NON-WHITE POPULATION TRENDS IN OKLAHOMA

POPULATION CENTERS, 1930

AND AFTER

By

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PREFACE

The purpose of this thesis is to test the influence of seven factors in explaining changes in the non-white population of Oklahoma population centers.

The writer wishes to express his sincere appreciation to the following people for their assistance in preparing this thesis: Dr. O. D. Duncan, Head, Department of Sociology and Rural Life and Dr. James D. Tarver, Professor of Rural Sociology for their guidance and technical advice; Mrs. Pat Simpson, Mrs. Alice Ramey, Mrs. Evelyn Hargrove, and Miss Pat Cundiff for helping in the gathering and calculating of the data; Mrs. Juanita Marshall in putting together and typing the final version.

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THE PROBLEM

I. Nature of the Study

The migration patterns of the non-white population of the nation have been the subject of extensive research as to the nature of these migrations and their effect upon those involved. The general opinion in the past has been that the greater part of these movements have been from the rural South to the urban North, but more recent studies have indicated that these general patterns are coming to an end and that new patterns of movements are occurring within the South.

In the light of these findings, several questions need to be answered. First, has such a change taken place? If so, to what extent? From what areas within the South? If it has taken place, has it been from the larger cities or from the rural non-farm towns? What is the intensity of this change, if it exists, in comparison to past shifts in the non-white population? What relationship, if any, exists between change and size of places, state economic areas, standard metropolitan statistical areas, hereafter designated as SMSA status, local governmental status, and soil association region?

To undertake a study of this magnitude would require resources and time that are not available to the author. Therefore, it has been decided that an examination of one state might be of sufficient value to justify the undertaking of such a study.

In the process of selecting a state for this study, one dominant factor had to be considered if the necessary data could be readily obtained. The needed data were available in a form usable for the state of Oklahoma. It was, therefore, on this basis that Oklahoma was selected for this study.

II. Objective of the Study

This study explains the variations in the percentage and numerical changes of the non-white population in the population centers of Oklahoma as revealed in the census decades of 1930-1940, 1940-1950, and 1950-1960.

It is the hypothesis of this study that these variations are the results of the linear function of seven factors.

The study chooses the following independent variables to account for the percentage and numerical changes in the non-white population of Oklahoma population centers. (1) Census decade. (2) Local governmental status. (3) Size of place at beginning of decade. (4) State Economic Area. (5) Soil Association regions. (6) Standard Metropolitan Statistical Area. (7) Percentage of population non-white in 1910 by counties.

III. Source of Data

The data used in this study have been drawn from the U. S. Census Volumes of Population Characteristics and Number of Inhabitants for 1930, 1940, 1950, and 1960.

IV. Method of the Study

In accomplishing the objective of this study, the following procedure was followed.

First, the number of population centers to be included in each censal decade was determined by including only those that appeared at both the beginning and end of the decade. This resulted in showing 506 population centers for 1930-40, 514 population centers for 1940-50, and 521 population centers for 1950-60, a total of 1,541 observations for the three decades.

Second, the numerical and percentage changes by censal decade of population centers for the total, white, and non-white population were computed.

Third, the population centers were classified as to local governmental status into the county seats and non-county seats. In the 1930-40 censal decade, one of the 77 county seats had less than 1,000 population and was unincorporated in 1930; therefore, this study shows 76 county seats for this decade and 230 observations for the three censal decades.

Fourth, the population centers were classified by size at the beginning of each decade into four groups (Table II).

Fifth, the population centers were assigned to one of the twelve geographic regions, employing the 1960 census definitions of state economic and standard metropolitan statistical areas. The first nine are non-standard metropolitan statistical areas (Figure 3, and Table XI).

Sixth, the population centers were assigned to the five soil associational regions (Figure 1).

Seventh, the population centers were assigned to the four black belts which were determined by the percentage of the population that was non-white in 1910 by counties (Figure 2).

Eighth, graphs were drawn for all possible two and three factor inter-actions to find those most likely to be significant. Those found to be significant are included in this study.

Ninth, averages (means) of the numerical and percentage population changes of population centers for the seven independent variables were cal-culated for the total, white, and non-white population by decades (Tables III-A, III-B, and III-C).

V. Hypotheses and Their Tests

The following five models were used to determine whether each of the seven independent variables and selected two and three factor interactions has any determinable influence upon the non-white population changes of Oklahoma population centers.

1. $Y_{iajpfdk} = \mu + A_i + C_a + P_j + R_p$
$$+ S_f + W_d + (AC)_{ia} + (CP)_{aj}$$
$$+ \epsilon_{iajpfdk},$$

2. $Y_{iamjpdk} = \mu + A_i + C_a + E_m + P_j$
$$+ R_p + W_d + (AC)_{ia} + (CP)_{aj}$$
$$+ \epsilon_{iajpfdk},$$

3. $Y_{iampk} = \mu + A_i + C_a + E_m + R_p$
$$+ (AC)_{ia} + (CR)_{ap} + (ACR)_{iap}$$
$$+ \epsilon_{iampk},$$

4. $Y_{iafk} = \mu + A_i + C_a + S_f + (AC)_{ia}$
$$+ (AS)_{if} + (CS)_{af} + (ACS)_{iaf}$$
$$+ \epsilon_{iafk},$$

5. $Y_{amk} = \mu + C_a + E_m + (CE)_{am} + \epsilon_{amk}$,

μ = the average means

A_i = censal decade with i = 1, 2, and 3

C_a = local governmental status with a = 1 and 2

E_m = state economic areas with m = 1...12

P_j = size of place with j = 1, 2, 3, and 4

R_p = soil regions with p = 1, 2, 3, 4, and 5

S_f = standard metropolitan statistical areas with f = 1 and 2

W_d = black belt regions with d = 1, 2, 3, and 4

and k = 1...1541 with subscript k identifying each of the population centers.

Models 1 and 2 are the same with the exception that model 1 includes SMSA and model 2 includes state economic areas. The boundaries of these two areas are co-terminous, but as indicated in Tables IX and X, the results are not identical. When these two variables were included in the same model the results became negative. It was therefore due to this factor that models 1 and 2 were set up.

There are six dependent variables; Y1, the numerical population change of the total population during a censal decade; Y2, the percentage population change of the total population during a censal decade; Y3, the numerical population change of the white population during a censal decade; Y4, the percentage population change of the white population during a censal decade; Y5, the numerical population change of the non-white population during a censal decade; Y6, the percentage population change of the non-white population during a censal decade.

The study uses the method of least squares to test the following four hypotheses.

1. Numerical and percentage changes of the non-white population are in part influenced by censal decade, local governmental function, and size of place.

2. Numerical and percentage changes of the non-white population are in part influenced by censal decade, local governmental function, and soil association regions.

3. Numerical and percentage changes of the non-white population are in part influenced by censal decade, local governmental function, and standard metropolitan statistical area.

4. Numerical and percentage changes of the non-white population are in part influenced by local governmental function, and state economic areas.

CHAPTER II

REVIEW OF LITERATURE

In the past, the rural areas of the Nation have been called the "seed-bed" for population growth. This segment of the society has been the primary source of increase of the total population. If this is true, the South can be considered to be one of the largest contributors to American population growth.

Considered to be rural and agricultural in nature, the South has been a steady contributor to the growth of the large urban areas outside of its boundaries. This contribution has been both white and non-white in character.[1] The latter has been more spectacular since 1910, when the South contained almost 90 percent of the non-white population of the nation. However, by 1950 this had been reduced to 70 percent as a result of out-migration. This steady flow of the non-white population out of the South has been the target of a considerable amount of research, both as to the places of origin and the ultimate destination of this segment of the population.

A careful review of this literature leaves little doubt that the non-white population is moving from its ancestral rural home and tradition-al occupation patterns. For example, Duncan and Reiss state: "The Negro

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[1]Since 98.4 percent of all non-whites in the South were Negroes in 1960, the terms Negro and non-white are virtually interchangeable for the purpose of this paper.

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population, originally localized in the rural South, has become increasingly urban within the South and is migrating in large proportions to other regions."[2]

This migration to "other regions" has been largely to the urban centers. In 1910, the non-white population was largely rural in nature. However, Hauser found that by 1960, 64.4 percent of the non-white population resided in the 212 Standard Metropolitan Areas (hereafter denoted by the abbreviation SMSA's).[3]

This shift of the non-white population from the rural to the urban has occurred both within the South and outside this region. Hitt observes that: "Negroes ... have played a large part in the migration from farms to cities within the South as well as to urban centers of other regions."[4]

Although the migration of the non-white population from the South to other regions has been considerable, according to Taeuber, it would not have been sufficient to have relieved the pressure on southern agriculture unless there had been an accompanying migration within this region from the rural to the urban and from agricultural areas to industrial centers.[5]

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[2]Otis Dudley Duncan and Albert J. Reiss, Jr., Social Characteristics of Urban and Rural Communities, 1950, New York: John Wiley & Sons, 1956, p. 3.

[3]Philip M. Hauser, "More from the Census of 1960," Scientific American, Vol. 207, No. 4, October, 1962, pp. 31-32.

[4]Homer L. Hitt, "Peopling the City: Migration," The Urban South, Chapel Hill: The University of North Carolina Press, 1954, p. 60.

[5]Irene B. Taeuber, "Migration, Mobility, and the Assimilation of the Negro," (Proc.) 1958 Annual Conference of the National Urban League, Omaha, Nebraska, Sept. 6-11, p. 4.

In regard to this internal migration, it is significant that the non-white migrant either stays within his state of birth or goes directly to some urban center outside of the South. Hitt further observes that in Atlanta, 90 percent of the Negroes were native Georgians and the greater bulk, over 90 percent, of New Orleans Negroes were native Louisianians; even though Mississippi was close by, relatively few of its non-white population migrated to this city, in comparison to the number that migrated to Chicago several hundred miles to the North.[6]

This shift in non-white population from the rural to the urban has had a marked affect in the distribution of the non-white population. Hart observed that:

> In 1910 only one Negro in four lived in an urban place, and Negroes comprised only 6.3 percent of the urban population; by 1950 two thirds of the nations Negroes lived in urban areas, and 9.7 percent of the urban population was Negro.[7]

This shift in residence can be observed by a comparison of the percentage of gain of the Negro population as a whole with the Negro population of the South. Between 1920 and 1950, the Negro population as a whole gained 44 percent. In 1920, about 85 percent of the Negro population lived in the South Atlantic, East South Central, and West South Central divisions of the nation. However, between 1920 and 1950, this area had a gain in Negro population of only 14.7 percent, compared to an increase of 210.6 percent in the remainder of the United States.[8]

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[6]Hitt, p. 60.

[7]John Fraser Hart, "The Changing Distribution of the American Negro," Annals, Association of American Geographers, Vol. 50, 1959, p. 242.

[8]Lawson Purdy, "Negro Migration in the United States," American Journal of Economics & Sociology, Vol. 13, July, 1954, p. 358, Tables 1 and 2.

Another way to look at this shift in the non-white population from rural to urban and from the South to other regions is to compare the total number of non-whites of these regions and the changes that have occurred, as Taeuber has done:

> In 1950, there were 8.7 million Negroes in the South, almost two and one-half times the number in the fifteen slave holding states in 1860, but there were also 4.8 million Negroes in the North. In fact, there were more Negroes in the North in 1950 than there had been in all the Confederate States at the time of the Civil War.[9]

Obviously, a great change in the distribution of the non-white population has occurred. This pattern of migration from rural to urban, South to other regions seems to be either slowing down or coming to an end.

In order to get a clearer picture of what can be expected, an examination of what has happened to the source of this migration is necessary.

The literature indicates that the number of southern farms operated by non-whites has declined steadily since 1930, when it reached an all time high of 89,490. However, by 1950 only 46,070 remained, a decline of 48.5 percent. This was an annual decline of 2.4 percent, assuming a straight-line trend all the way. From 1950 to 1954, this annual rate of decline averaged 5.7 percent.[10]

When this decline is broken down between owners and non-owners of farms, it is found that the decline for owners was 8.2 percent, and for

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[9] Taeuber, p. 2.

[10] U. S. Bureau of Census, United States Census of Agriculture, II, (General Report Statistics by Subject), Washington, D. C., Table 28, p. 358.

share-croppers and croppers, 27.5 percent and 19.1 percent, respectively.

Taeuber observed that:

> By 1954, there were only 160 thousand farms operated by non-white croppers in the South, and more than two-fifths of the operators were age 45 and above. Clearly the cropper cannot long remain a major source of supply for urban labor, whether South or North.[11]

It can be seen from the above figures that the "seed-bed" from which

the non-white population growth in urban areas has been drawn in the

past is about to run out of "seeds."

Although migration has removed most of the natural increase from the

South, and in all divisions of the South the non-white population has

diminished in proportion to that as a whole, in absolute terms the non-

white population of this region has not declined. In every decade from

1920 to 1950, the total number of non-whites increased in each division

of the South, except the East South Central, where it declined during

1940-1950.[12]

It would seem therefore, that if the non-white population of the

South is to shift continually, it must be from the urban areas and, to a

somewhat lesser degree, from the rural non-farm communities. Taeuber

continues by saying: "The Negro population is now urban and industrial,

not rural and agricultural. Future redistribution within the county

must involve primarily the movement of the people who live in towns and

cities."[13]

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[11]Taeuber, pp. 5-6.

[12]Purdy, Table 2, p. 358.

[13]Taeuber, p. 10.

Hart has found additional indications of this trend in his study of the distribution of the American Negro: "The Negro population of Metropolitan areas in the South continues to increase, both relatively and absolutely, whereas the Negro in most parts of the South is declining.[14]

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[14]Hart, p. 244.

CHAPTER III

FINDINGS OF THE STUDY

I. Numerical

The total population in towns and cities of Oklahoma for all places
in the study period shows a gain of 48.1 percent between 1930 and 1960.
The white population during this period gained 48.9 percent, while the
non-white population increased by 44.4 percent (Table I).

Breaking this down into decades reveals the following patterns. In
the 1930-40 decade, there was an increase of 3.2 percent in the total
population of the population centers. During this same period, the white
portion of the population increased by 3.9 percent and the non-white por-
tion of the population decreased by 3.5 percent (Table I).

In the 1940-50 decade, the increase in the total population of the
population centers was 16.6 percent. The rate of increase for the white
segment for this decade was 13.8 percent. The non-white population for
this same period shows a reverse trend, registering an increase of 6.1
percent, as compared to a loss in the previous decade of 3.5 percent
(Table I).

In the 1950-60 decade, the total population shows a slight increase
in the rate of gain over the previous decade, expanding by 21.0 percent.
The white segment of the population in this decade shows an increase of
19.5 percent which is 5.7 percent higher than the previous decade. The
non-white portion of the population in this decade grew by 37.3 percent,
an increase of 31.2 percent over the previous decade.

TABLE I

NUMERICAL AND PERCENTAGE CHANGES OF OKLAHOMA POPULATION CENTERS FOR
CENSAL DECADES 1930-40, 1940-50, AND 1950-60

| Census | Population of Centers | | | Percent Change | | |
Years	Total	White	Non-White	Total	White	Non-White
1930-60				48.1	48.9	44.4
1960	1,657,898	1,504,139	153,759	21.0	19.5	37.3
1950	1,348,394	1,123,681	111,713	16.6	13.8	6.1
1940	1,154,387	1,049,450	104,937	3.2	3.9	-3.5
1930	1,118,902	1,010,169	108,733			

These data indicate that, while there was a steady growth in the
rate of increase in both the total and the white segments of the popula-
tion, that in the non-white segment the pattern is not identical. After
a loss in the 1930-40 decade, the non-white population shows a moderate
gain in the 1940-50 decade and then shows a very sharp rise in the last
decade.

If the trend established in the last decade continues, it would indi-
cate that the white population will increase at a nominal rate in the
towns and cities of Oklahoma, and the non-white portion of the population
will increase at a more rapid rate proportionately.

In dealing with the independent variables, the dependent variables
Y2, Y4, and Y6 (percentage change) will be handled separately, as these
are unweighted averages, and therefore, are somewhat unreliable.

A. Size of Place

Of the seven independent variables, size of place is by far the most significant (Table II).

In places under 1,000, the total population for all three censal decades shows a loss (Tables III-A, III-B, and III-C). In places between 1,000 and 4,999, there is a slight gain in the total population for all three decades, with the exception of the non-white portion of the population in the 1930-40 censal decade which shows a loss. It is not until towns and cities fall into the third size range, 5,000 to 24,999, that one sees a significant gain in the population, and even in this range the non-white segment of the population for the 1930-40 censal decade still shows a loss. It is in the fourth size group, towns and cities 25,000 and over, that apparently the magnitude of the effect that size of place begins to materially affect the changes in the population of Oklahoma population centers (Tables III-A, III-B, and III-C).

Tables III-A, III-B, and III-C reveal that as the size of place increases the gain in population increases in direct proportion; and for the total and the white segments of the population these increases rise with each succeeding decade, showing the greatest gains to be in the last decade.

Over-all, there has been a steady decline in the non-white portion of the population in places under 1,000; a slight decline in places in the 1,000-4,999 size group; a slight increase in places in the 5,000-24,999 size group; and a sharp rise in places in the 25,000 and over size group (Table IV).

TABLE II

PERCENTAGE OF SIGNIFICANCE OF THE SEVEN INDEPENDENT VARIABLES IN
ACCOUNTING FOR CHANGE IN OKLAHOMA POPULATION CENTERS*

	Y1		Y3		Y5
Size of Place	36.54**	Size of Place	34.07**	Size of Place	28.65**
SEA	7.04**	SEA	5.45**	SEA	4.21**
County Seat	3.92**	County Seat	4.00**	County Seat	2.11**
SMSA	3.73**	SMSA	3.74**	SMSA	2.13**
Soil Region	.75	Soil Region	.79	Soil Region	.41
Black Belt	.72*	Black Belt	.68*	Black Belt	.62
Year	.32*	Year	.31*	Year	.26*

*Single and double astrisks indicate significance at the five and
one percent levels, respectively.

TABLE III-A

MEANS OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA POPULATION CENTERS,
CLASSIFIED BY THE SEVEN INDEPENDENT VARIABLES, 1930-1940

Variable	Population Changes		
	Total	White	Non-White
All Places			
1930-1960	350	321	29
Censal Decade			
1930-1940	70	78	-8
Local Gov't Status			
County Seats	752	752	-1
Non-County Seats	-52	-43	-9
State Economic Areas			
1. Panhandle	-44	-35	-8
2. North Central	43	44	-1
3. Northeast	87	160	-73
4. Southwest	-76	-84	8
5. Central Western	-57	-60	3
6. Central Eastern	122	83	38
7. South Central	130	139	-9
8. EOA River	18	59	-41
9. Ouachita Mts.	74	103	-29
10. Lawton	699	628	71
11. Tulsa	-75	-9	-65
12. Oklahoma City	1,432	1,229	203
Size of Place			
1. Under 1,000	-8	0	-9
2. 1,000-4,999	7	20	-12
3. 5,000-24,999	457	478	-20
4. 25,000 and over	5,480	5,029	451
Soil Regions			
1. Reddish Prairie	255	220	34
2. Red & Yellow Podzolic	2	10	-7
3. Reddish Chestnut	6	0	-5
4. Planosols	-11	60	-72
5. Rendzina	240	244	-3
SMSA			
1. SMSA	418	396	22
2. Non-SMSA	20	32	-11
Percentage Non-White 1910			
1. 0.0-5.0 percent	9	19	-10
2. 5.1-10.0 percent	123	163	-40
3. 10.1-20.0 percent	289	254	34
4. 20.0-and over percent	-2	-7	5

TABLE III-B

MEANS OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA POPULATION CENTERS,
CLASSIFIED BY THE SEVEN INDEPENDENT VARIABLES, 1940-1950

	Population Changes		
Variable	Total	White	Non-White
All Places			
1930-1960	350	321	29
Censal Decade			
1940-1950	374	362	12
Local Gov't Status			
County Seats	2,256	2,142	114
Non-County Seats	42	-54	25
State Economic Areas			
1. Panhandle	203	189	14
2. North Central	174	171	3
3. Northeast	157	169	-12
4. Southwest	105	85	19
5. Central Western	232	237	-4
6. Central Eastern	-211	-130	-81
7. South Central	165	169	-4
8. EOA River	240	157	-17
9. Ouachita Mts.	126	94	32
10. Lawton	1,866	1,611	255
11. Tulsa	1,127	1,081	46
12. Oklahoma City	3,989	3,790	199
Size of Place			
1. Under 1,000	-23	-22	-2
2. 1,000-4,999	240	242	-3
3. 5,000-24,999	2,042	2,006	35
4. 25,000 and over	23,139	21,677	1,461
Soil Regions			
1. Reddish Prairie	846	813	33
2. Red & Yellow Podzolic	100	112	-12
3. Reddish Chestnut	266	238	28
4. Planosols	620	598	22
5. Rendzina	38	63	-24
SMSA			
1. SMSA	1,973	1,857	116
2. Non-SMSA	154	155	-2
Percentage Non-White 1910			
1. 0.0-5.0 percent	254	238	15
2. 5.1-10.0 percent	593	567	26
3. 10.1-20.0 percent	733	709	24
4. 20.0 and over percent	96	134	-38

TABLE III-C

MEANS OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA POPULATION CENTERS,
CLASSIFIED BY THE SEVEN INDEPENDENT VARIABLES, 1950-1960

Variable	Total	White	Non-White
All Places			
1930-1960	350	321	29
Censal Decade			
1950-1960	552	472	80
Local Gov't Status			
County Seats	2,953	2,480	474
Non-County Seats	135	123	12
State Economic Areas			
1. Panhandle	109	95	13
2. North Central	65	50	14
3. Northeast	348	305	43
4. Southwest	153	131	22
5. Central Western	12	10	2
6. Central Eastern	-262	-276	13
7. South Central	136	131	4
8. EOA River	-41	-106	65
9. Ouachita Mts.	-77	-66	-10
10. Lawton	3,075	2,647	428
11. Tulsa	2,615	2,371	243
12. Oklahoma City	6,802	5,796	1,005
Size of Place			
1. Under 1,000	-7	-15	-7
2. 1,000-4,999	213	210	3
3. 5,000-24,999	1,643	1,483	159
4. 25,000 and over	32,775	27,393	5,382
Soil Regions			
1. Reddish Prairie	1,359	1,163	196
2. Red & Yellow Podzolic	24	4	20
3. Reddish Chestnut	365	310	55
4. Planosols	1,089	959	129
5. Rendzina	3	11	-8
SMSA			
1. SMSA	4,077	3,552	524
2. Non-SMSA	66	47	19
Percentage Non-White 1910			
1. 0.0-5.0 percent	260	227	32
2. 5.1-10.0 percent	835	755	79
3. 10.1-20.0 percent	1,771	1,475	295
4. 20.0 and over percent	-139	-169	29

TABLE IV

DISTRIBUTION OF THE POPULATION OF OKLAHOMA POPULATION CENTERS
BY SIZE OF PLACE AT THE BEGINNING OF THE DECADES,
1930-40, 1940-50, AND 1950-60 BY RACE

Population Groups In Decades	Size of Place			
	Under 1,000	1,000 to 4,999	5,000 to 24,000	25,000 and Over
1950-60				
Total	126,554	260,150	422,517	561,313
White	118,586	242,702	389,969	507,317
Non-White	7,968	17,448	32,548	53,996
1940-50				
Total	141,068	235,602	372,747	406,994
White	124,332	217,557	338,906	307,351
Non-White	16,736	18,045	33,841	36,643
1930-40				
Total	137,342	265,432	331,056	385,072
White	117,985	243,298	298,652	350,234
Non-White	19,357	22,134	32,404	34,838

Figures 4-A and 4-B (as shown in the Appendix) show that this
significance is due largely to the numerical increases in the third
and fourth size of places group for both county seat and non-county
seat population centers. Figure 4-C, the non-white population change,
indicates that significance is due to the increase in the fourth size
of place, and for county seats only.

B. Area

(1) State Economic Areas

Although the state economic area classification exerts the
second greatest influence of all independent variables on popu-
lation changes (Table II), it is not until we view the tenth,
eleventh, and twelveth regions do we find the basis for this

significance (Tables III-A, III-B, and III-C). The first nine regions appear to be of little importance, for each has approximately parallel trends. This holds true for all three decades.

F-tests indicate significance for state economic areas as a main effect for Y1, Y3, and Y5, in model 2, Table VI, and for Y1, Y3, and Y5, in model 5, Table VII. When state economic area is placed in interaction with local governmental function significance is indicated for Y1, Y3, and Y5, in model 5, Table VII.

(2) Standard Metropolitan Statistical Areas

The SMSA'S, while having geographical boundaries which are co-terminus with the state economic areas (Figure 3), do not account for as large a proportion of the change in population as does the state economic areas (Table II). The influence of SMSA on the non-white segment of the population is not as great in the first decade as it is for the second and third decades, which indicates that censal decade is an influencing factor (Tables III-A, III-B, and III-C).

F-tests indicate significances for SMSA'S as a main effect for Y1, Y3, and Y5, in model 1, Table V, and for Y1, Y3, and Y5, in model 4, Table VIII. When placed in interaction with censal decade significance is observed for Y1, Y3, and Y5, in model 4, Table VIII. This also holds true in interaction between local governmental function and SMSA for Y1, Y3, and Y5, model 4, Table VIII. Significance is also indicated in the three-factor

TABLE V

ANALYSIS OF VARIANCE OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA
POPULATION CENTERS, 1930-1940, 1940-1950 AND 1950-1960 (MODEL 1)*

Source of Variation	Degrees of Freedom	Calculated Variance Ratio
	-Total-	
Total	1540	
Censal Decade	2	4.34*
Local Gov't Status	1	107.40**
Size of Place	3	297.96**
Soil Regions	4	.93
SMSA	1	45.31**
Black Belt	3	3.20*
Interaction (AC)	2	8.02**
Interaction (CP)	3	43.16**
Error	1521	
	-White-	
Total	1540	
Censal Decade	2	4.06*
Local Gov't Status	1	116.81**
Size of Place	3	304.24**
Soil Regions	4	.68
SMSA	1	48.89**
Black Belt	3	1.98
Interaction (AC)	2	100.92**
Interaction (CP)	3	40.32**
Error	1521	
	-Non-White-	
Total	1540	
Censal Decade	2	4.48*
Local Gov't Status	1	30.31**
Size of Place	3	145.51**
Soil Regions	4	.81
SMSA	1	14.64**
Black Belt	3	1.35
Interaction (AC)	2	.77
Interaction (CP)	3	26.76**

*Single and double astrisks indicate significance at the five and one percent levels, respectively.

TABLE VI

ANALYSIS OF VARIANCE OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA
POPULATION CENTERS, 1930-1940, 1940-1950 AND 1950-1960 (MODEL 2)*

Source of Variation	Degrees of Freedom	Calculated Variance Ratio
-Total-		
Total	1540	
Censal Decade	2	4.06*
Local Gov't Status	1	100.36**
State Economic Areas	11	13.39**
Size of Place	3	248.86**
Soil Regions	4	.17
Black Belt	3	2.68*
Interaction (AC)	2	7.30**
Interaction (CP)	3	6.45**
Error	1511	
-White-		
Total	1540	
Censal Decade	2	4.13*
Local Gov't Status	1	118.89**
State Economic Areas	11	15.37**
Size of Place	3	275.70**
Soil Regions	4	.16
Black Belt	3	3.23*
Interaction (AC)	2	10.00**
Interaction (CP)	3	4.70**
Error	1511	
-Non-White		
Total	1540	
Censal Decade	2	4.50*
Local Gov't Status	1	30.48**
State Economic Areas	11	5.77**
Size of Place	3	133.81**
Soil Regions	4	.32
Black Belt	3	1.26
Interaction (AC)	2	8.26**
Interaction (CP)	3	30.02**
Error	1511	

*Single and double astrisks indicate significance at the five and one percent levels, respectively.

TABLE VII

ANALYSIS OF VARIANCE OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA
POPULATION CENTERS, 1930-1940, 1940-1950, AND 1950-1960 (MODEL 5)*

Source of Variation	Degrees of Freedom	Calculated Variance Ratio
	-Total-	
Total	1540	
Local Gov't Status	1	83.81**
State Economic Areas	11	11.24**
Interaction (CE)	11	37.57**
Error	1517	
	-White-	
Total	1540	
Local Gov't Status	1	76.90**
State Economic Areas	11	9.99**
Interaction (CE)	11	30.37**
Error	1517	
	-Non-White-	
Total	1540	
Local Gov't Status	1	26.69**
State Economic Areas	11	5.14**
Interaction (CE)	11	23.14**
Error	1517	

*Singel and double astrisks indicate significance at the five and
one percent levels, respectively.

TABLE VIII

ANALYSIS OF VARIANCE OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA
POPULATION CENTERS, 1930-1940, 1940-1950 AND 1950-1960 (MODEL 4)*

Source of Variation	Degrees of Freedom	Calculated Variance Ratio
	-Total-	
Total	1540	
Censal Decade	2	3.95*
Local Gov't Status	1	97.52**
SMSA	1	100.57**
Interaction (AC)	2	8.77**
Interaction (AS)	2	24.86**
Interaction (CS)	1	498.65**
Interaction (ACS)	2	91.43**
Error	1529	
	-White	
Total	1540	
Censal Decade	2	3.66*
Local Gov't Status	1	105.26**
SMSA	1	107.54**
Interaction (AC)	2	7.62**
Interaction (AS)	2	24.81**
Interaction (CS)	1	503.86**
Interaction (ACS)	2	83.47**
Error	1529	
	-Non-White-	
Total	1540	
Censal Decade Status	2	4.62*
Local Gov't Status	1	36.25**
SMSA	1	36.57**
Interaction (AC)	2	15.76**
Interaction (AS)	2	16.13**
Interaction (CS)	1	279.40**
Interaction (ACS)	2	107.98**
Error	1529	

*Single and double astrisks indicate significance at the five and
one percent levels, respectively.

interaction between censal decade, local governmental function, and SMSA for Y1, Y3, and Y5, in model 4, Table VIII.

(3) Black Belt

As an influencing factor in population changes, the density of non-white population in 1910 seems to be of no importance. When one compares the four Black Belts, the following patterns show up (Tables IX and X). For all decades combined, Black Belt 1 contains 53.9 percent of the towns and cities and 36.0 percent of the total population, 34.2 percent of the white population and 1.8 percent of the non-white population. Whereas, Black Belts 2 and 3 contain 34.4 percent of the towns and cities they contain 53.0 percent of the population; 47.9 percent of the white population and 5.1 percent of the non-white population; and Black Belt 4 contains 11.7 percent of the towns and cities and 11.0 percent of the total population; 8.9 percent of the white population and 2.1 percent of the non-white population.

F-tests indicate significances for Black Belt as a main effect for Y1 in model 1, Table V, and Y1 and Y3 in model 2, Table VI, and reject it for Y5 in models 1 and 2, Tables V and VI, but when set up as an interaction with other independent variables, no positive finding could be obtained. Therefore, on this basis, one must reject this variable as being of importance. This is further substantiated by Table II.

(4) Soil Regions

The influence of soil regions on changes in the size of population centers of Oklahoma is slight. It is only in

TABLE IX

DISTRIBUTION OF OKLAHOMA POPULATION CENTERS BY SIZE OF PLACE
AND BLACK BELT FOR ALL DECADES

Size of Place	Total Observations	Black Belt - Number of Places			
		1	2	3	4
Total Observations	1,541	831	307	222	181
Under 1,000	1,046	581	203	144	118
1,000-4,999	367	187	79	56	45
5,000-24,999	114	58	22	19	15
25,000 and Over	14	5	3	3	3

TABLE X

DISTRIBUTION OF THE POPULATION OF OKLAHOMA POPULATION CENTERS
BY SIZE OF PLACE AND BLACK BELT FOR ALL DECADES BY RACE

Population Group In Black Belt	Size of Place			
	Under 1,000	1,000 to 4,999	5,000 to 24,999	25,000 and Over
Black Belt #1				
Total	213,697	377,915	568,285	152,260
White	208,873	359,538	532,693	144,877
Non-White	4,824	18,377	35,592	7,383
Black Belt #2				
Total	88,673	161,742	201,307	466,155
White	83,153	148,247	186,401	414,653
Non-White	5,520	13,495	14,906	51,502
Black Belt #3				
Total	61,869	127,208	190,632	633,317
White	55,710	117,567	167,009	574,587
Non-White	6,159	9,641	23,623	58,730
Black Belt #4				
Total	40,725	94,319	166,096	101,647
White	13,167	78,205	141,424	93,785
Non-White	27,558	16,114	24,672	7,862

model 3, Table XI, that significance is indicated for Y1, Y3, and Y5.

F-tests show significance for soil regions when in interaction with censal decade for Y3, and Y5, in model 3, Table XI. When in interaction with censal decade, local governmental function significance is indicated for Y1, Y3, and Y5 in model 3, Table XI.

This indicates that, as a single factor, soil region exerts very little influence on the changes in the population, both white and non-white.

Although as a selective factor one can eliminate soil regions as being important, in every region the population centers do show a numerical gain in population with the single exception of Region 4, in the 1930-40 decade for the total population, and at the same time show a loss for the non-white population in this decade for every region except Region 1, Tables III-A, III-B, and III-C.

C. Local Governmental Status

In explaining variation in demographic trends of Oklahoma population centers, local governmental status falls into third place in relative importance (Table II). In all three censal decades, the centers classified as county seats show a greater gain in population than for population centers not so classified (Tables III-A, III-B, and III-C).

F-tests indicate significance for local governmental status as a main effect for Y1, Y3, and Y5, in models 1, 2, 3, 4, and 5,

TABLE XI

ANALYSIS OF VARIANCE OF THE NUMERICAL POPULATION CHANGES OF OKLAHOMA
POPULATION CENTERS, 1930-1940, 1940-1950, AND 1950-1960 (MODEL 3)*

Source of Variation	Degrees of Freedom	Calculated Variance Ratio
	-Total-	
Total	1540	
Censal Decade	2	2.70
Local Gov't Status	1	67.08**
Soil Regions	4	4.01**
Interaction (AC)	2	6.08**
Interaction (AR)	8	.86
Interaction (CR)	4	11.84**
Interaction (ACR)	8	3.01**
Error	1527	
	-White-	
Total	1540	
Censal Decade	2	9.79*
Local Gov't Status	1	299.79**
Soil Regions	4	18.23**
Interaction (AC)	2	21.76**
Interaction (AR)	8	3.41**
Interaction (CR)	4	103.54**
Interaction (ACR)	8	418.66**
Error	1527	
	-Non-White-	
Total	1540	
Censal Decade	2	5.85**
Local Gov't Status	1	40.18**
Soil Regions	4	2.71*
Interaction (AC)	2	21.17**
Interaction (AR)	8	24.13**
Interaction (CR)	4	31.93**
Interaction (ACR)	8	102.12**
Error	1527	

*Single and double astrisks indicate significance at the five and
one percent levels, respectively.

Tables V, VI, XI, VII, and VIII. When local governmental status is placed in interaction with censal decade, F-tests indicate significance for Y1 and Y3, in models 1 and 2, Tables V and VI and for Y5 in model 2, Table VI. When placed in interaction with soil regions, significance is indicated for Y1, Y3, and Y5, in model 3, Table XI. When placed in interaction with both censal decade and soil regions, significance is indicated for Y1, Y3, and Y5, in model 3, Table XI.

D. Censal Decade

Censal decade is the least important of all independent variables in accounting for changes in the population centers of Oklahoma (Table II). Although the F-tests do provide significant differences for Y1, Y3, and Y5, in models 1, 2, 3, and 4, Tables V, VI, XI, and VIII, the percentage of the explained variation is very small indeed. It is when censal decade is in interaction with other independent variables that the proportionate influence is appreciable. This fact is discussed elsewhere in this paper.

For all places, the average gain in the total population is 70 in the 1930-40 decade; 374 in the 1940-50 decade; and 552 in the 1950-60 decade. The white population shows the same progressive average increases. The non-white population in Oklahoma population centers declined in 1930-40 by an average of eight for all places. However, centers had a gain of 12 for the 1940-50 decade, and of 80 in the 1950-60 decade (Tables III-A, III-B, and III-C).

II. Percentage Changes

As previously indicated, the percentage changes in the population centers of Oklahoma are unweighted averages and, therefore, are of doubtful value in this study.

The tables and graphs that were made showed many direct conflicts with the numerical changes.

All seven independent variables in model 2 explain but 19 percent of the variation the proportionate changes of the total population of Oklahoma population centers during the three decades, 15 percent of the relative white, and three percent of the relative non-white population changes. The first two multiple correlation coefficients are significant at the one percent level, but are nevertheless rather small.

CHAPTER IV

CONCLUSION

I. Summary

The findings of this study indicate, first, progressive gains in the

total and white populations in Oklahoma centers each successive decade

during 1930 to 1960; and second, a fairly large increase in the non-

white population in Oklahoma population centers after 1930-40, reaching

its peak in the 1950-60 decade.

The non-white segment of the population in Oklahoma centers is grow-

ing in size in absolute terms after having suffered a loss in the 1930

to 1940 decade. However, proportionately the non-white population in

1960 accounted for a smaller percentage of the total population of the

Oklahoma population centers than in 1930, indicating a more vigorous

growth of the white population.

II. Findings

The following conclusions are drawn from the findings of this study.

A. The non-white population in the population centers under 1,000

has declined steadily but has risen sharply in centers of 25,000

and over, which indicates a movement of the non-white population

from the rural non-farm to urban population centers.

B. The rate of increase of the non-white population has risen

sharply in the last decade while the rate of gain for the white

population has increased somewhat uniformly throughout the three

decades.

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C. Of the seven independent variables selected, six were significant in explaining variation in population change: size of place, state economic areas, local government status, censal decades, standard metropolitan statistical areas, and black belt.

D. Size of place exerts the greatest influence in determining the changes in the population of Oklahoma centers for both the white and the non-white populations.

E. While size of place, state economic areas, local governmental status, and SMSA's account for a large percentage of the changes occurring in the size of population centers of Oklahoma, there are other variables not taken into consideration in this study which influence changes in these population centers.

F. The importance of censal decade in explaining variation increases when placed in interaction with other independent variables .

III. Inferences

This study shows that the non-white population of Oklahoma is moving toward the urban centers, particularly to those over 25,000 and away from the rural non-farm population centers. If the trend established in the last decades continues into the future, the non-white population will cluster mostly in these larger population centers, while that of places under 1,000 will almost, if not completely, disappear.

The large residue of unexplained variation in changes indicate that other factors not included in this study also exert an

influence on the movement of population. Could a breakdown in the age-sex composition of the non-white population have been obtained, it might have yielded a clearer picture of what was happening in the age-race-sex composition of the resident population and of what to expect in the future.

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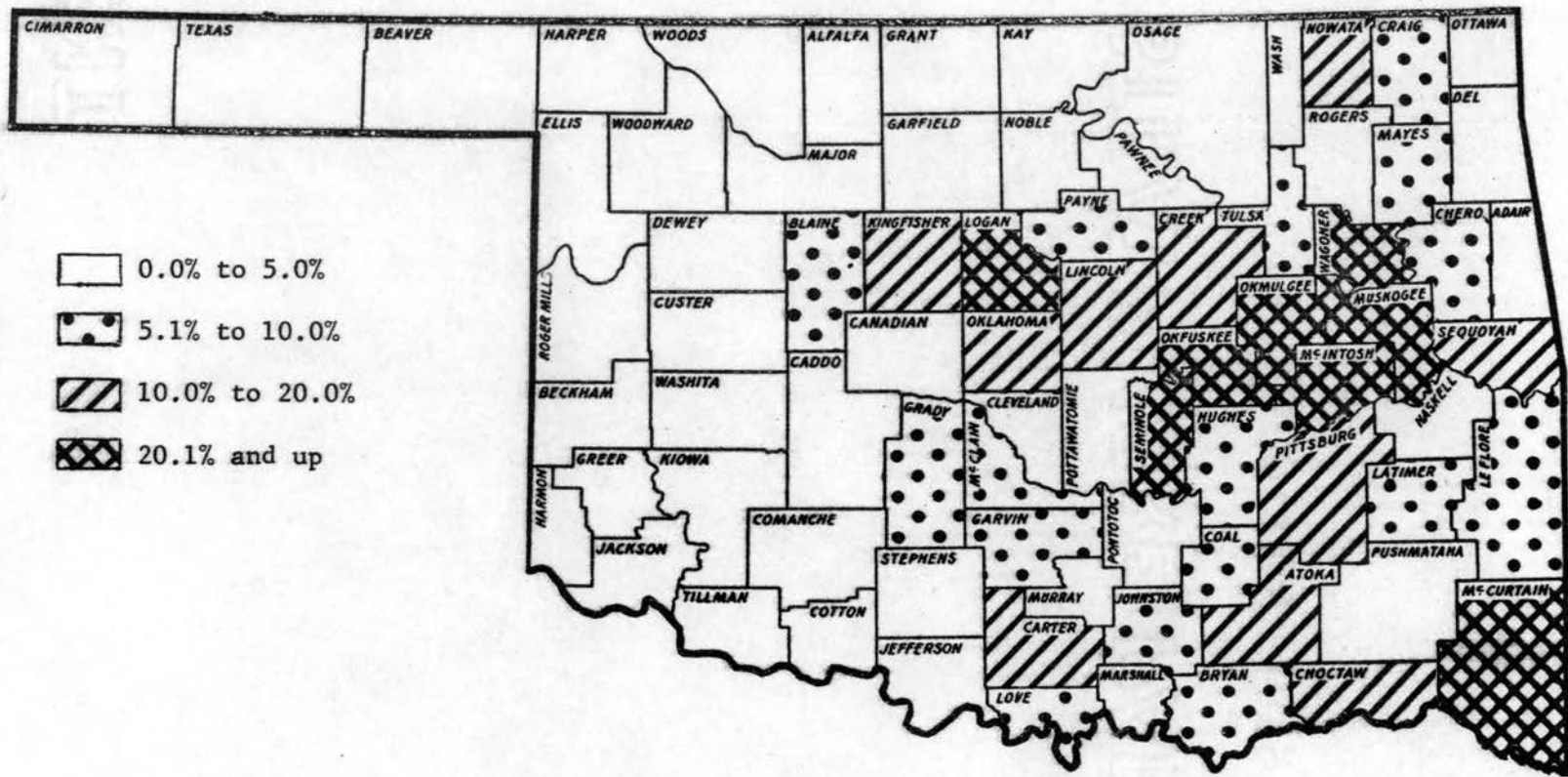
APPENDIX

Figure 1. Soil Regions

Figure 2. Black Belt Regions - Percentage Non-White

1. Panhandle
2. North Central
3. North East
4. South West
5. Central-Western
6. Central-Eastern
7. South Central
8. Eastern Arkansas River
9. Ouachita Mountains
10. Lawton
SMSA ─ 11. Tulsa
12. Oklahoma City

Figure 3. State Economic Areas and Standard Metropolitan
Statistical Areas
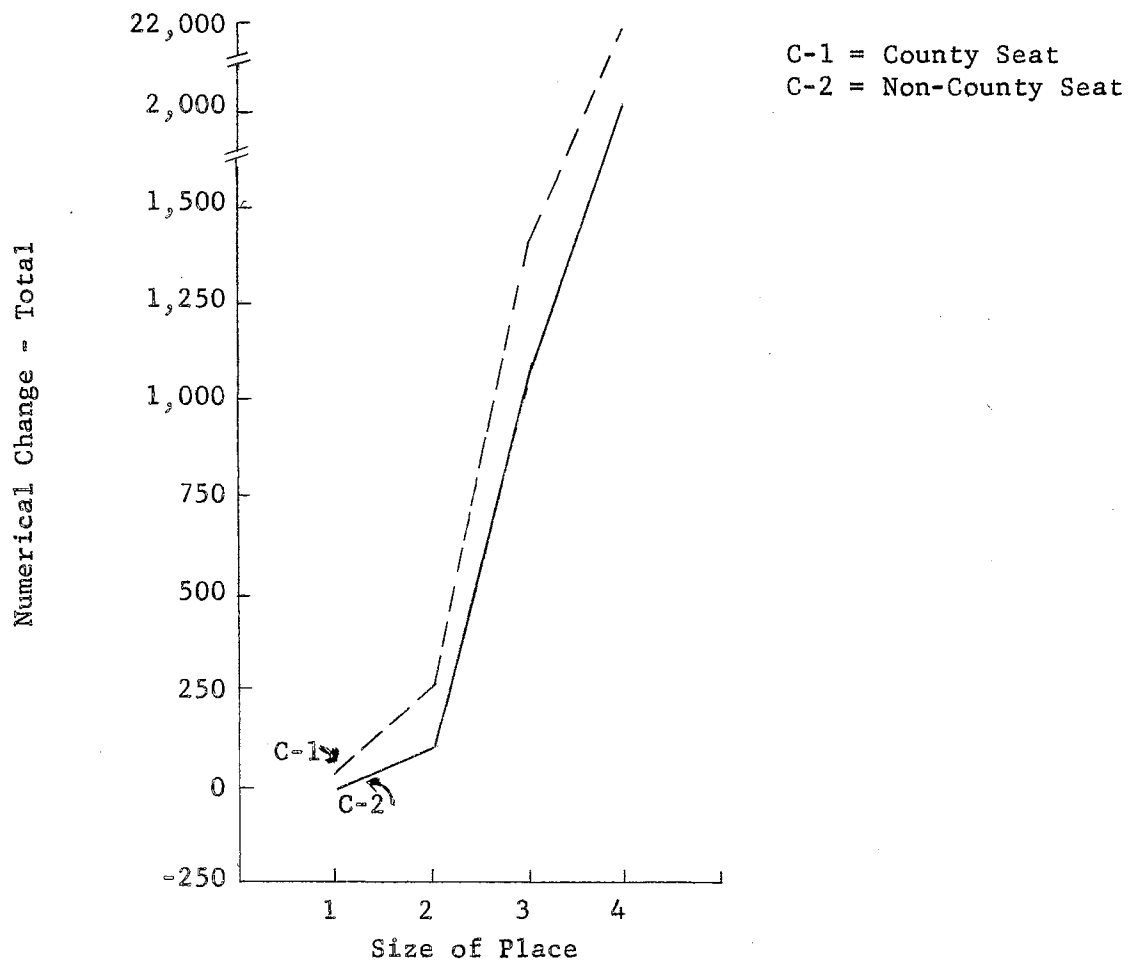
Figure 4-A. Graph of Interaction Between Local Governmental Status and Size of Place for Total Population.
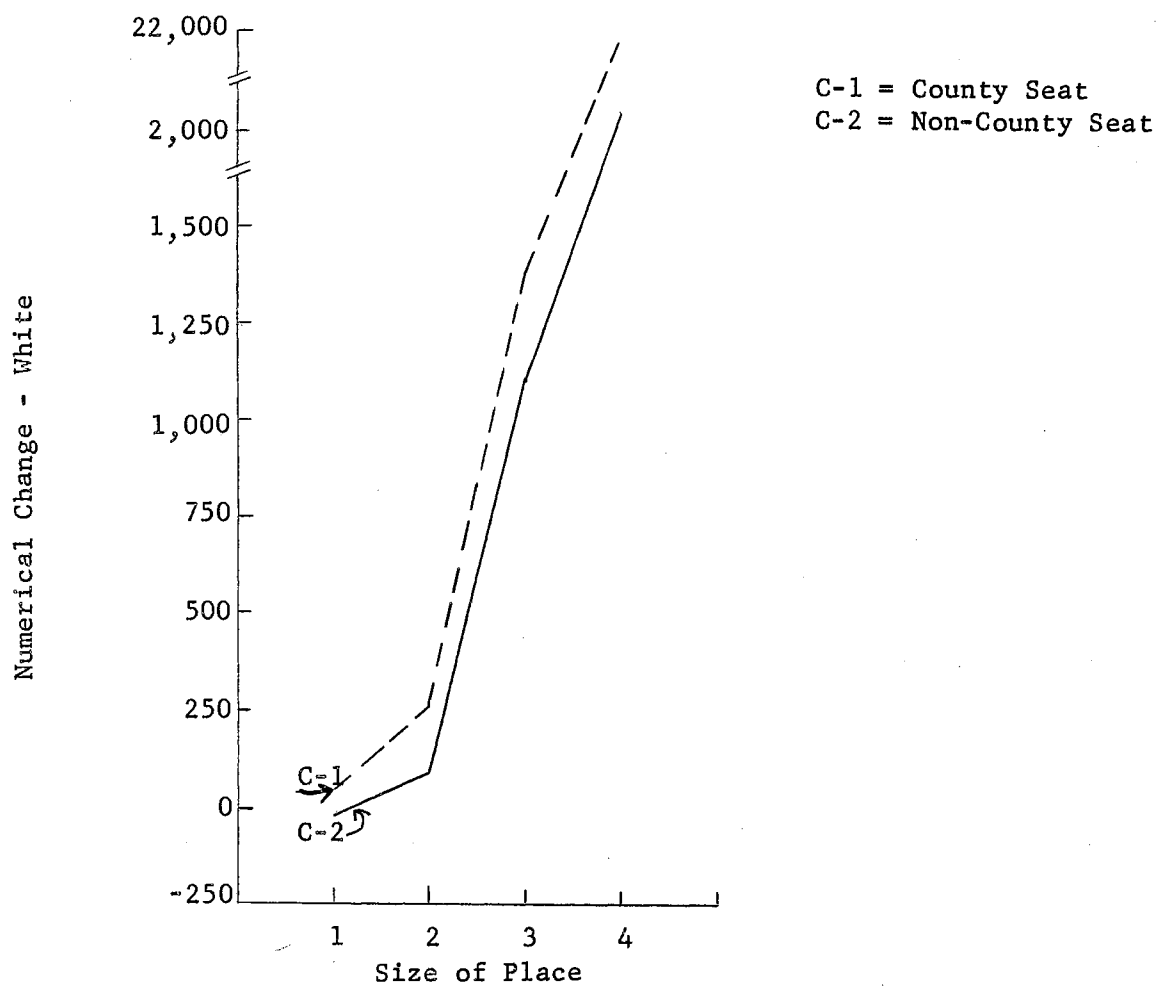
Figure 4-B. Graph of Interaction Between Local Governmental Status and Size of Place for White Population.
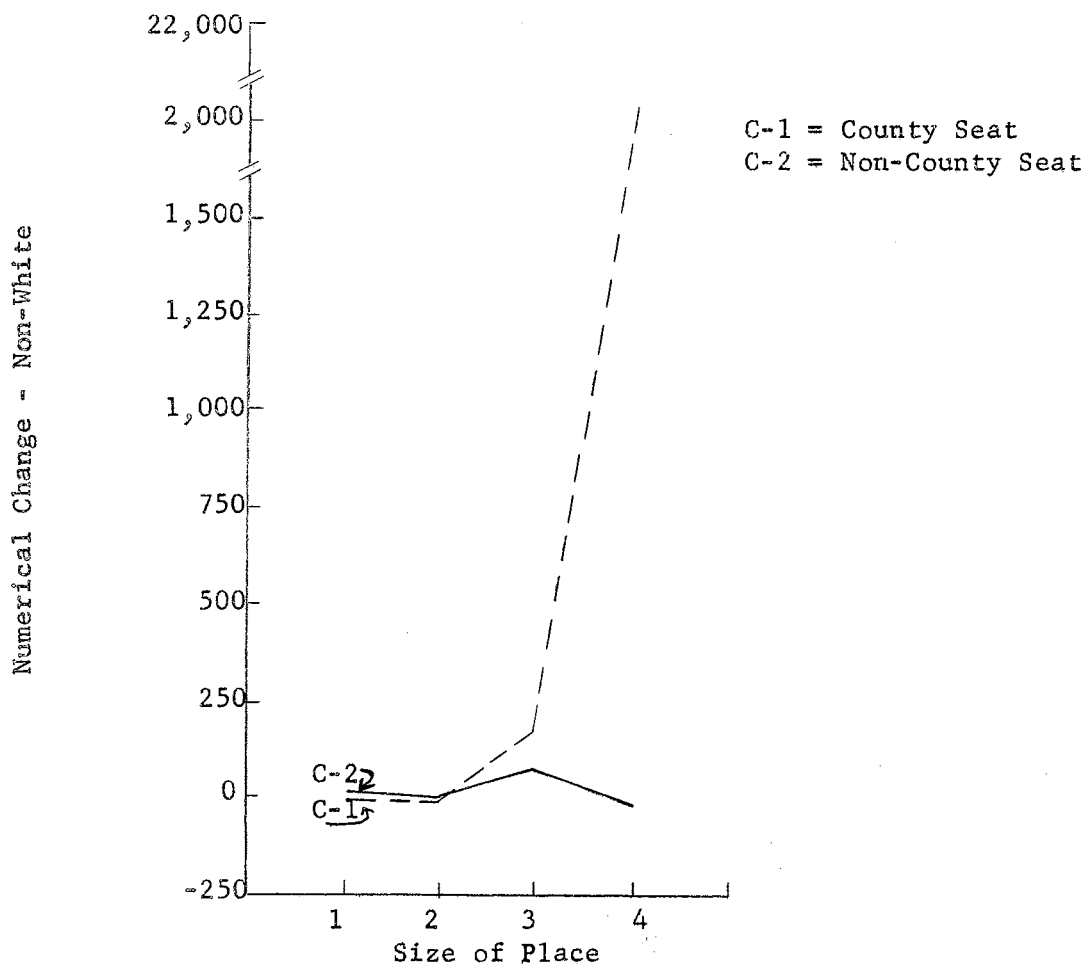
Figure 4-C. Graph of Interaction Between Local Governmental Status and Size of Place for Non-White Population.

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