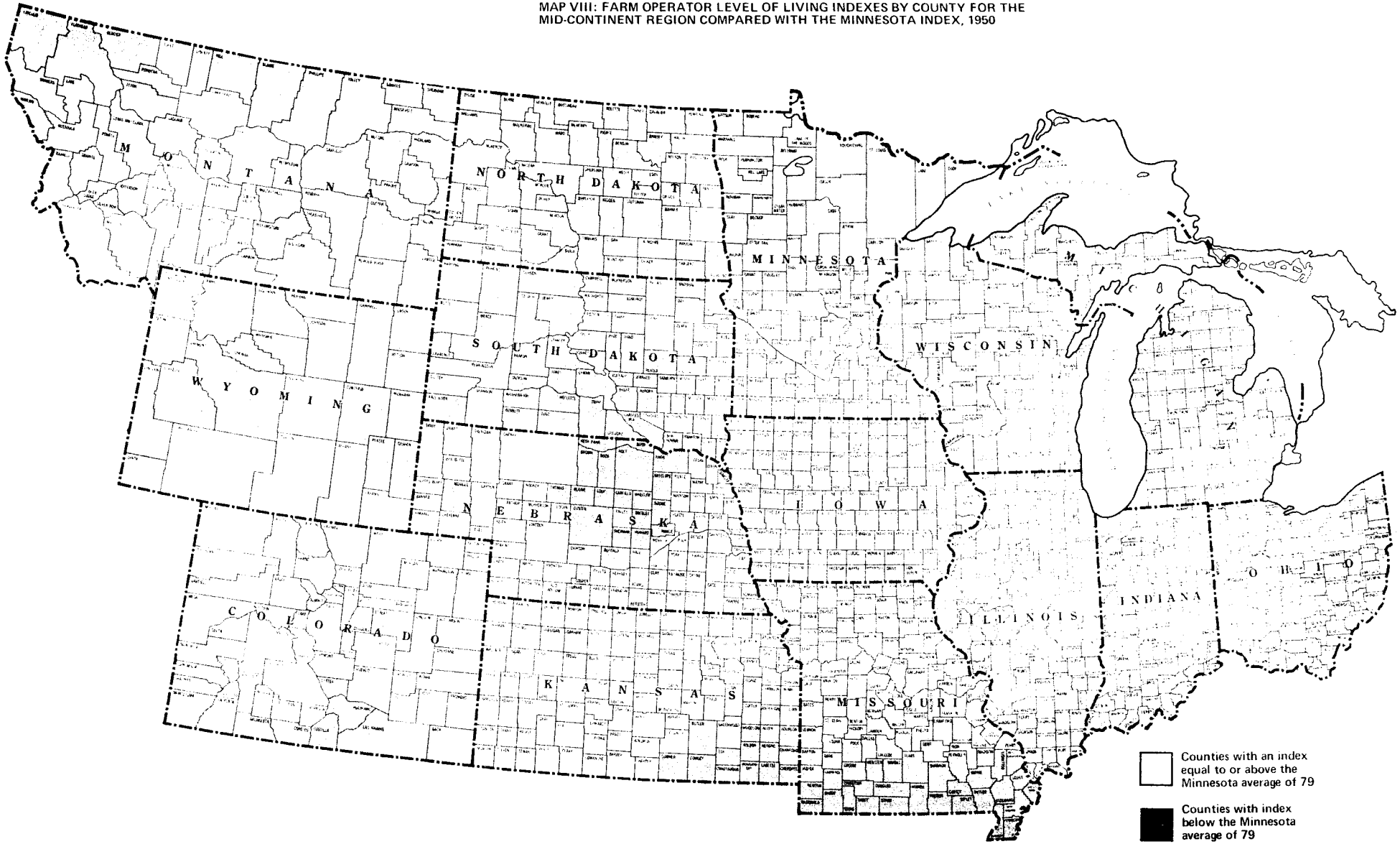


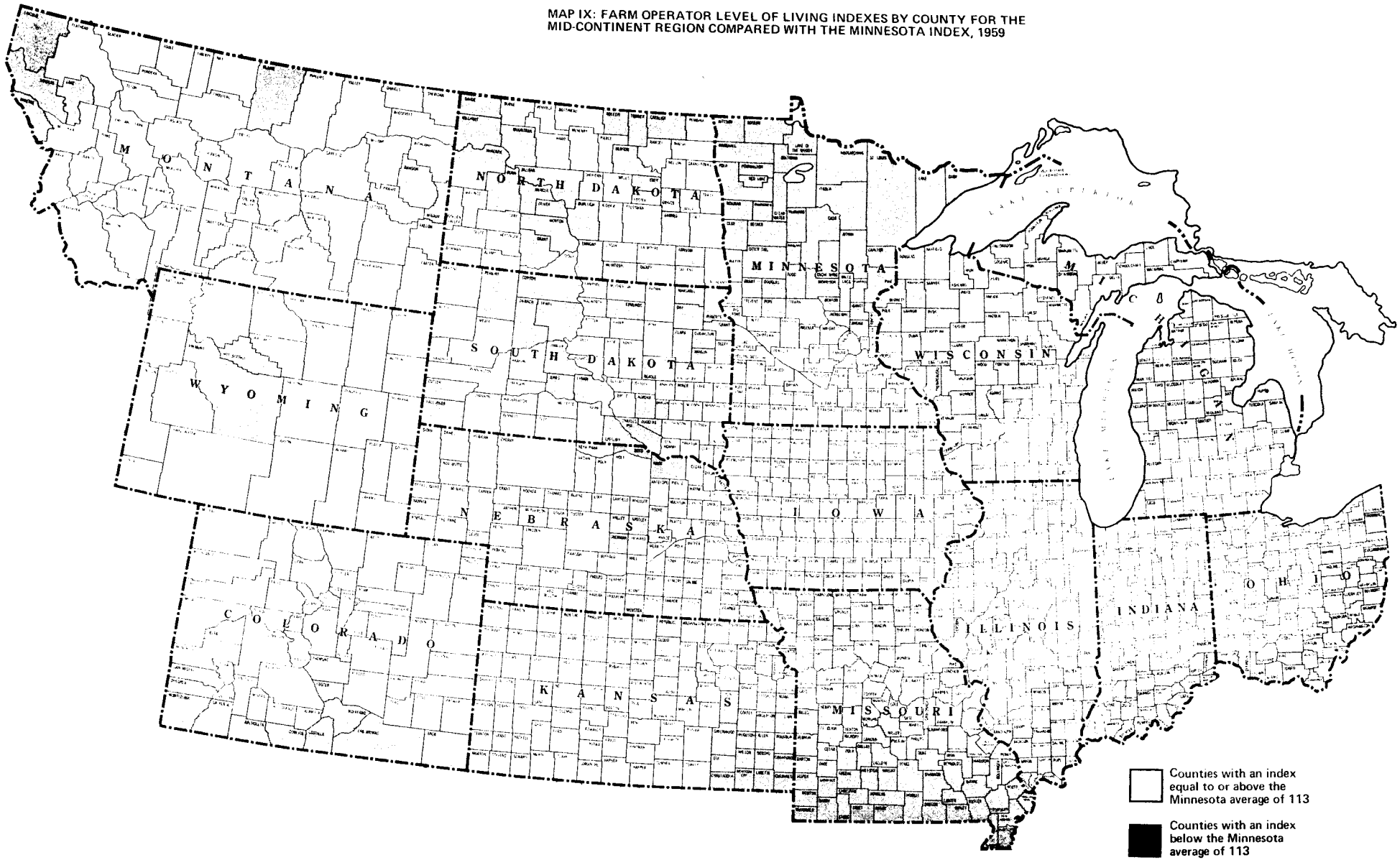
Table 13. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the Minnesota index, 1959

State	Total number of counties	Number below Minnesota index (113)	Percentage below Minnesota index
1. Missouri	114	100	87.7
2. Michigan	83	56	67.5
3. Wisconsin	71	41	57.7
4. Minnesota	87	41	47.1
5. North Dakota	53	22	41.5
6. Ohio	88	36	40.9
7. South Dakota	67	26	38.8
8. Indiana	92	30	32.6
9. Kansas	105	30	28.6
10. Illinois	102	27	26.5
11. Colorado	63	13	20.6
12. Montana	56	8	14.3
13. Nebraska	93	12	12.9
14. Iowa	99	11	11.1
15. Wyoming	23	2	8.3
Total	1,196	455	38.0

counties between 1950 and 1959. It represented a decline of 189 in the number of below average counties between these two years. In this period, the number of below average index counties declined in 13 of the 15 states. It remained the same in Minnesota and increased only in Wisconsin. Still, the below average counties exceeded 30 percent of the respective state totals in eight of 15 states in 1959. Missouri led all states with 87.7 percent of its counties below the Minnesota average, while Wyoming was last with 8.3 percent.

The geographical distribution of the below average index counties is shown in Map IX. The most dramatic change between 1950 and 1959 among counties in reference to the Minnesota index occurred in the seven western states of the mid-continent region - Colorado, Kansas, North and South Dakota, Montana, Nebraska, and Wyoming. For instance, 24.6 percent of the counties in these states were below the Minnesota index in 1959, compared with 55.2 percent in 1950. This

MAP IX: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE MINNESOTA INDEX, 1959



represented a net percentage decrease of 30.6 percent. In contrast, 46.5 percent of the counties in the eight eastern states of the midcontinent region (Illinois, Iowa, Indiana, Michigan, Minnesota, Missouri, Ohio, and Wisconsin) were below the Minnesota index in 1959. In 1950, this figure stood at 53.0 percent, making the net change only -6.5 percent during the interval. Map IX reflects this change. The huge northern belt of below average counties has been reduced to only scattered blocks of counties in North and South Dakota, Montana, and Wyoming, but it remained largely intact in the northern portions of Minnesota, Wisconsin, and Michigan.

The southern belt has been reduced somewhat, but still extends from eastern Kansas, across Missouri, southern Iowa, Illinois, and Indiana, and into southern and eastern Ohio. The sizable blocks of below index counties located in northwestern Montana and in Colorado in 1950 were greatly reduced by 1959.

3. 1964

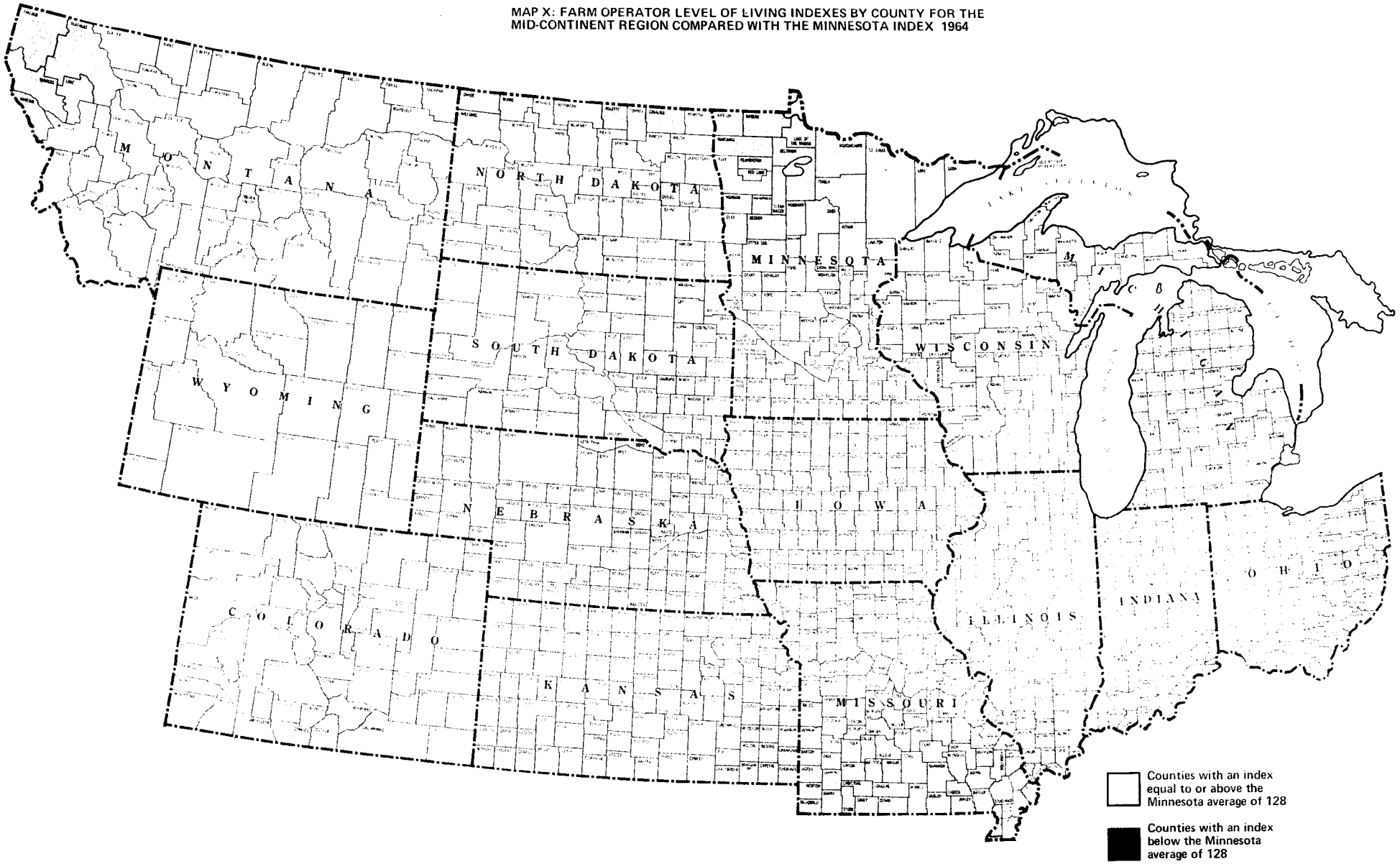
The percentage of midcontinent region counties with farm operator level-of-living indexes below the Minnesota index of 128 in 1964 was 37.9 (table 14). This represented a net percentage decline of only 0.1 percent between 1959 and 1964, or of only two counties overall (from 455 to 453). The number of below average counties decreased in eight of the 15 states during the 1959-64 span. It remained the same in Colorado and increased in the remaining six states. In terms of ranking, Michigan replaced Missouri as the state with the highest percentage of below average counties in 1964. Ten of the states had 20 percent or more of their counties below the Minnesota index. Only Wyoming had all of its counties above the 128 mark.

Table 14. Number and percentage of midcontinent region counties with farm operator level-of-living indexes below the Minnesota index, 1964

State	Total number of counties	Number below Minnesota index (128)	Percentage below Minnesota index
1. Michigan	83	73	88.0
2. Missouri	114	99	86.8
3. Wisconsin	71	44	62.0
4. Ohio	88	41	46.6
5. Minnesota	87	37	42.5
6. Indiana	92	31	33.7
7. Kansas	105	35	33.3
8. South Dakota	67	17	25.4
9. Illinois	102	24	23.5
10. Colorado	63	13	20.6
11. North Dakota	53	10	18.9
12. Iowa	99	16	16.2
13. Montana	56	6	10.7
14. Nebraska	93	7	7.5
15. Wyoming	23	0	0.0
Total	1,196	453	37.9

The geographical distribution of midcontinent region counties having indexes below the Minnesota average in 1964 is shown in map X. The two primary belts of low-index counties discussed earlier are again in evidence. The former runs across northern Minnesota and Wisconsin and covers almost the entire state of Michigan. The latter originates in eastern Kansas, extends across southern Iowa, Illinois, and Indiana, and ends in southern and eastern Ohio. Once again the greatest change between 1959 and 1964 occurred in the western part of the region. The percentage of low-index counties in the seven westernmost states stood at 19.1 percent in 1964, as opposed to 24.6 percent in 1959. This was a net decline of 5.5 percent. Only 88 of the 460 counties in these states were below the Minnesota average in 1964. In contrast, 49.6 percent of the counties in the eight easternmost states were below the Minnesota figure in 1964. This was an increase of 3.1 percent from the 46.5

MAP X: FARM OPERATOR LEVEL OF LIVING INDEXES BY COUNTY FOR THE MID-CONTINENT REGION COMPARED WITH THE MINNESOTA INDEX 1964



percent level of 1959. The eastern group had 365 of its 736 counties below the Minnesota index of 128 in 1964.

4. Change from 1950 to 1964

The 15-state midcontinent region showed considerable improvement in the farm operator level-of-living indexes between 1950 and 1964 when compared to the Minnesota index (table 15). In 1950, the area had 53.8 percent of its counties with indexes below the Minnesota average, compared with 37.9 percent in 1964. This represents a 15.9 percent net decrease between the two years. Twelve of the 15 states experienced net decreases in the number of low-index counties during the 1950-64 span. The greatest decline was 78.3 percent in Wyoming. Three of the states had increases in the net number of below average counties during the same period, with the largest increase being 7.3 percent in Michigan.

Between 1950, 1959, and 1964, the ranking of individual states probably changed more than when the 15 states were compared with either the United States average index or the north-central region index. The states with the highest percentage of below average counties were Missouri in 1950 and 1959 and Michigan in 1964. Iowa had the lowest percentage in 1950 and Wyoming in 1959 and 1964.

E. Range of County Indexes Within States

The range of county farm operator level-of-living indexes within each of the midcontinent region states is considered briefly. Counties with the lowest and highest indexes for each of 15 states for the years 1950, 1959, and 1964 are listed in tables 16 through 18. When more than one county is listed as being high or

Table 15. Ranking of midcontinent region states according to the percentage of counties below Minnesota farm operator level-of-living indexes, 1950, 1959, and 1964, and by net percentage change of indexes, 1950-64.

Ranking of states, 1950	Percentage of counties below Minn. index, 1950	Ranking of states, 1959	Percentage of counties below Minn. index, 1959	Ranking of states, 1964	Percentage of counties below Minn. index, 1964	Ranking of states on basis of net percentage change, 1950-64	Net percentage change, 1950-64
1. Missouri	96.5	1. Missouri	87.7	1. Michigan	88.0	1. Michigan	+ 7.3
2. N. Dakota	84.9	2. Michigan	67.5	2. Missouri	86.8	2. Wisconsin	+ 7.1
3. Michigan	80.7	3. Wisconsin	57.7	3. Wisconsin	62.0	3. Iowa	+ 6.1
4. Wyoming	78.3	4. Minnesota	47.1	4. Ohio	46.6	4. Ohio	- 2.3
5. Montana	73.2	5. N. Dakota	41.5	5. Minnesota	42.5	5. Minnesota	- 4.6
6. S. Dakota	70.1	6. Ohio	40.9	6. Indiana	33.7	6. Kansas	- 4.8
7. Wisconsin	54.9	7. S. Dakota	38.8	7. Kansas	33.3	7. Missouri	- 9.7
8. Colorado	50.8	8. Indiana	32.6	8. S. Dakota	25.4	8. Indiana	-10.9
9. Ohio	48.9	9. Kansas	28.6	9. Illinois	23.5	9. Illinois	-14.7
10. Minnesota	47.1	10. Illinois	26.5	10. Colorado	20.6	10. Nebraska	-25.8
11. Indiana	44.6	11. Colorado	20.6	11. N. Dakota	18.9	11. Colorado	-30.2
12. Illinois	38.2	12. Montana	14.3	12. Iowa	16.2	12. S. Dakota	-44.7
13. Kansas	38.1	13. Nebraska	12.9	13. Montana	10.7	13. Montana	-62.5
14. Nebraska	33.3	14. Iowa	11.1	14. Nebraska	7.5	14. N. Dakota	-66.0
15. Iowa	10.1	15. Wyoming	8.3	15. Wyoming	0.0	15. Wyoming	-78.3
Total	53.8		38.0		37.9		-15.9

Table 16. Counties with the lowest and highest farm operator level-of-living indexes for each state in the midcontinent region, 1950.

State	State index	Lowest county (or counties)	County index	Highest county (or counties)	County index	County range
1. Colorado	78	Las Animas	53	Alamosa Rio Grande Saquache	103	50
2. Illinois	85	Hardin Johnson Pope	37	Kendall	120	83
3. Indiana	77	Crawford Scott	37	Benton Carroll	108	71
4. Iowa	91	Monroe	66	Benton Cherokee	107	41
5. Kansas	80	Cherokee	57	Morton Stanton	106	49
6. Michigan	68	Otsego	44	Washtenaw	91	47
7. Minnesota	79	Cook Koochiching Lake	48	Martin	104	56
8. Missouri	55	Ripley	19	Atchison	89	70
9. Montana	71	Lincoln Mineral Sanders	43	Beaverhead Madison	98	55
10. Nebraska	82	Sherman	64	Cuming	104	40
11. North Dakota	71	Kidder	52	Cass	91	39
12. Ohio	75	Lawrence Vinton	39	Fayette	97	58
13. South Dakota	76	Bennett Corson Shannon Ziebach	53	Union	96	43
14. Wisconsin	77	Ashland	47	Waukesha	104	57
15. Wyoming	74	Fremont Hot Springs	59	Laramie	84	25

Table 17. Counties with the lowest and highest farm operator level-of-living indexes for each state in the midcontinent region, 1959.

State	State index	Lowest County (or counties)	County index	Highest County (or counties)	County index	County range
1. Colorado	124	Las Animas	93	Weld	150	57
2. Illinois	125	Hardin Pope	67	De Kalb	160	93
3. Indiana	117	Crawford	70	Benton	152	82
4. Iowa	128	Monroe	95	Grundy	148	53
5. Kansas	117	Elk	89	Grant Haskell	158	69
6. Michigan	106	Roscommon	55	Kalamazoo	125	70
7. Minnesota	113	Clearwater	84	Martin	143	59
8. Missouri	93	Carter Reynolds	48	Atchison	139	91
9. Montana	126	Lincolon Mineral Sanders	93	Liberty Toole	164	71
10. Nebraska	123	Sherman	97	Cherry Grant Hooker	167	70
11. North Dakota	113	Towner	94	Cass	133	39
12. Ohio	112	Holmes	64	Franklin	139	75
13. South Dakota	113	Douglas	91	Walworth	130	39
14. Wisconsin	111	Marinette	91	Dane Walworth	134	43
15. Wyoming	126	Fremont Hot Springs	111	Albany Carbon Natrona Sweetwater	135	24

Table 18. Counties with the lowest and highest farm operator level-of-living indexes for each state in the midcontinent region, 1964.

State	State index	Lowest county (or counties)	County index	Highest county (or counties)	County index	County range
1. Colorado	143	Las Animas	118	Weld	170	52
2. Illinois	141	Hardin Pope Johnson	94	Piatt	174	80
3. Indiana	130	Lagrange	86	Benton	168	82
4. Iowa	140	Monroe	107	Cherokee Sac	158	51
5. Kansas	135	Elk	102	Grant Haskell	175	73
6. Michigan	120	Alger	100	Lenawee Washtenaw	135	35
7. Minnesota	128	Beltrami Cass Lake of the Woods	105	Fairbault	150	45
8. Missouri	112	Ripley	72	Atchison	150	78
9. Montana	144	Lake	116	Beaverhead Madison	181	65
10. Nebraska	142	Pawnee	115	Cherry Grant Hooker	198	83
11. North Dakota	132	Burke Griggs	123	Case	150	27
12. Ohio	124	Holmes	70	Fayette	158	88
13. South Dakota	133	Roberts	117	Hughes Potter Sully	147	30
14. Wisconsin	123	Sawyer	99	Walworth	143	44
15. Wyoming	150	Fremont Hot Springs	136	Albany Carbon Natrona Sweetwater	163	27

low for a state, a legitimate tie occurred between the counties or the counties listed were considered one unit because counties with fewer than 500 farms in 1959 were combined with other counties in computing index values. Space does not permit a detailed analysis of the tables. Much relevant information can be gleaned directly from them.

Perhaps both more interesting and relevant is the ranking of the mid-continent region states based on the range of county farm operator level-of-living indexes. This is shown in table 19 which also ranks the states according to the 1950-64 net change in the range of the county indexes. The ranks of states based on the range of county indexes shows the greatest difference in Illinois in 1950 and 1959, and in Ohio in 1964. Wyoming had the smallest range in county indexes in each of the years. Of the 15 states, Minnesota ranked sixth in 1950, ninth in 1959, and tenth in 1964.

The range of the couny indexes within the midcontinent region generally increased during the 1950-64 period. Table 19 shows that nine of the 15 states experienced a net increase in the range of county indexes between 1950 and 1964 with the greatest net variation change coming in Nebraska (+43 points). Six states had a decrease in the range of county indexes during 1950-64. South Dakota and Wisconsin tied for the greatest net decrease (-13).

VI. Farm Operator Level-of-Living Indexes for Minnesota Counties

In discussing the midcontinent region in earlier sections, considerable information dealing with Minnesota was included of necessity. Nevertheless Minnesota generally was given no preferential treatment over the remaining 14 states. This leaves the Minnesota resident without detailed information about his own county. In an effort to remedy this situation, the farm operator level-of-living

Table 19. Midcontinent region states ranked by range of county farm operator level-of-living indexes, 1950, 1959, and 1964, and by net percentage change in county range of indexes, 1950-64.

1950		1959		1964		1950-64	
Rank of states	Range of county indexes	Rank of states	Range of county indexes	Rank of states	Range of county indexes	Rank of states	Net change in range of county indexes
1. Illinois	83	1. Illinois	93	1. Ohio	88	1. Nebraska	+43
2. Indiana	71	2. Missouri	91	2. Nebraska	83	2. Ohio	+30
3. Missouri	70	3. Indiana	82	3. Indiana	82	3. Kansas	+24
4. Ohio	58	4. Ohio	75	4. Illinois	80	4. Indiana	+11
5. Wisconsin	57	5. Montana	71	5. Missouri	78	5. Iowa	+10
6. Minnesota	56	6. Michigan	70	6. Kansas	73	6. Montana	+10
7. Montana	55	7. Nebraska	70	7. Montana	65	7. Missouri	+ 8
8. Colorado	50	8. Kansas	69	8. Colorado	52	8. Colorado	+ 2
9. Kansas	49	9. Minnesota	59	9. Iowa	51	9. Wyoming	+ 2
10. Michigan	47	10. Colorado	57	10. Minnesota	45	10. Illinois	- 2
11. S. Dakota	43	11. Iowa	53	11. Wisconsin	44	11. Minnesota	-11
12. Iowa	41	12. Wisconsin	43	12. Michigan	35	12. Michigan	-12
13. Nebraska	40	13. N. Dakota	39	13. S. Dakota	30	13. N. Dakota	-12
14. N. Dakota	39	14. S. Dakota	39	14. N. Dakota	27	14. S. Dakota	-13
15. Wyoming	25	15. Wyoming	24	15. Wyoming	27	15. Wisconsin	-13

indexes in 1950, 1959, and 1964 for each Minnesota county are presented in Table 20. Individual countries may be read from this table, but it may be wise to reiterate the range for each year. In 1950, the range was from a low of 48 in Cook, Koochiching, and Lake Counties to a high of 104 in Martin County. Clearwater County was low with an index of 84 in 1959, while Martin County was again high with a value of 143. In 1964, the low was 105 in Beltrami, Cass, and Lake of the Woods Counties, while Fairbault County led with 150.

The largest increase in the county farm operator level-of-living index in Minnesota during the 1950-59 period was 89.6 in Cook, Koochiching, and Lake Counties. The smallest gain was 25.4 percent in Isanti County. The largest gain for 1959-64 was 41.2 percent in Mahnomen County, while the smallest was 3.1 percent in Mower County. For the entire 1950-64 period, the largest increase was the 133.3 percent in Cook, Koochiching, and Lake Counties, but the smallest change was 42.3 percent in Chippewa County.

VII. Summary and Conclusions

This report examines the level-of-living of farm operators in the 15-state midcontinent region which is comprised of Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin, and Wyoming. The measure used was the U.S. Department of Agriculture's farm operator level-of-living index which includes the following variables: (1) average value of farm products sold per farm, (2) average value of land and buildings per farm, (3) percentage of farms with telephones, (4) percentage of farms with home freezers, and (5) percentage of farms with automobiles. The primary unit of analysis is the county, and the years considered are 1950, 1959, and 1964.

Table 20. Farm operator level-of-living indexes in 1950, 1959 and 1964 for Minnesota counties and percentage increases 1950-64.

State and county	Level of living index			Percentage increase		
	1950	1959	1964	1950-59	1959-64	1950-64
Minnesota	79	113	128	43.0	13.3	62.0
Aitkin	62	101	116	62.9	14.9	87.1
Anoka	70	109	118	55.7	8.3	68.6
Becker	61	85	109	39.3	28.2	78.7
Beltrami*	59	88	105	49.2	19.3	78.0
Benton	70	107	122	52.9	14.0	74.3
Big Stone	79	120	132	51.9	10.0	67.1
Blue Earth	89	132	142	48.3	7.6	59.6
Brown	97	129	142	33.0	10.0	46.4
Carlton	63	101	112	60.3	10.9	77.8
Carver	94	126	134	34.0	6.3	42.6
Cass	58	92	105	58.6	14.1	81.0
Chippewa	97	124	138	27.8	11.3	42.3
Chisago	75	106	116	41.3	9.4	54.7
Clay	76	112	134	47.4	19.6	76.3
Clearwater	55	84	107	52.7	27.4	94.5
Cook+	48	91	112	89.6	23.1	133.3
Cottonwood	86	133	143	54.7	7.5	66.3
Crow Wing	62	106	118	71.0	11.3	90.3
Dakota‡	90	126	140	40.0	11.1	55.6
Dodge	81	120	137	48.1	14.2	69.1
Douglas	77	103	118	33.8	14.6	53.2
Fairbault	99	132	150	33.3	13.6	51.5
Fillmore	80	119	129	48.8	8.4	61.3
Freeborn	87	128	139	47.1	8.6	59.8
Goodhue	81	120	131	48.1	9.2	61.7
Grant	75	105	133	40.0	26.7	77.3
Hennepin	87	124	133	42.5	7.3	52.9
Houston	86	114	125	32.6	9.6	45.3
Hubbard	59	94	110	59.3	17.0	86.4
Isanti	71	89	115	25.4	29.2	62.0
Itasca	64	104	118	62.5	13.5	84.4
Jackson	96	132	149	37.5	12.9	55.2
Kanabec	66	97	119	47.0	22.7	80.3
Kandiohi	82	115	130	40.2	13.0	58.5
Kittson	70	104	130	48.6	25.0	85.7
Koochiching	+	+	+			
LacquiParle	88	118	132	34.1	11.9	50.0
Lake	+	+	+			
Lake of the Woods	*	*	*			
Le Sour	89	117	131	31.5	12.0	47.2
Lincoln	80	112	131	40.0	17.0	63.8
Lyon	93	126	142	35.5	12.7	52.7

Table 20	1950	1959	1964	1950-59	1959-64	1950-64
McLeod	93	124	134	33.3	8.1	44.1
Mahnomen	54	85	120	57.4	41.2	122.2
Marshall	69	96	116	39.1	20.8	68.1
Martin	104	143	149	37.5	4.2	43.3
Meeker	85	110	125	29.4	13.6	47.1
Mille Lacs	70	108	117	54.3	8.3	67.1
Morrison	66	103	120	56.1	16.5	81.8
Mower	85	128	132	50.6	3.1	55.3
Murray	89	124	139	39.3	12.1	56.2
Nicolett	97	131	144	35.1	9.9	48.5
Nobles	92	129	142	40.2	10.1	54.3
Norman	77	97	125	26.0	28.9	62.3
Olmsted	83	122	131	47.0	7.4	57.8
Ottertail	72	101	120	40.3	18.8	67.0
Pennington	68	101	120	48.5	18.8	76.5
Pine	66	98	116	48.5	18.4	75.8
Pipestone	87	130	143	49.4	10.0	64.4
Polk	77	107	129	39.0	20.6	67.5
Pope	83	110	127	32.5	15.5	53.0
Ramsey	‡	‡	‡			
Red Lake	64	102	114	59.4	11.8	78.1
Redwood	85	125	137	47.1	9.6	61.2
Renville	95	129	143	35.8	10.9	50.5
Rice	83	126	132	51.8	4.8	59.0
Rock	95	131	146	37.9	11.5	53.7
Roseau	63	90	106	42.9	17.8	68.3
St. Louis	60	100	113	67.0	13.0	88.3
Scott	82	118	133	43.9	12.7	62.2
Sherburn	62	104	119	67.7	14.4	91.9
Sibley	96	126	139	31.3	10.3	44.8
Stearns	77	115	129	49.4	12.2	67.5
Steele	90	130	136	44.4	4.6	51.1
Stevens	84	123	142	46.4	15.4	69.0
Swift	78	116	131	48.7	12.9	67.9
Todd	75	105	119	40.0	13.3	58.7
Traverse	80	117	137	46.3	17.1	71.3
Wabasha	85	127	135	49.4	6.3	58.8
Wadena	65	94	112	44.6	19.1	72.3
Waseca	90	127	139	41.1	9.4	54.4
Washington	82	122	137	48.8	12.3	67.1
Watonwan	94	128	141	36.2	10.2	50.0
Wilkin	76	117	140	53.9	19.7	84.2
Winona	88	125	130	42.0	4.0	47.7
Wright	78	110	125	41.0	13.6	60.3
Yellow Medicine	81	118	135	45.7	14.4	66.7

Indexes computed for the following combinations of counties

* Beltrami and Lake of the Woods.
+ Cook, Koochicking, and Lake.
‡ Dakota and Ramsey.

The farm operator level-of-living index was assessed as a measure of economic well-being. There are limitations but most observers admit the usefulness of the index as a measure of well-being if users are cognizant of what it does and does not measure. It allows one to compare different areas across both time and space.

The main thrust of this study was to examine farm operator level-of-living indexes for counties in the 15-state midcontinent region and to relate them to the United States average, north-central average, and Minnesota average for each of the years 1950, 1959, and 1964. A background glimpse at the state level revealed Missouri as the lowest ranking state in the region and Iowa and Wyoming as the highest. Through time, the gaps in the farm operator level-of-living indexes among the 15-states have been decreasing.

The farm operator level-of-living indexes for the three areas in 1950, 1959 and 1964 were as follows:

	1950	1959	1964
United States	59	100	122
north-central region	76	114	130
Minnesota	79	113	128

Comparison with the national average allows one to assess the area relative to the nation. By relating to the north-central average, a look is possible into the internal situation of the region. Lastly, comparison with the Minnesota average allows an analysis of the 15-state area from a Minnesota viewpoint. It provides insight into how the state rates relative to the remainder of the Midwest.

When the 1,196 midcontinent region counties were compared with the U.S. north-central, and Minnesota indexes in each of the years, the following pattern emerged:

		Year	Midcontinent region counties with farm operator level-of-living indexes below those indexes of the areas indicated at left. Number	Percentage
I.	United States	1950	160	13.4
		1959	196	16.4
		1964	301	25.2
II.	north-central region	1950	560	46.8
		1959	485	40.6
		1964	516	43.1
III.	Minnesota	1950	644	53.8
		1959	455	38.0
		1964	453	37.9

When the 15-state area is related to the U.S. indexes, the number of below average counties increased a net of 11.8 percent between 1950 and 1964. This represented a general loss of position for the midcontinent region relative to the United States during this period.

As stated earlier, the use of the north-central region indexes as a standard constitutes essentially an internal evaluation of the indexes within the 15-state region. Between 1950 and 1964, the percentage of below average counties decreased a net of 3.7 percent when the midcontinent region is compared with the north-central average. This not only represents improvement but probably some lessening of internal diversity over time.

A comparison of the 15-state area with the Minnesota indexes yielded a net decline of 15.9 percent in the number of below average countries during 1950-64. This indicated a decline in Minnesota's position relative to the remainder of the region during this period.

Regarding the ranking of individual states, Missouri and Michigan usually led in the number of low-income counties. In contrast, Iowa and Wyoming typically had the fewest below average counties.

The geographical distribution of the low-index counties varied considerably under the different comparisons. The most changeable areas were the seven western states of the midcontinent region — Colorado, North and South Dakota, Kansas, Montana, Nebraska, and Wyoming. Comparisons with the north-central and Minnesota indexes yielded, in each case, two belts of below average counties. The first extended across northern Michigan, Wisconsin, Minnesota, and sometimes into the Dakotas and Montana as well. The second extended from eastern Kansas across Missouri, southern Iowa, southern Illinois, southern Indiana, and ended in southern and eastern Ohio.