MIGRATION SELECTIVITY BY AGE, SEX AND COLOR, AND THE RELATIONSHIP BETWEEN THESE PATTERNS OF SELECTIVITY AND METROPOLITAN AREA CHARACTERISTICS, MICHIGAN STANDARD METROPOLITAN STATISTICAL AREAS

Thesis for the Degree of M. A.

MICHIGAN STATE UNIVERSITY
UTAKO OZAKI

1971

ABSTRACT

MIGRATION SELECTIVITY BY AGE, SEX AND COLOR, AND THE RELATIONSHIP BETWEEN THESE PATTERNS OF SELECTIVITY AND METROPOLITAN AREA CHARACTERISTICS, MICHIGAN STANDARD METROPOLITAN STATISTICAL AREAS

by Utako Ozaki

In the first part of this study the migration patterns of the Standard Metropolitan Statistical Areas of Michigan are analyzed by age, sex, and color. Net migration between 1950 and 1960, and between 1955 and 1960, and in- and out-migration between 1955 and 1960 were the data used. It was found that certain Standard Metropolitan Statistical Areas (SMASA's) shared similar migration patterns; others were found to have unique migration patterns. Four groups comprising the ten SMSA's in Michigan were formed based on the similar or unique migration patterns exhibited.

The second part of this study considers why the migration patterns of SMSA's are similar or unique. The following hypothesis was examined: that SMSA's having similar social and economic characteristics will exhibit similar migration patterns: those having unique characteristics will exhibit unique migration patterns. It was found that migration patterns of the communities were related to selected social and economic characteristics of the communities. These characteristics were educational attainment, the proportions employed in manufacturing and in white collar occupations, the proportions of establishments of nondurable goods industries and of durable goods industries, and the income of families.

MIGRATION SELECTIVITY BY AGE, SEX AND COLOR, AND THE RELATIONSHIP BETWEEN THESE PATTERNS OF SELECTIVITY AND METROPOLITAN AREA CHARACTERISTICS, MICHIGAN STANDARD METROPOLITAN STATISTICAL AREAS

By

Utako Ozaki

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Sociology

1971

ACKNOWLEDGEMENTS

It is a great pleasure to acknowledge my debt to the members of my guidance committee, Dr. J. Allan Beegle, Chairman, Dr. Kevin D. Kelly, and Dr. Richard D. Rodefeld, for their interest in the development of demography and their readiness to advise and assist.

My sincere acknowledgement is particularly due to my advisor, Dr. J. Allan Beegle. Without his guidance and encouragement this thesis could not have been completed. I am indebted also to him for providing much useful data.

I wish to thank my old friends, Dr. and Mrs. John F. Tinker, for their cooperation in correcting the thesis.

TABLE OF CONTENTS

LIST OF APPENDIX TABLES

List of Appendix Tables (cont.)

LIST OF ILLUSTRATIONS

CHAPTER I

INTRODUCTION

The Aim of the Thesis and Its Organization:

Migration is a basic component in the demographic equation. Together with mortality and fertility, migration plays a role in the rate of population growth as well as population composition. There can be little doubt that spatial mobility has played an important role in the history of man. Today with economic and technological progress, the rate of migration has greatly increased. The automobile, airplane, and other means of transportation, of course, have facilitated such movement.

It is known that spatial mobility in the United States is greater than in any other nation. An American who lives in the same house all of his life would be considered unique. In fact, about one-quarter of the population of the United States does not live in the state in which they were born. And every year one out of five persons changes his residence. However, an average American changes his place of residence as many as ten times during his lifetime.[1]

---

[1]William Peterson, Population (New York: The Macmillan Company, 1961), p. 169.

However, in this spatially mobile nation, a great majority has always moved short distances, that is, within a single county. In 1950, persons who were living in a "different house" within the United States, were classified into two categories by the Bureau of the Census: inter- and intra-county migrants. The former are those who moved within the county, and the latter indicates those who crossed a county line. Thus, "migrants" were distinguished from "movers" according to whether they had crossed a county line or not. Migrants were further divided into those who moved within the same state, those who moved from or to a contiguous state, and those who moved from or to a non-contiguous state. Migrants are called in-migrants when they arrive, and out-migrants when they leave.

It must be pointed out here, that migration is not universal. We are all born and are destined to die, while some persons migrate and others remain where they are. Migrants do not represent a random distribution in their biological, socio-economic, and cultural characteristics. They have some characteristics that differentiate them from non-migrants.

Migration is usually selective in terms of age, sex, and certain other characteristics. Moreover, migration differentials vary with type of community. A partial aim of this thesis is to see whether or not generalizations concerning selectivity are applicable to Michigan metropolitan area migrants.[2]

---

[2]The metropolitan areas presented in this thesis are those officially defined as Standard Metropolitan Statistical Areas (SMSA's) by the Bureau of the Census. An SMSA consists of a single county or a group of adjacent counties which contains at least one

Michigan metropolitan areas were selected mainly because most migrants are concentrated in those areas. In addition, the metropolitan areas of Michigan differ in size and exhibit different social, economic, and cultural characteristics. Another purpose of this thesis is to find what characteristics of the metropolitan areas relate to the migration patterns exhibited in the analysis of migration selectivity.

Therefore, the thesis consists of two sections. The first section is devoted to an analysis of migration and selectivity with respect to age, sex, and color. Other differentials such as education and occupation were not given in the data used. Net migration data for the period 1950 to 1960, and for the period 1955 to 1960, and data for in- and out-migration between 1955 and 1960 for the Standard Metropolitan Statistical Areas (SMSA's) of Michigan will be used.

The second section of the thesis will be devoted to observing the relationship between the results of the analysis in the first section and selected characteristics of the SMSA's. The following characteristics will be examined:

1. Land area.
2. Distance between central cities.
3. Size of central city.

---

central city of 50,000 or more inhabitants, or two or more cities with a combined population of at least 50,000 persons, and which are essentially metropolitan in character and economically and socially integrated with the central city. Michigan has 10 SMSA's: Ann Arbor, Bay City, Detroit, Flint, Grand Rapids, Jackson, Kalamazoo, Lansing, Muskegon-Muskegon Heights, and Saginaw SMSA's. See Map 1.

Map 1. Standard Metropolitan Statistical Area of Michigan

Note: Ottawa County has been added to the Grand Rapids SMSA and Lapeer County to the Flint SMSA since 1967.

4. Geographic features.

5. Total population.

6. Population change:

    Total
    Net migration
    Natural increase.

7. Population characteristics:

    Urban population
    Black population
    Population of 65 years old and over.

8. Education of persons 25 years old and over:

    Median school years completed
    Completed less than 5 years of school
    Completed high school or more.

9. Employment :

    In manufacturing
    In white collar occupations.

10. Establishments with 20 or more employees:

    Nondurable goods industries
    Durable goods industries.

11. Income of families:

    Median income
    Under 3,000 dollars
    10,000 dollars and over.

This thesis, therefore, has two major purposes, namely, to identify the nature of selectivity among migrants and to ascertain the relationship between selectivity and the character of the metropolitan communities. There would seem to be little need to justify the importance of investigating selectivity among migrants. Studies exist in abundance showing that all population movements are selective in some respects, that migrants do not represent a cross-section

of the population from which they are drawn. It may be important, however, to provide a rationale for the relationship between selectivity and the characteristics of SMSA's.

It is well known that no two metropolitan areas are identical in all respects. They differ with respect to the degree of differentiation or the extent to which they are functionally specialized. They also differ in size, extent to which they are independent or linked to a network of cities, and in numerous other ways. It should be clear, then, that there should be a clear relationship between the social and economic structure of an SMSA and migrant selectivity. If the metropolitan area is specialized in heavy industry, we would expect migrants to that area to be disproportionately young, economically productive males. If the metropolitan area is specialized in insurance and clerical occupations, we would expect in-migrants to be disproportionately young females. Many other factors of course may play a role, such as availability of health and medical services, facilities for the aged, quality of educational facilities, and others.

Thus, the two parts of the thesis are closely linked. We hope to identify patterns of migration selectivity for the several Michigan SMSA's and group the SMSA's having similar (or unique) patterns. Then we want to explore the extent to which the SMSA's possess social and economic characteristics that are responsible, at least in part, for the migration patterns found.

Some Studies of Migration Selectivity by Age, Sex, and Color

In the many studies of migration selectivity, demographers have tried to establish universal migration differentials which would be applicable to any place and to any time. The laws of migration presented in 1885 by Ravenstein were one example.[3] His broad generalizations have been supported by several studies. However, up to date, the only differential which might be considered near-universal irrespective of space and time, is that persons between 20 and 34 years old are more likely to migrate than other age groups. This has been shown in many studies. According to the annual report of "Mobility of the Population of the United States," young adults have been the most mobile, especially in their twenties, and with advancing age, the mobility rate declines.[4] The study of "Migration within Ohio, 1935-40" by Thompson, showed that among the migrants to metropolitan areas, those aged between 20 and 34 constituted a larger proportion than the resident population of these ages, and the proportions of migrants under 20 and 45 and over were smaller than those of the resident population of these age groups.[5] Bogue and Hagood

---

[3]Ernest G. Ravenstein, "The Laws of Migration," Journal of the Royal Statistical Society, No. 48, June 1885, pp. 167-235.

[4]U.S., Bureau of the Census, Current Population Reports, "Mobility of the Population of the U.S.," Population Characteristics, Series P-20, 1950-60.

[5]Warren S. Thompson, Migration within Ohio, 1935-40, Scripps Foundation Studies in Population Distribution, 1951, pp. 111-125.

found, in their research on differential migration in the Corn and Cotton belts, positive indexes of differential migration as high as 300 for young adults, and negative indexes as low as 50 for young children and older adults.[6]

Similar findings have also been reported for areas outside the United States. For example, in a sample survey of the migrants to the metropolitan area of San Salvador in 1960, a heavy concentration of the migrant population was found in the young adult ages; 46 per cent were in the age group between 20 and 39, and 57 per cent were in the 15-39 age group.[7]

While it is widely recognized that young adults are over represented among migrants, several studies have reported refinements in the generalization. Sanford, for example, reported an age difference between the in-migrants and the out-migrants in a rural Alabama community. While out-migration was selective of young adults, in-migration was more evenly distributed from infancy to the 65-69 year age group.[8] Differences in the age selectivity between in-migrants and out-migrants were also reported in Hobb's study of migrants in Plymouth, a town in the Anthracite Region. While

---

[6]Donald J. Bogue and Margaret J. Hagood, Differential Migration in the Corn and Cotton Belts, Subregional Migration in the U.S. 1935-40, Vol. II, Scripps Foundation Studies in Population Distribution No. 6, 1953, pp. 10-15. The computation of the indexes were illustrated as follows: [(migration rate for the particular age group)—(migration rate for the general population)] ÷ (migration rate for the general population), times 100.

[7]Clifford J. Jansen, Readings in the Sociology of Migration (New York: Pergamon Press, 1970), pp. 390-391.

[8]Gilbert A. Sanford, "Selective Migration in a Rural Alabama Community," American Journal of Sociology, Vol. 5, Oct. 1940, pp. 763-764.

out-migration was highly selective of the age group 15-29, in-migration was selective of the same age group only to a slight degree. A large proportion of the in-migrants were in the age groups 30 to 44 and 45 years old and over.[9]

Thornthwaite found age selectivity in rural to urban migration. More than 40% of the migrants from farms to cities were between 10 and 20 years of age, and only 9% of those moving from farms to the cities were 50 years old or over.[10] Freedman in his study of "Recent Migration to Chicago" found that

> The more rural the background of the (white) migrants, the younger was the average and the greater was the excess in the years of late adolescence and early adulthood.[11]

Although Freedman agreed with the generalization that all types of migrants were concentrated in the late adolescent and early adult ages irrespective of sex, race and region of origin, he emphasized that Negro migrants were not related to variations of rural-urban cultural characteristics.

In a special study of the people of the Muskegon County area of Michigan, it was observed that non-white net in-migration occurred at every life stage, but older children between 10 and 20

---

[9]Albert H. Hobbs, Differentials in Internal Migration (Philadelphia: University of Pennsylvania, 1942), pp. 56-7.

[10]Warren C. Thornthwaite, Internal Migration in the United States (Philadelphia: University of Pennsylvania Press, 1934), p. 32.

[11]Ronald Freedman, Recent Migration to Chicago (Chicago: The University of Chicago Press, 1950), pp. 31-41.

years old, youth between 20 and 29, and young middle-aged persons between 30 and 44 were over-represented.[12]

According to the 1950 Census, among whites every age group over 30 had more than 30% living outside their state of birth, and a peak of 38% was reached for the age group over 70. On the other hand, among non-whites, the peak was already observed in the 40-49 year age group; for every age group over 20 more than a third were living outside their state of birth.[13] Thus, migration of the non-whites tends to occur at earlier ages than among the whites. This suggests that family group migration may be more characteristic of non-whites than whites.?

Very little support can be found for a universal principle with respect to the sex composition of migrants. Patterns found in the more developed nations are not often applicable to all less developed nations.

Freedman found that migrants to Chicago had a lower sex-ratio than non-migrants.[14] This was consistent with Goldstein's study of migrants in Norristown, Pennsylvania between 1910 and 1950. He observed that the sex-ratio of the migrants was 77 males for 100

---

[12]Civic Affairs Research, Inc., Anatomy of a Community: Characteristics of the People of the Muskegon County Area, 1968, p. 16.

[13]Jansen, op. cit., pp. 7-8.

[14]Freedman, loc. cit.

females, while that of the non-migrants was 91 males for 100 females.[15]

On the other hand, according to a paper presented at the 1961 International Population Conference by Dandekar, the sex-ratio of net migrants in Japan between 1950 and 1955 was 110 males for 100 females in 35 cities of over 200,000 population. Also in Ceylon, males were more likely to be migratory than females in all age groups between 1946 and 1953.[16]

In the United States, in general, through a review of current mobility data, rates for males and females are not very different, but the tendency to move has been slightly favorable for males.[17] However, the factor of time, or stage of development, appears to exert an influence on migration differentials by sex. Thornthwaite discovered that between 1910 and 1920 the number of the male in-migrants to Detroit exceeded the female in-migrants, but in the following decade the situation was reversed.[18] Hobbs explained this reversal of migration pattern as due to changing socio-economic conditions, specifically the decline of industry. According to his report, in the first period when good jobs were

---

[15]Sidney Goldstein, Patterns of Mobility: 1910-1950 (Philadelphia: Philadelphia University Press, 1958), p. 48.

[16]Jansen, op. cit., p. 17. See D. P. Dandekar, "Internal Migration in Some Countries of the East," International Population Conference, 1961, Paper 111.

[17]U.S., Bureau of the Census, op. cit., No. 61, Oct. 1955, p. 2.

[18]Thornthwaite, op. cit., p. 35.

still available outside the Anthracite Region in spite of decline in economic opportunity in Plymouth, the male out-migrants were dominant. Later, as the depression became more severe, and when jobs were very few elsewhere, the percentage of the male out-migrants decreased.[19]

Thus, the sex selectivity among migrants is diverse in time and space. It appears unlikely that any universal law can be expected.[20]

Some Studies of Migration Patterns and the Characteristics of Communities

There are relatively few studies of migration patterns as related to the characteristics of communities, although a considerable number of studies concerning migration patterns as related to the characteristics of the migrants may be found.

In the study of migration to Stockholm, Moore attempted to show the significance of the type of industrial development in the migration patterns. The study was done, based on the following two assumptions:

1. The behavior patterns of the types of communities of birth reveal a lag for those who were born in the different communities in degree of industrial development.

---

[19] Hobbs, op. cit., pp. 57-58.

[20] Donald J. Bogue, Techniques and Hypotheses for the Study of Differential Migration, International Population Conference, Paper 114.

2. Different types of community of birth produce different behavior patterns by a comparison of the following four types of distributions; education, occupation, income, and civil status.

She divided migrants by type of communities of birth into agricultural-, industrial-, and town-born persons. She, then, found that migrants to a city had lived last in a town more often than in any other type of community. Moreover, it was shown that the behavior patterns of migrants differed according to the type of community of birth as measured by their education, occupation, and civil status. However, income distributions did not reveal any significant differences. Probably because, she explains, "there was a considerable overlapping in the range of incomes for a particular occupational class," finding that the average income for each type of community of birth was same.[21]

Oyler studied migration patterns by constructing indexes of population fertility, income, communication, and education in Kentucky for the period 1920 to 1940. These indexes for the 120 counties of Kentucky were analyzed using correlation procedures. One of his hypotheses was that the net out-migration of youth 15-19 years old was associated directly with population fertility, income, communication and education. He found that low income was the strongest factor influencing outward migration among young people. The next most important factor was education. Favorable communication

---

[21]Jane Moore, Cityward Migration (Chicago: The University of Chicago Press, 1938).

networks and high fertility were influential in stimulating outward migration, but the former was countered by the accompanying effect of high income and the latter by the accompanying effect of low income.[22]

Sources of Data and Methods of Analysis

The data for this thesis were derived principally from the Census. The quality of data on migration is usually poor as compared with other demographic data. Statistics on internal migration are especially limited in most countries.

There are two major measurements for internal migration, that is, by comparison of two consecutive censuses, either by the "vital statistics method," or by the "survival ratio method." A third measure sometimes used is a comparison of state-of-birth statistics with present residence.

The vital statistics method is also called the residual method. This method estimates net migration, that is, total net gain or loss from total populations at the beginning and end of a decade after subtracting natural increase during the period. The formula is often expressed as follows: $(I -- O) = (P_1 -- P_0) -- (B -- D)$, when I, O, P_1, P_0, B, and D indicate number of in-migrants,

[22]Merton D. Oyler, Fertility Rates and Migration of Kentucky Population 1920 to 1940, as Related to Communication, Income, and Education, Ph.D. thesis, University of Chicago, 1943.

number of out-migrants, population at the end of the period, population at the beginning of the period, number of births, and number of deaths, respectively.

The survival ratio method estimates the proportion of the population which should be expected to survive at the second census and differences between the expected population and the actual population may be attributed to migration.

In the United States, beginning with the 1850 Census, native-born persons have been asked to name their state of birth, and since 1940 additional information has been collected: people were asked where they were living 5 years, or one year, earlier. Even with this information, we still see that it is not possible to reveal intermediate migration or to distinguish deaths of migrants from deaths of natives. Despite such disadvantages, it is possible to know the total volume of the movement, the type of migration, and the streams of migration through the use of the present data. The data used in this thesis were gathered through the "vital statistics method," and census questions concerning place of residence 5 years earlier.

In order to analyze the data, several methods have been used. I have used simple demographic indexes and proportions. The sex-ratios were recorded in the number of male migrants per thousand female migrants. Migration rates were computed as the ratio of net migrants for each SMSA of Michigan during the decade 1950-1960 to the population as of 1960.

CHAPTER II

AN ANALYSIS OF NET MIGRATION: 1950-60 AND 1955-60, AND IN- AND OUT-MIGRATION: 1955-60 BY AGE, SEX, AND COLOR

This chapter is devoted to analyzing the data. The data presented in this chapter are mostly those of net migration during the decade 1950-60, and the last five years of the decade, and those of in- and out-migration during the period 1955-60, for the SMSA's of Michigan. The data are analyzed by sex, age, and color, and combinations of these characteristics. The following sections, then, will be presented:

1. Net migration by age: 1950-60 and 1955-60
2. Net migration by sex: 1950-60 and 1955-60
3. Net migration by age-sex composition: 1950-60 and 1955-60
4. Net migration by age-sex-color composition: 1950-60 and 1955-60
5. In-migration and out-migration by age: 1955-60
6. In-migration and out-migration by sex: 1955-60
7. In-migration and out-migration by age-sex composition: 1955-60.

Before I deal with migration data by age, sex, and color, I will describe migration without controlling for these characteristics. That is, the total volume of net migration as well as in- and out-migration will be considered for the SMSA's in Michigan.

Net migration represents the difference between the number of migrants who moved into and out of a given area during a specified period of time. Net migration is a residual and tells us whether the area gained or lost people through migration.

During the period between 1950 and 1960, the SMSA's of Michigan gained a total of 166,146 persons through migration. About 94 per cent of the total net migration in Michigan was concentrated in the SMSA's. Migration accounted for an increase of 3 per cent of the total population of the SMSA's of Michigan. Over half the gain (55 per cent) occurred in the Detroit SMSA, the largest SMSA of Michigan. The next largest gain through migration was in the Flint SMSA (16 per cent). The Bay City and Muskegon-Muskegon Heights SMSA's each had small net in-migrations. The volume of net migration was more or less proportional to the population of the State's SMSA's, with the exception of the Kalamazoo and Lansing SMSA's. In the Kalamazoo SMSA, migration accounted for 10 per cent of the total population. This was the highest percentage found for any SMSA in Michigan. The Lansing SMSA, in spite of a high rank (fourth) in population, ranked eighth in net migration (See Appendix Table 1).

The net migration during the period between 1955 and 1960 was obtained directly by subtracting the number of out-migrants from the number of in-migrants. I would like to emphasize here that data for those under 5 years of age have been omitted, since children under five years old were not born April 1, 1955 when the 1960 Census was taken. Besides these limitations, some data for the Muskegon-Muskegon Heights SMSA were not available, and since data

for non-whites were collected for the Detroit and Flint SMSA's only, the analysis by color was omitted for the period 1955-1960.

Although the net migration available here applies to the population five years old and over between 1955 and 1960, some aspects are quite different from the net migration for the decade. Some of the differences will be mentioned here.

One characteristic finding was a half of all Michigan SMSA's experienced net out-migration which was not found for the decade. This suggests that the net in-migration which was found in all SMSA's between 1950 and 1960, was due to the supposed large net in-migration which occurred during the first 5 years of the decade. It was interesting to notice that the big three SMSA's of Michigan all had net losses. These three SMSA's--Detroit, Flint, and Grand Rapids--rely in large measure on the automobile industry. Therefore, it seems quite reasonable to suppose that net out-migration in these SMSA's during the last part of the decade may reflect changing economic conditions in the automobile industry.

On the other hand, net in-migration between 1955 and 1960 was found in the Ann Arbor, Jackson, Kalamazoo, and Lansing SMSA's. It should be remembered that, except for the Jackson SMSA, the SMSA's mentioned above surround expanding university towns.

Unlike net migration, the direct data of in-migration and out-migration reveal how many migrants came in to the SMSA's and how many went out from the SMSA's. Moreover, we shall notice some differences in the migration pattern between in-migrants, which are not apparent in the net migration data.

According to the Census report, more than half of those who lived in the SMSA's of Michigan in 1955 still lived in the same house in 1960. The Ann Arbor and Kalamazoo SMSA's were exceptional. In these two SMSA's, many more mobile persons were found than persons who did not change their residences. Especially in the Ann Arbor SMSA's only 40% of the total population (5 years old and over) lived in the same house. On the contrary, the most stable was the Bay City SMSA, in which only 61% of the total population (5 years old and over) did not change their houses.

Of persons who lived in different houses, more than half moved within the same county. This was true of all SMSA's except the Ann Arbor SMSA. The Saginaw, Muskegon-Muskegon Heights, and Flint SMSA's showed very high rates (79.5%, 78.2%, 78.2%, respectively) of movement within the county. On the other hand, the Ann Arbor, Lansing, and Kalamazoo SMSA's showed higher out-migration rates than the other SMSA's of Michigan (See Appendix Table 2).*

Over half of the migrants in all SMSA's of Michigan moved within the state. The Bay City, Jackson, and Lansing SMSA's showed especially high rates of within-state migration. However, a considerable number of migrants from different states were observed in the Flint and Ann Arbor SMSA's. This was true for out-migrants.

---

*Note: Detroit SMSA and Lansing SMSA consist of three counties respectively, while the other SMSA's consist of only one county. Therefore, we have migrants who crossed the county line within the Detroit and Lansing SMSA's. Appendix Table 2 counts such migrants who moved to different counties in these two SMSA's. However, in-migrants and out-migrants for the SMSA's do not count migrations within the SMSA's, if there is no special indication.

Also out-migrants from most of the SMSA's moved within the state, but in the Ann Arbor and Flint SMSA's many more migrants moved to different states than to the same state. In addition to these two SMSA's, Detroit SMSA showed the lowest rate (24.4%) of out-migrants who moved within the state.

As we see Appendix Tables 3 and 4, the non-white population was more mobile than white population. Although the non-white population was more mobile than the white population in absolute numbers, it was found that the rate of migration of the white population was higher than that of the non-white population. In other words, among the non-white mobile population we find a greater number who had changed residence within the same county, but a smaller proportion of the white population. This was true of all SMSA's of Michigan except the Jackson and Bay City SMSA's. However, if we consider migration for both whites and non-whites, the non-white migrants had the tendency to move to the SMSA's from greater distances than the whites. More than 55% of the white migrants to the SMSA's of Michigan were from within the state, while the greater proportion of non-white migrants was from different states. The Ann Arbor and Jackson SMSA's were exceptional; that is, in these two SMSA's many more non-white migrants came from the state.

Also out-migration from the area was more likely to occur within the state. However, unlike in-migrants, out-migrants had the tendency to move longer distance. And yet in the two big SMSA's of Michigan, Detroit and Flint, migrants to non-contiguous states

outnumbered migrants to the state. This was observed also in the Ann Arbor SMSA.

It was interesting to note that the proportions of both in-migrants from contiguous states and out-migrants to contiguous states were very small in all SMSA's of Michigan (See Appendix Table 5).

Net Migration by Age: 1950-1960 and 1955-1960

All ages were classified into four groups: young people from age 0 to 14, younger adults from 15 to 34, older adults from 35 to 64, and old people of 65 years old and over.

During the period between 1950 and 1960, total net in-migration in all SMSA's of Michigan were largely due to net in-migration of the young adult age group. All SMSA's of Michigan experienced net out-migration of old people. These findings might be explained by the fact that metropolitan areas have many social, economic, and cultural attributes which are attractive to young groups, while environmental factors are more important for old people.

However, when we examine each SMSA, we see some variations in age groups. Although net in-migration occurred largely in the younger adult group, the Bay City, Muskegon-Muskegon Heights, and Saginaw SMSA's lost this age group through migration. It is interesting that these three SMSA's showed similar migration patterns in

many respects. Other SMSA's of Michigan also had some similarities in migration patterns. As another aim of this thesis, the following chapter will treat this subject more thoroughly. This chapter describes only the differentials by age, sex, and color of migrants.

The Ann Arbor and Lansing SMSA's were characteristic of the pattern in which net in-migration was seen only in the young adult age group. In all other age groups out-migrants exceeded in-migrants. Since Ann Arbor and Lansing have state universities, the great excess of in-migration over out-migration in the younger adult age group is mostly due to the inflow of students. These two SMSA's, in fact, have large proportions of young people and younger adults; however, the Lansing SMSA has considerable proportions in the older adult age group because it is a governmental center employing many people in the older age group (See Appendix Tables 1 and 6). In addition to the Ann Arbor and and Lansing SMSA's, the Jackson SMSA also had net out-migration among older adults. This is due to the fact that in the Jackson SMSA the continuous excess of out-migrants over in-migrants started at an earlier age than in any other SMSA's of Michigan, except the Detroit SMSA. In the Jackson and Detroit SMSA's, age 50 is the beginning as opposed to age 60 in others. In all SMSA's of Michigan, the highest migration rate occurred in the younger adult age group, particularly in the age group between 20 and 34. The highest net in-migration rates were observed at the early 20's in the Ann Arbor, Kalamazoo, and Lansing SMSA's, the main reason being college students. The Bay City, Muskegon-Muskegon Heights, and Saginaw SMSA's had something in common: the highest

net in-migration rates were in the early 30's, while the highest net out-migration rates were in the early 20's. In all other SMSA's of Michigan, the highest net in-migration rates were shown in the late 20's and the highest net out-migration rates were found among old people (See Appendix Table 7).

Net migration during the period, 1955 to 1960, was quite different from net migration during the decade, 1950 to 1960. It is very striking that all age groups experienced net out-migration in the Detroit, Flint, Grand Rapids, and Saginaw SMSA's. And yet, the outflow was concentrated particularly in the age group of younger adults. This was in contrast with the migration pattern of the decade, since that same age group experienced the highest net in-migration during the decade. The Ann Arbor and Lansing SMSA's showed the same pattern of net migration, that is, net in-migration occurred only among younger adults. The Kalamazoo SMSA was the only SMSA that experienced net in-migration in all age groups. In the Jackson SMSA, net out-migration of the older adult age group, which was observed for the decade, would be due to the outflow of that age group during the first five years of the decade, since a considerable net in-migration was shown in the same age group during the last five years of the decade (See Appendix Table 6).

Net Migration by Sex: 1950-1960 and 1955-1960

In the decade, 1950 to 1960, total female net migration in all SMSA's of Michigan outnumbered total male net migration by 37%. This was due to a greater net in-migration of female younger adults, and to a considerable outflow of male old people. This seems to be true also in the total population in all SMSA's. The female population of younger adults and of old people exceeded the male population of younger adults and of old people.

Net out-migration of females took place in the Bay City and Muskegon-Muskegon Heights SMSA's, while that of males was found only in the Lansing SMSA. In all SMSA's in which net in-migration occurred, the female net in-migration exceeded greatly the male net in-migration. However, only the Jackson SMSA was exceptional; that is, male net in-migration slightly exceeded female net in-migration (See Appendix Tables 8a and 8b).

Female migration rates were higher than male migration rates in all SMSA's except: 1) the Bay City and Muskegon-Muskegon Heights SMSA's in which net out-migration of females occurred and 2) the Jackson SMSA in which male net migration outnumbered female net migration. The highest migration rate was found for both sexes in the Kalamazoo SMSA (10.5 for males and 11.3 for females). Flint SMSA came next (7.5 for males and 7.9 for females). The lowest migration rate of males was found in the Lansing SMSA, and that for females was found in the Bay City SMSA. In most SMSA's the difference between migration rates for males and those for females was

small, but Ann Arbor SMSA showed a great difference (2.6 for males and 6.0 for females) (See Appendix Table 9).

The Detroit, Flint, Grand Rapids, and Saginaw SMSA's which experienced net in-migration for both sexes during the decade, 1950 to 1960, showed net out-migration for both sexes in the period between 1955 and 1960. For the period between 1955 and 1960 these SMSA's had net losses in which males outnumbered females, while for the decade, 1950 to 1960, they had net gains in which females outnumbered males.

Net in-migration for both sexes, on the other hand, was shown in the Ann Arbor, Kalamazoo, and Lansing SMSA's. In the Lansing SMSA female net in-migration constituted 98% of the total net in-migration of the SMSA. The other two SMSA's showed nearly equal male and female net in-migration.

Net out-migration of males and net in-migration of females was found in the Bay City SMSA, while net in-migration of males and net out-migration of females was found in the Jackson SMSA.

Through the observation of net migration between 1950 and 1960, and between 1955 and 1960, it seems clear that the net loss during the last 5 years of the decade required a large net gain during the first 5 years in order to yield a net gain for the decade as a whole. Data, however, were lacking for the Muskegon-Muskegon Heights SMSA, and the decade data included ages under 5 years (See Figures 1 and 2).

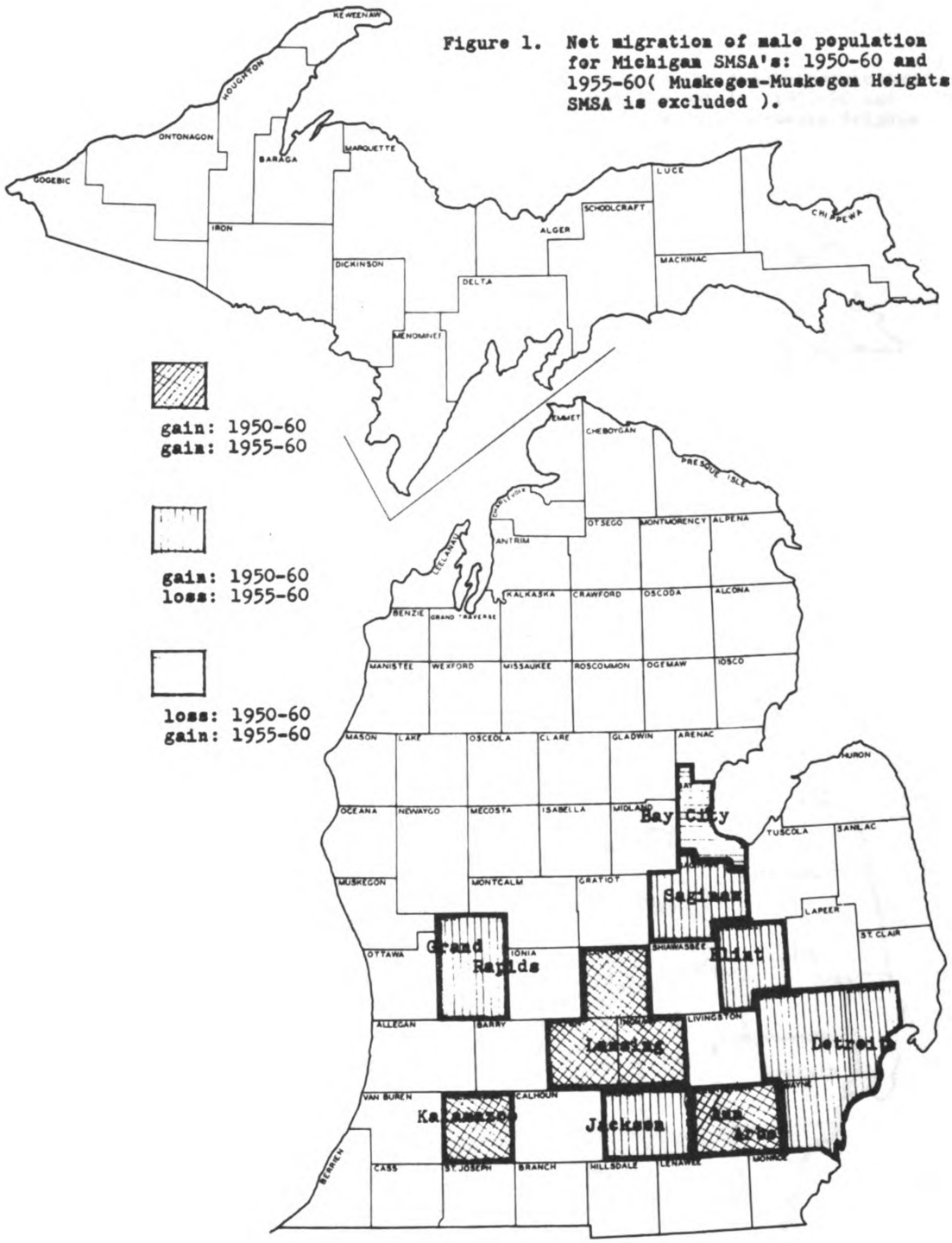


Figure 1. Net migration of male population for Michigan SMSA's: 1950-60 and 1955-60(Muskegon-Muskegon Heights SMSA is excluded).

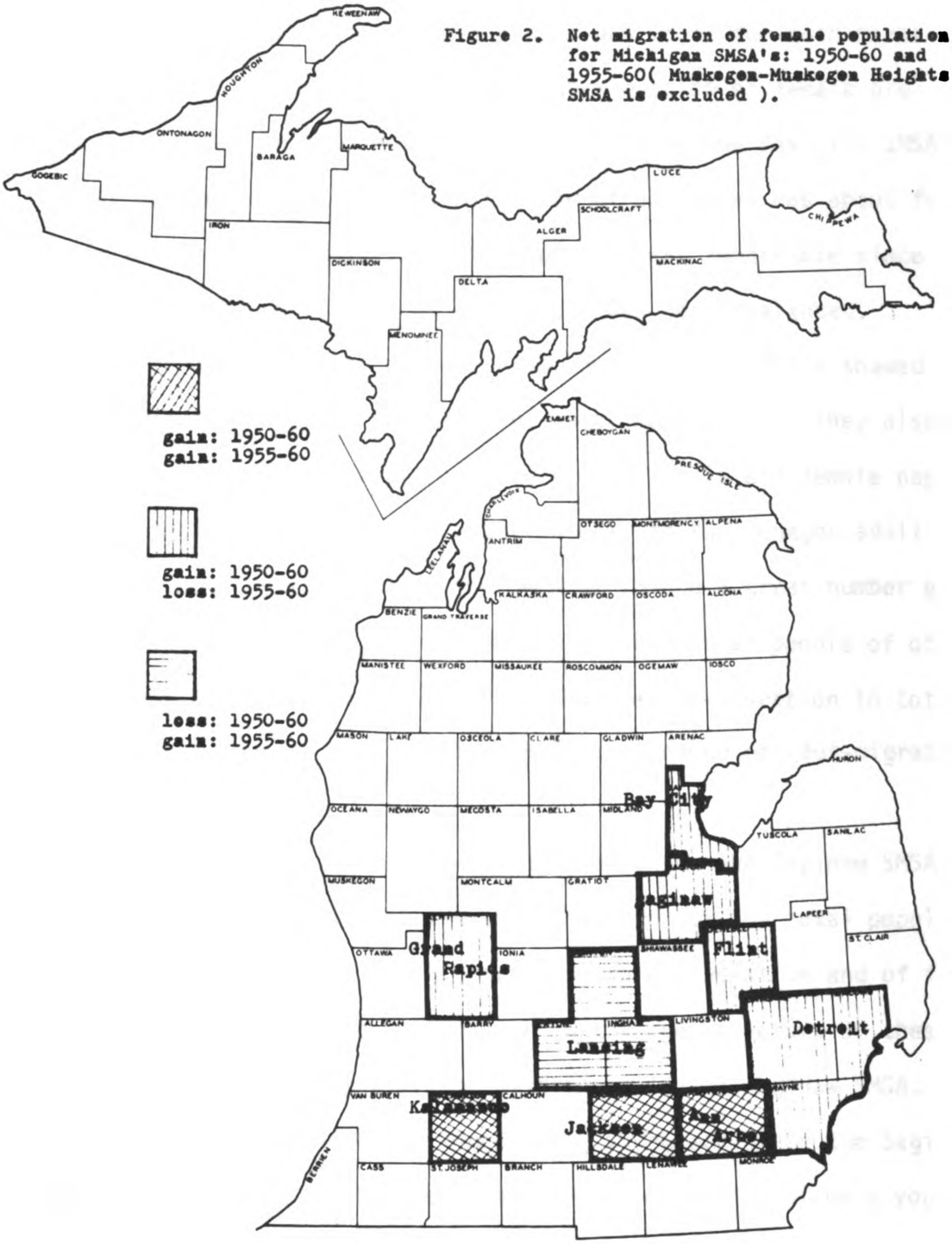


Figure 2. Net migration of female population for Michigan SMSA's: 1950-60 and 1955-60(Muskegon-Muskegon Heights SMSA is excluded).

Net Migration by Age-Sex Composition: 1950-1960 and 1955-1960

Net out-migration of old people was found for both sexes in all SMSA's in the decade data. Net out-migration of female old people exceeded that of male old people only in the Bay City SMSA. In the Kalamazoo SMSA net out-migration of old males was about four times that of old females. This proportion was remarkable since the male and female population of old people was not unbalanced.

As we have seen, the Ann Arbor and Lansing SMSA's showed the same pattern in the net migration of total population. They also show the same pattern in the net migration of male and female population. Net in-migration was observed only in the younger adult group for both sexes in these two SMSA's. Since a great number of younger adults came in, many more than the number of people of other age groups who went out, these SMSA's had net in-migration in total population. However, the Lansing SMSA experienced net out-migration of male population.

The Bay City, Muskegon-Muskegon Heights, and Saginaw SMSA's resembled each other in net migration pattern for the total population. When we observed net migration of male population and of female population separately, considering the age structure of these three SMSA's, there was a slight difference in the Saginaw SMSA. Net out-migration, which was found among young adults in the Saginaw SMSA, was ascribed to the excess of net out-migration of male young adults over net in-migration of female young adults. On the other

hand, the Bay City and Muskegon-Muskegon Heights SMSA's continued to present the same pattern as to age-sex differentials. They both experienced net out-migration of young adults and old people of both sexes.

Further examinations of net migration by age-sex composition are possible when we divide the population into more age categories than the four age groups examined so far.

It is interesting to note that the Jackson SMSA, compared to all other SMSA's of Michigan, showed a unique migration pattern. In the Jackson SMSA male net in-migration greatly outnumbered female net in-migration in the age group between 25 and 34, while the situation was reversed in other SMSA's. Moreover, for the male population, there was continuous net out-migration after the age of 35, although it is generally found that continuous outflow occurs after the age of 65. These findings might be explained by the fact that there is a large prison for males in the Jackson SMSA; most prisoners are young adults and they are discharged from prison when they become older adults. Also in the Detroit SMSA, the outflow started earlier, at around age 50 for both sexes.

In the Grand Rapids SMSA the highest in-migration of male population occurs between the ages of 20 and 24 and the highest out-migration of female population takes place in the same age group. This was an unusual pattern.

In all SMSA's high migration rates were found among young adults, particularly in the age group between 20 and 24, for both sexes. However, high migration rates occurred earlier for females

than males. In the Ann Arbor SMSA the highest migration rates took place in the age group between 20 and 24 for both sexes (191.6 for males and 178.3 for females).

Through the observation of net migration data during the period between 1950 and 1960, it was revealed that net migration for both sexes and for all age groups was found in the Detroit, Flint, Grand Rapids, and Saginaw SMSA's. This was not observed in the decade data. In all these SMSA's, it was the young adult males that showed the highest net out-migration of all age groups. For female population of these SMSA's, the highest net out-migration was found both among the young adult and the older adult groups.

During the decade, net out-migration of young people of both sexes took place only in the Ann Arbor and Lansing SMSA's; however, for the period between 1955 and 1960, this net out-migration of young people of both sexes was observed in all SMSA's except two: the Jackson and Kalamazoo SMSA's. It was to be expected that the SMSA's in which net out-migration of young people occurred would also experience net out-migration of the older adults of both sexes. This suggests that much of SMSA migration would be family-type migration.

Moreover, unexpectedly, old females migrated into the Ann Arbor, Bay City, and Kalamazoo SMSA's, despite the net out-migration for both sexes during the decade in all SMSA's.

Net Migration by Age- Sex- Color Composition: 1950-1960

Since the data of net migration for non-white population were not available for all SMSA's of Michigan, the analysis in this section is limited. The data were collected for the following seven SMSA's in which non-white population were more than 5,000 in 1950: Ann Arbor, Detroit, Flint, Grand Rapids, Jackson, Muskegon-Muskegon Heights, and Saginaw SMSA's. Since over 90% of the non-white population is black, the non-white population was considered here as being black.

The most remarkable fact was that net in-migration was largely due to non-white net in-migration. Total net in-migration of white population was only 35,436, while that of non-white population was 111,643, over three times as large. In fact, 17% of the total non-white population in the seven SMSA's in 1960 consisted of net in-migration of non-white population, while net in-migration of white population was only 0.8% of the total white population in the seven SMSA's in 1960. Here, it should be added that the great volume of net in-migration of the non-whites for all SMSA's was accounted for by the Detroit SMSA.

It was also characteristic that although net migration of females exceeded that of males for both white and non-white populations, the total difference in all seven SMSA's was small for the non-whites whereas it was as large as six times for the whites (See Appendix Tables 10 and 11).

Another characteristic was that for both sexes of the whites, net out-migration took place among old people in all the SMSA's, but for the non-whites net in-migration of old people was characteristic in most SMSA's.

When we look at the net migration pattern of each SMSA, several new features may be observed. First, in spite of net out-migration of the whites of both sexes in the Muskegon-Muskegon Heights and Saginaw SMSA's, these SMSA's showed net in-migration for the total population because of the excess of net in-migration of the non-whites. The Detroit SMSA also experienced net out-migration of white male population. This was mainly caused by a large net out-migration of old people.

In the Ann Arbor and Jackson SMSA's, the same patterns were presented for both white and non-white population. Net out-migration of young people, older adults, and old people was found for both whites and non-whites and for both sexes in the Ann Arbor SMSA. In the Jackson SMSA, net out-migration of male population was found among older adults and old people, while out-migration of female population was found among old people, both white and non-white.

Regarding net in-migration, the highest number was found among young adults for both sexes regardless of their color in all of the remaining SMSA's; except that in the Muskegon-Muskegon Heights and Saginaw SMSA's, this was true only for the non-white population.

As we expected, the migration rates of non-white population were a great deal higher than those of the white population. Irrespective of color, female migration rates were generally higher than

male migration rates, but among the younger adult age group in which the highest migration rates were found, male migration rates were higher than female migration rates in allSMSA's except the Detroit and Grand Rapids SMSA's. The highest migration rates of non-white male population were located in the age group 25 to 29, while those of white male population were between 20 and 34. This was also often true for females, although two exceptions were found for the non-white population in the Ann Arbor and Jackson SMSA's. The highest migration rates were found in the age group between 20 and 24 (See Appendix Tables 12 and 13).

In-migration and Out-migration by Age: 1955-1960

Appendix Table 14 shows that a great deal of both in-migration and out-migration was found among the young adults in all SMSA's. The high concentration was seen particularly in the 20's, although in-migration seemed to be more frequent during the late 20's and out-migration during the early 20's. In the Ann Arbor, Kalamazoo, and Lansing SMSA's; however, the situation was reversed, probably because of the effect of student enrollment.

If we look at more specific age groups, we see that the mobility of children between 5 years old and 9 years old is not negligible: especially, in-migration of this age group in the Bay City, Flint, and Saginaw SMSA's, and out-migration of the same age group in the Flint, Kalamazoo, and Saginaw SMSA's were remarkable.

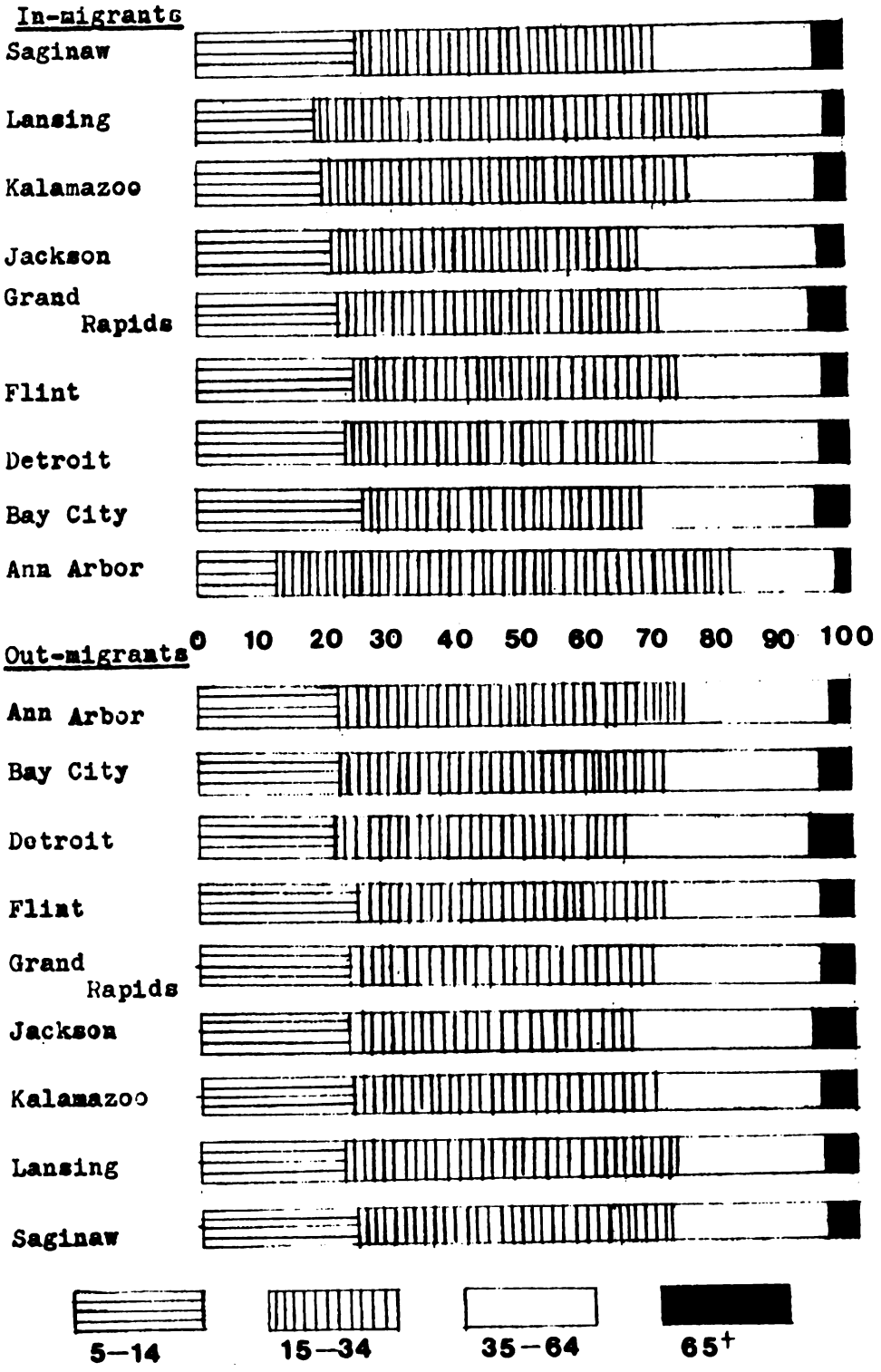
Appendix Table 14 shows also that, compared to in-migration, out-migration from the SMSA's was more likely to occur for those people whose age was 35 years old and over. This agrees with the preponderance of out-migration observed for old people of 65 years old and over (See Figure 3).

In-migration and Out-migration by Sex: 1955-1960

In order to make clear some differences between male migrants and female migrants in the SMSA's, the application of sex-ratio was used here. As shown in Appendix Table 15, in -migration to the SMSA's was found more frequent for females than males. On the other hand, out-migration from the SMSA's was found among male population. In the Jackson SMSA, male migrants were dominant in both in-migration and out-migration, while in the Kalamazoo SMSA, female migrants were dominant in both in-migration and out-migration.

It was found that every SMSA in which female in-migrants greatly outnumbered male in-migrants also showed an excess of female total over male total population; and, on the other hand, the SMSA's in which male in-migrants greatly outnumbered female in-migrants, had an excess of male total over female total population. The former case was seen in the Bay City, Grand Rapids, and Saginaw SMSA's. The latter case was found in the Ann Arbor and Jackson SMSA's. These findings suggest that either the sex composition of the population influences migration; that migration influences the

Figure 3. Percent distribution of in- and out-migrants by age groups for Michigan SMSA's: 1955-60 (Muskegon-Muskegon Heights SMSA is excluded).



sex composition; or, more likely, that something about an area has attracted one sex more strongly than the other, and continues to do so (Appendix Table 15).

In-migrantion and Out-migration by Age-Sex Composition: 1955-1960

This section gives more explicit differences between male migrants and female migrants.

It was found that males between 35 and 64 are out-migrants while females of that age are in-migrants. The total number of female migrants 65 years old and over would be expected to be greater than male migrants since females greatly outnumber males at this age. However, in the Detroit and Flint SMSA's, aged male out-migrants exceeded aged female out-migrants.

It was interesting to note that in the Ann Arbor and Kalamazoo SMSA's, the highest sex-ratios of in-migrants occurred among young people. Yet female out-migrants were predominant in the same age group.

The Jackson SMSA was the only SMSA that showed a high sex-ratio for both in-migrants and out-migrants in the younger adult age group. This SMSA, in fact, was also the only SMSA in which male population outnumbered female population in the age categories, except for old age groups.

CHAPTER III

THE RELATIONSHIP BETWEEN MIGRATION PATTERNS AND THE CHARACTERISTICS OF THE SMSA'S OF MICHIGAN

In the previous chapter migration patterns in the SMSA's of Michigan were revealed through net migration and in- and out-migration by age, sex, and color. The aim of this chapter is to explicate the hypothesis that some social, economic, or combination of characteristics of the SMSA can explain the migration patterns found.

It was observed that migration patterns of some SMSA's were quite different from the average, and that some were strikingly different. Why did these differences occur? And why were some migration patterns exhibited by groups of SMSA's? The pattern of differentials suggests a parallel pattern of characteristics: common migration patterns reflect common attributes; unique patterns reflect unique attributes.

The attributes I have attempted to correlate the migration patterns are, social, economic, and geographical ones. They are shown with demographic characteristics of each SMSA in Appendix Table 16. Based on the well-known relationship between migration and economic factors, a number of the characteristics chosen are economic.

Before we find relationship between the migration patterns and the characteristics of the SMSA's, we first group the SMSA's into the various common patterns and unique patterns as follows:

A. Common migration patterns exhibited in the Ann Arbor, Kalamazoo, and Lansing SMSA's.

   a. The highest net in-migration rates during the early twenties.

   b. Larger proportion of migrants than all other SMSA's.

   c. Net in-migration between 1955 and 1960.

   d. In-migration of ages in the early twenties and out-migration of ages in the late twenties between 1955 and 1960.

   e. Net in-migration of the younger adult age group only, for both sexes (Ann Arbor and Lansing SMSA's).

   f. The highest sex-ratio of in-migrants among young adults and the lowest sex-ratio of out-migrants among the same age group (Ann Arbor and Kalamazoo SMSA's).

B. Common migration patterns exhibited in the Bay City, Muskegon-Muskegon Heights and Saginaw SMSA's.

   a. Loss of young adult group.

   b. The highest net in-migration rates at the early thirties and the highest net out-migration at the early twenties.

   c. A small amount of net in-migration (Bay City and Muskegon-Muskegon Heights SMSA's).

   d. Net out-migration of total female population (Bay City and Muskegon-Muskegon Heights SMSA's).

   e. A higher migration rate of male population than that of female population (Bay City and Muskegon-Muskegon Heights SMSA's).

   f. Net out-migration of young adults and of old people for both sexes (Bay City and Muskegon-Muskegon Heights SMSA's).

g. The highest number of net in-migration of the old adults for the whites and of the young adults for the non-whites (Muskegon-Muskegon Heights and Saginaw SMSA's).

h. Net in-migration for total population due to the great amount of net in-migration of non-whites in spite of net out-migration of whites (Muskegon-Muskegon Heights and Saginaw SMSA's).

i. Considerable in-migration of young people aged between 5 and 9 in the period, 1955 to 1960 (Bay City and Saginaw SMSA's).

C. Common migration patterns exhibited in the Detroit, Flint, and Grand Rapids SMSA's.

a. Net out-migration for total population during the period 1955-1960.

b. Net out-migration of all four age groups during the period 1955-1960.

c. Many more male than female out-migrants among old people during the period 1955-1960 (Detroit and Flint SMSA's).

d. Higher migration rate of female population than of young adults regardless of color (Detroit and Grand Rapids SMSA's).

D. Unique migration patterns exhibited in individual SMSA's.

a. The highest percent of migrants from different states mostly due to the non-whites (Flint SMSA).

b. The largest number of net in-migrants of males aged 20 to 24 and the largest number of net out-migrants of females of the same age group (Grand Rapids SMSA).

c. The excess of male net in-migration over female net in-migration (Jackson SMSA).

d. A larger net in-migration of males than of females between 25 years old and 34 years old (Jackson SMSA).

e. Continuous net out-migration after the age of 35 for males (Jackson SMSA).

f. Predominance of males among both in- and out-migrants (Jackson SMSA).

g. Population increase due to the highest net in-migration rate (Kalamazoo SMSA).

h. Net in-migration in all age groups between 1955 and 1960 (Kalamazoo SMSA).

i. Predominance of female migrants for both in-migration and out-migration (Kalamazoo SMSA).

j. Net out-migration for total male population (Lansing SMSA).

Thus, one can identify nine SMSA's with common attributes. Although there is some overlap in this classification, I will show how the groupings are similar, and how certain conditions affect certain sub-classifications. Arranged more simply, common migration patterns are shown by:

I) Ann Arbor SMSA, Kalamazoo SMSA, Lansing SMSA (special cases: Kalamazoo SMSA, Lansing SMSA)

II) Bay City SMSA, Muskegon-Muskegon Heights SMSA, Saginaw SMSA

III) Detroit SMSA, Flint SMSA, Grand Rapids SMSA (special cases: Flint SMSA, Grand Rapids SMSA)

IV) Jackson SMSA, a case to itself

Now, I intend to demonstrate the similarities within the groups and the differences between them concerning the characteristics of each SMSA.

Group I consists of SMSA's in which a large university is a prominent feature. As expected, occupational attainment is very high. Median school years completed for persons 25 years old and over in all SMSA's is much higher than the arithmetic mean for all SMSA's of Michigan (10.9). That is, median school years

completed (for persons 25 years old and over) in the Ann Arbor SMSA, in the Kalamazoo SMSA, and in the Lansing SMSA were 12.2, 11.7, and 12.0, respectively. Median school years completed were found to be near the mean in Group III and Group IV. The SMSA's which showed low median school years completed were Bay City (10.0), Muskegon-Muskegon Heights (10.4) and Saginaw (10.2). Thus, the SMSA's in Group II had particularly low educational attainment, lower than in any other group.

Also the distribution of the percent of persons 25 years old and over who completed high school or more showed patterns similar to that of the median school years completed. The highest proportions were found in Group I and the lowest proportions were found in Group II. Proportions near the mean were found in the Groups III and IV.

However, in regard to the percentage distribution of persons 25 years old and over who completed less than 5 years of school, expected patterns were found only in Group I. It seems that this measure varies more or less directly with the increase of the black population. However, this is not the case in the Bay City SMSA in which a very high percentage of less educated persons are found in spite of the lowest percentage of black population.

Group II was distinguished from the other groups, particularly in regard to income of families. At the same time this group of SMSA's showed the lowest educational attainment of all groups. Median income of the SMSA's in Group II were ranked as the lowest three ($6,041 in Bay City, $6,048 in Muskegon-Muskegon Heights and $5,983 in Saginaw). Moreover, these SMSA's were the only SMSA's in

which the percentages of families whose income was under $3,000 were higher than the percentages of families whose income was $10,000 and over.

In Bay City, Flint, Muskegon-Muskegon Heights, and Saginaw SMSA's, the proportions of persons engaged in manufacturing were higher than those engaged in white collar occupations. With the exception of the Flint SMSA, all SMSA's in Group II showed percentages in white collar occupations were less than those in manufacturing.

In Group I, the Kalamazoo SMSA was less striking than the Ann Arbor and Lansing SMSA's, in the difference between employment in manufacturing and employment in white collar occupations. We find greater employment in white collar occupations in the Ann Arbor and Lansing SMSA's; in the Kalamazoo SMSA we find greater employment in manufacturing. The only major difference in the occupational distribution between the Kalamazoo SMSA and the Ann Arbor and Lansing SMSA's was that the percentage of female operatives and kindred workers in Kalamazoo was about twice as great as in the Ann Arbor and Lansing SMSA's (See Appendix Table 17).

The distinctiveness of the Flint SMSA is clearly shown in Appendix Table 17: that is, the rates of employment as operatives and kindred workers for both sexes were very high. This was true also for non-white population.[23] These facts might explain the unique migration pattern of the Flint SMSA which was described

---

[23]U.S., Bureau of the Census, Characteristics of the Population: 1960, vol. 1, Part 24, Michigan, Table 78.

before; that is, the highest per cent of migrants from different states, mostly due to the non-whites.

Another characteristic for which Michigan SMSA's exhibited differences was the number of establishments with 20 or more employees, for nondurable goods industries and for durable goods industries.[24] Common patterns within the SMSA groups were not so strikingly exhibited as with the preceding characteristics. However, the most interesting applies to the Jackson and Kalamazoo SMSA's. Kalamazoo SMSA was the only SMSA in which the establishments of nondurable goods industries outnumbered those of durable goods industries; the latter accounted for more than 60% of all industries in all other SMSA's. In the Jackson SMSA, in contrast, the establishments of durable goods industries greatly outnumbered those of nondurable goods industries. That is, of all industries, about 81% was accounted for by durable goods industries.

While geographical features of the SMSA's might be expected to be associated with migration patterns, the results of our exploration were largely negative. As shown in Appendix Table 16, the geographic measures explored, i.e., distance between central cities, and size of central city do not yield clear-cut associations with particular migration patterns.

---

[24]Nondurable goods industries imply food and tobacco products; textile, apparel, and leather products; paper and printing; and chemicals, petroleum, rubber and plastics products. Durable goods industries contain lumber, wood products and furniture; stone, clay and glass products; primary and intermediate metal products; electrical and nonelectrical machinery; transportation and ordinance (including missiles), and instruments and miscellaneous products.

However, two other geographical variables do require some comment: access to large bodies of water, and location within an industrial corridor. Access to large bodies of water tends to emphasize fishing and shipping occupations that traditionally correlate with poor education and low income. Michigan is nearly completely surrounded by the Great Lakes, so that contact with them must be considered an important fact. Of the ten SMSA's, half are adjacent or near to a lake : Bay City, Detroit, Muskegon-Muskegon Heights, Grand Rapids (a consequence of having absorbed Ottawa County in 1967) and Saginaw (being adjacent to Bay City).[25] Thus, we see that all of Group II are SMSA's adjacent to a Great Lake, and that Group III includes two SMSA's that are adjacent.

An industrial corridor is an area, demographically sharply differentiated from adjacent areas, formed by the gradual fusion of two or more industrialized locations through railroad or other available transportation needed between those centers. Some area lying between two industrialized points can thus be expected, as time goes on, to change character from rural to industrial as the corridor takes shape. Such a change has taken place recently in Kalamazoo. It lies about half way between Detroit and Chicago, two notable centers of industrial activity.[26] The net in-migration rate is

---

[25]Grand Rapids SMSA is now considered to be located along the coast, since Ottawa County has been added in 1967.

[26]Harold C. Taylor, The Population of Kalamazoo County, Michigan, Estimates as of July 1, 1956 and Forecasts to 1975 (Kalamazoo: The W. E. Upjohn Institute for Community Research, 1956), p. 20.

remarkably high, so that the effect of the formation of an industrial corridor is comparable to the effect of student enrollment. Apart from adjacency to lakes and recent formation of an industrial corridor, no important geographical factors were identified. Thus, common or unique geographical features appear to be less significant than social and economic characteristics in relation to migration.

CHAPTER IV

SUMMARY AND CONCLUSIONS

This chapter is devoted to a summary of an analysis of migration to and from the SMSA's in the State of Michigan. We have shown that SMSA migration in Michigan is selective for age, sex, and color. Through the analysis of net migration (1950-1960 and 1955-1960) and in- and out-migration (1955-1960) for the ten SMSA's of Michigan, we can state the following in regard to selectivity by age, sex, and color:

1) Young adults in the age group between 15 and 34, particularly between 20 and 34, were more migratory than any other age groups.

2) In-migration to the SMSA's took place especially among the young adults, while out-migration from the SMSA's occurred mostly among the old people aged 65 years old and over.

3) Females were slightly more migratory than males.

4) In-migration to the SMSA's was more frequent for females, while out-migration from the SMSA's was more frequent for males.

5) Out-migrants greatly outnumbered in-migrants among white old people, but in-migrants outnumbered out-migrangs among non-white old people.

6) The sex selectivity among the non-whites was less striking than that among the whites.

Such generalizations concerning differential migration by age, sex, and color, for the SMSA's of Michigan may not, of course, be applicable to other regions. However, the main purpose of this

thesis was not to make generalizations. Rather, it was to find migration patterns which were shared (or unique) for the SMSA's of Michigan. In addition to general and shared patterns, we also found that some SMSA's had unique migration patterns.

The second part of this study, then, was based on the following hypothesis: that SMSA's having similar social and economic characteristics will exhibit similar migration patterns; those having unique characteristics will exhibit unique migration patterns.

Although the migration patterns investigated are limited to age, sex, and color, and although the communities selected here were the SMSA's of Michigan, some relationships between migration patterns and characteristics of the SMSA's emerged.

From the results of migration differentials by age, sex, and color, the following four groups of SMSA's in Michigan were formed:

Group I) Ann Arbor SMSA, Kalamazoo SMSA, and Lansing SMSA

Group II) Bay City SMSA, Muskegon-Muskegon Heights SMSA, and Saginaw SMSA

Group III) Detroit SMSA, Flint SMSA, and Grand Rapids SMSA

Group IV) Jackson SMSA

This grouping was formed according to the pattern of similarities (or uniqueness) exhibited through the analysis of several different sets of migration data. Thus, each group was similar, and each group had characteristics that contrasted with other groups. Perfect in group homogeneity was not found, of course, and certain differences may be found within a single group.

The aim of Chapter III was to find some characteristics within the SMSA's that were exhibited in common. The characteristics chosen represent selected social, economic, and locational factors relating to the SMSA's. They were:

1. Education of persons 25 years old and over.
2. The per cent distribution of employment in manufacturing and in white collar occupations.
3. The number of the establishments with 20 or more employees of nondurable goods industries and durable goods industries.
4. Income of families.
5. Geographic features.

The analysis of the characteristics showed that the influence of economic factors was particularly strong. The similarities and differences in economic factors predicted membership in the same or different group, as defined by migration pattern. Educational attainment too was closely related to the migration patterns formed.

However, as compared to social and economic characteristics, the geographic factors did not seem to be significantly related to particular migration patterns. Had this study not been limited to the SMSA's in a single state, the influence of geographic factors might have been more significant.

Migration patterns for communities, then, tend to be similar or different, depending upon the similarity or uniqueness of the characteristics of the communities. Therefore, we might say that if we find common migration patterns among some communities it is

not impossible to find some characteristics which would be common in those communities, and that if we find unique migration patterns in a community it is to be expected to find unique characteristic of the community. Moreover, if several migration differentials for two areas are known to be similar, other migration differentials will probably also be similar. However, the predictive power of the hypothesis would be strengthened, and the hypothesis further tested, by a wider study of migration patterns. In other words, the hypothesis stated may not be supported for migration in all places and at all times.

LITERATURE CITED

LITERATURE CITED

Beegle, J. Allan and John F. Thaden. Population Changes in Michigan, 1950-60. East Lansing: Michigan State University, 1960.

Bogue, Donald J. and Margaret J. Hagood. Differential Migration in the Corn and Cotton Belts. Subregional Migration in the United States, 1935-40, Vol. II, Scripps Foundation Studies in Population Distribution No. 6, 1953.

Bogue, Donald J. "Techniques and Hypotheses for the Study of Differential Migration," International Population Conference, Paper 114, 1961.

Civic Affairs Research, Inc. Anatomy of a Community: Characteristics of the People of the Muskegon County Area. Muskegon, 1968.

Clarke, John I. Population Geography. London: Pergamon Press, 1965.

Detroit City Plan Commission. The People of Detroit Master Plan Report. Detroit, 1946.

Freedman, Ronald. Recent Migration to Chicago. Chicago: The University Press, 1950.

Genesee County Metropolitan Planning Commission. People: Today and Tomorrow: Genesee County, Michigan. Flint, 1968.

Goldberg, David, Allen Feldt, and William J. Smit. Estimates of Population Change in Michigan, 1950-60. Ann Arbor: The University of Michigan, 1960.

Goldstein, Sidney. Patterns of Mobility: 1910-50. Philadelphia: University of Pennsylvania Press, 1958.

Hawley, Amos H. The Population of Michigan 1840 to 1960: An Analysis of Growth, Distribution and Composition. Ann Arbor: University of Michigan Press, 1949.

Hobbs, Albert H. Differentials in Internal Migration. Philadelphia: University of Pennsylvania Press, 1942.

Hodge, Leavy and Philip H. Hauser. The Challenge of America's Metropolitan Population Outlook, 1960 to 1985. New York: Frederik A. Praeger Inc., 1968.

Jansen, Clifford J. Readings in the Sociology of Migration. New York: Pergamon Press, 1970.

Michigan Department of Public Health. Michigan Population Handbook 1965. Detroit, 1965.

Moore, Jane. Cityward Migration. Chicago: The University of Chicago Press, 1938.

Oyler, Merton D. Fertility Rates and Migration of Kentucky Population 1920 to 1940, as Related to Communication, Income, and Education. Ph.D. thesis, University of Chicago, 1943.

Ravenstein, Ernest G. "The Laws of Migration," Journal of the Royal Statistical Society, 48 (June, 1885), pp. 167-235.

Sanford, Gilbert A. "Selective Migration in a Rural Alabama Community," American Journal of Sociology, 5 (October 1940), pp. 759-766.

Schmitt, Robert C. The Future Population of Metropolitan Flint. Ann Arbor: Institute for Human Adjustment, University of Michigan, 1947.

Taeuber, Conrad and Irene B. Taeuber. The Changing Population of the United States. New York: John Wiley & Sons, Inc., 1958.

Tayler, Harold C. The Population of Kalamazoo County, Michigan, Estimates as of July 1, 1956 and Forecasts to 1975. Kalamazoo: The W. E. Upjohn Institute for Community Research, 1956.

Thompson, Warren S. Migration within Ohio: 1935-40. Scripps Foundation Studies in Population Distribution, Scripps Foundation for Research in Population Problems, 1951.

Thornthwaite, Warren C. Internal Migration in the United States. Philadelphia: University of Pennsylvania Press, 1934.

U.S. Bureau of the Census. County and City Data Book: 1967. U.S. Government Printing Office, Washington, D.C., 1967.

_____. Population Characteristics. Current Population Reports, P-20. "Mobility of the Population of the United States," 57 (April, 1955), 61 (October, 1955), 73 (March, 1957), 82 (July, 1958), 104 (September, 1960), 141 (September, 1965), U.S. Government Printing Office, Washington, D.C.

U.S., Bureau of the Census. U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. I, Part 24. U.S. Government Printing Office, Washington, D.C., 1963.

_____. U.S. Census of Population: 1960. Migration between State Economic Areas. Final Report PC (2)-2E. U.S. Government Printing Office, Washington, D.C., 1967.

_____. U.S. Census of Population: 1960. Mobility for States and State Economic Areas. Final Report PC (2)-2B. U.S. Government Printing Office, Washington, D.C., 1963.

_____. U.S. Census of Population: 1960. State of Birth. Final Report PC (2)-2A. U.S. Government Printing Office, Washington, D.C., 1963.

U.S. Department of Agriculture. Net Migration of the Population, 1950-60 by Age, Sex, and Color. Population-Migration Report, Vol. I, Part 2. U.S. Government Printing Office, Washington, D.C., 1965.

APPENDIX

TABLE 1.--Net migration and population of Michigan SMSA's by age groups: 1950-1960.

SMSA \ Age in 1960	Net Migration					Population				
	All Ages	0-14	15-34	35-64	65+	All Ages	0-14	15-34	35-64	65+
Ann Arbor	7,104	-4,156	16,034	-3,957	-817	172,440	49,733	62,280	48,598	11,829
Bay City	282	910	-990	749	-387	107,042	37,391	27,442	33,467	8,742
Detroit	92,266	26,293	80,033	11,190	-25,250	3,762,360	1,236,203	950,049	1,306,793	269,315
Flint	26,713	4,596	15,193	8,265	-1,341	374,313	132,770	103,417	114,871	23,255
Grand Rapids	13,421	2,931	7,371	3,886	-767	363,187	122,407	93,120	114,137	33,523
Jackson	5,383	1,971	4,187	-89	-686	131,994	42,093	34,848	43,116	11,937
Kalamazoo	16,729	3,822	9,977	3,377	-447	169,712	54,637	48,454	52,484	14,137
Lansing	2,056	-1,641	6,772	-1,399	-1,676	298,949	97,977	88,959	88,625	23,388
Muskegon-Muskegon Hts	121	499	-756	982	-604	149,943	53,665	37,520	47,792	10,966
Saginaw	2,071	1,896	-43	1,067	-849	190,752	67,660	48,982	59,115	14,995
TOTAL	166,146	37,121	137,778	24,071	-32,824	5,720,692	1,894,536	1,495,071	1,908,998	422,087

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 2.--Percent distribution of residence in 1955 for Michigan SMSA's: 1960.

	Total population 5 years old and over	Same house (non-movers)	Different house in the U.S.					Abroad in 1955	Moved, residence in 1955 not reported
			Total	Same county	Different county				
					Total (% of population)	Within same state	From different state		
Ann Arbor	100%	39.9	56.1	48.4	51.6 (28.5)	56.9	43.1	2.2	0.8
Bay City	100	61.0	38.1	73.6	26.4 (10.0)	75.4	24.6	0.4	0.5
Detroit	100	52.8	44.6	72.8	21.2 (12.1)	64.1	35.9	1.0	1.6
Flint	100	52.0	46.2	78.2	21.8 (10.1)	51.9	48.1	0.6	1.2
Grand Rapids	100	53.6	44.5	75.2	24.8 (10.8)	58.8	41.2	1.0	0.9
Jackson	100	53.5	44.3	65.9	34.1 (15.1)	67.1	32.9	0.4	1.8
Kalamazoo	100	47.0	50.4	63.2	36.8 (18.5)	64.9	35.1	0.9	1.7
Lansing	100	49.1	48.5	55.6	44.4 (21.6)	70.6	29.4	0.9	1.5
Muskegon-Muskegon Hts	100	56.3	42.4	78.2	21.8 (9.4)	58.2	41.8	0.4	0.9
Saginaw	100	54.3	44.6	79.5	20.5 (9.2)	65.3	34.7	0.4	0.7

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24.

TABLE 3.--Percent distribution of residence in 1955 of white population for Michigan SMSA's: 1955-60.

	Total population 5 years old and over	Same house (non-movers)	Different house in the U.S.					Abroad in 1955	Moved, residence in 1955 not reported
			Total	Same county	Different county				
					Total (% of population)	Within same state	From different state		
Ann Arbor	100%	40.1	56.3	47.9	52.1 (29.3)	56.9	43.1	2.0	1.6
Bay City	100	61.1	38.0	73.8	26.2 (10.0)	75.9	24.1	0.4	0.5
Detroit	100	55.0	42.7	69.1	30.9 (13.2)	67.3	32.7	1.0	1.3
Flint	100	53.2	45.0	77.9	22.1 (9.9)	56.0	44.0	0.7	1.1
Grand Rapids	100	54.3	43.9	75.6	24.4 (10.7)	59.9	40.1	1.0	0.8
Jackson	100	54.2	43.8	67.6	32.4 (14.2)	66.8	33.2	0.5	1.5
Kalamazoo	100	47.3	50.1	63.2	36.8 (18.4)	65.8	34.2	0.9	1.7
Lansing	100	49.6	48.3	55.1	44.9 (21.7)	71.6	28.4	0.8	1.3
Muskegon-Muskegon Hts	100	57.2	41.5	76.8	23.2 (9.6)	60.8	39.2	0.5	0.8
Saginaw	100	56.5	42.5	78.7	21.3 (9.0)	70.1	29.9	0.4	0.6

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24.

TABLE 4.--Percent distribution of residence in 1955 of nonwhite population for Michigan SMSA's: 1955-60.

	Total population 5 years old and over	Same house (non-movers)	Different house in the U.S.					Abroad in 1955	Moved, residence in 1955 not reported
			Total	Same county	Different county				
					Total (% of population)	Within same state	From different state		
Ann Arbor	100%	36.7	54.1	65.1	34.9 (18.9)	56.0	44.0	5.3	3.9
Bay City	100	49.6	49.5	58.7	41.3 (20.5)	36.6	63.4	0.9	0.0
Detroit	100	40.5	55.8	89.6	10.4 (5.8)	22.1	77.9	0.4	3.3
Flint	100	39.9	57.7	80.2	19.8 (11.4)	17.4	82.6	0.1	2.3
Grand Rapids	100	36.4	59.5	76.6	23.4 (13.9)	38.5	61.5	1.0	3.1
Jackson	100	42.5	51.5	58.5	41.5 (30.1)	45.2	44.8	0.2	5.8
Kalamazoo	100	37.5	58.2	64.5	35.5 (20.7)	41.1	58.9	0.8	3.5
Lansing	100	34.0	55.4	64.9	35.1 (19.4)	31.1	68.9	3.4	7.1
Muskegon-Muskegon Hts	100	46.6	51.7	84.3	15.7 (8.1)	24.9	75.1	0.2	1.5
Saginaw	100	33.1	64.9	83.8	16.2 (10.5)	25.7	74.3	0.2	1.8

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24; and U.S. Census of Population: 1960. Final Report PC(2)-2B.

TABLE 5.--Number and proportion of in-migrants to and of out-migrants from Michigan SMSA's by distance migrated: 1955-1960.

	In-migrants				Out-migrants			
	Total	Within Same State	From Contiguous State	From non-Contiguous State	Total	To Same State	To Contiguous State	To non-Contiguous State
Ann Arbor	43,473 (100%)	24,735 (56.9)	3,535 (8.1)	15,203 (35.0)	34,196 (100)	15,658 (45.8)	2,786 (8.1)	15,752 (46.1)
Bay City	9,339 (100)	7,043 (75.4)	633 (6.8)	1,663 (17.8)	9,857 (100)	6,371 (64.6)	494 (5.1)	2,992 (30.3)
Detroit	196,244 (100)	53,183 (27.1)	26,353 (13.4)	116,708 (59.5)	336,183 (100)	82,077 (24.4)	36,679 (10.9)	217,427 (64.7)
Flint	32,409 (100)	16,810 (51.9)	2,138 (6.6)	13,461 (41.5)	48,046 (100)	21,474 (44.7)	3,255 (6.8)	23,317 (48.5)
Grand Rapids	34,327 (100)	20,178 (58.8)	2,928 (8.5)	11,221 (32.7)	40,388 (100)	21,504 (53.2)	3,245 (8.1)	15,639 (38.7)
Jackson	17,563 (100)	11,779 (67.1)	1,373 (7.8)	4,411 (25.1)	15,987 (100)	8,380 (52.4)	1,490 (9.3)	6,117 (38.3)
Kalamazoo	27,663 (100)	17,948 (64.9)	2,485 (9.0)	7,230 (26.1)	20,156 (100)	10,321 (51.2)	1,773 (8.8)	8,062 (40.0)
Lansing	43,359 (100)	26,733 (61.6)	3,738 (8.6)	12,888 (29.8)	42,348 (100)	22,318 (52.7)	3,231 (8.6)	16,799 (39.7)
Muskegon-Muskegon Hts	12,356 (100)	7,197 (58.2)	5,159 (41.8)					
Saginaw	15,125 (100)	9,884 (65.3)	1,010 (6.7)	4,231 (28.0)	18,956 (100)	10,856 (57.3)	1,451 (7.6)	6,649 (35.1)

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24; and U.S. Census of Population: 1960. Final Report PC(2)-2B.

TABLE 6.--Net migration by age groups and sex: 1955-1960.

Age in 1960 \ SMSA	Ann Arbor	Bay City	Detroit	Flint	Grand Rapids	Jackson	Kalamazoo	Lansing	Saginaw
Total									
Total, 5 years old and over	9,277	-518	-139,939	-15,637	-6,061	1,576	7,507	1,011	-3,831
5-14	-2,015	247	-24,969	-3,959	-1,728	108	688	-1,370	-505
15-34	11,887	-892	-53,057	-6,425	-1,910	1,427	6,362	4,575	-2,194
35-64	-489	150	-49,753	-4,223	-2,312	415	436	-1,520	-848
65+	-106	-23	-12,160	-1,028	-271	-374	21	-674	-284
Male									
Total, 5 years old and over	4,824	-538	-83,929	-9,148	-3,804	1,823	3,459	24	-2,495
5-14	-900	38	-13,162	-2,095	-858	48	530	-793	-451
15-34	6,045	-559	-35,683	-3,921	-1,632	1,261	2,754	2,161	-1,388
35-64	-167	31	-27,383	-2,449	-1,073	666	201	-979	-538
65+	-154	-48	-7,701	-683	-141	-152	-26	-365	-118
Female									
Total, 5 years old and over	4,453	20	-56,010	-6,489	-2,257	-247	4,048	987	-1,336
5-14	-1,115	209	-11,807	-1,866	-870	60	158	-577	-154
15-34	5,842	-333	-17,374	-2,504	-278	166	3,608	2,414	-806
35-64	-322	119	-22,370	-1,774	-1,239	-251	235	-541	-310
65+	48	25	-4,459	-345	-130	-222	47	-309	-66

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24; and U.S. Census of Population: 1960. Final Report PC(2)-2B.

TABLE 7.--Net migration rate of Michigan SMSA's by age: 1950-1960.

SMSA	All Ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34	
Ann Arbor	4.3	-4.8	-9.9	-8.9	63.2	185.0	33.6	-35.4	
Bay City	0.3	2.6	3.2	1.5	-5.2	-13.2	-2.7	9.4	
Detroit	2.5	-0.1	2.8	4.7	-1.6	-0.0	24.1	16.8	
Flint	7.7	-3.1	6.8	10.9	5.2	10.6	32.9	22.4	
Grand Rapids	3.8	0.3	3.5	4.1	6.0	6.9	12.5	9.7	
Jackson	4.3	2.5	5.9	7.0	2.1	4.6	29.5	22.0	
Kalamazoo	10.9	4.7	9.6	8.8	32.2	53.8	23.8	1.1	
Lansing	0.7	-2.7	-0.5	-1.2	20.7	36.4	4.6	-19.7	
Muskegon-Muskegon Heights	0.1	0.5	0.7	1.8	-5.6	-18.0	2.2	18.5	
Saginaw	1.1	1.5	3.6	3.9	-6.0	-13.2	7.7	14.6	

	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
Ann Arbor	-26.2	-8.1	4.0	5.3	2.6	2.0	-7.2	-6.9	-5.1
Bay City	3.4	2.7	3.3	1.0	1.2	0.6	-2.4	-1.6	-8.0
Detroit	5.6	2.1	2.1	-0.3	-2.6	-5.7	-9.9	-10.8	-3.4
Flint	13.7	9.6	9.4	6.5	2.9	-1.0	-7.9	-6.9	-0.5
Grand Rapids	5.7	3.5	3.6	4.2	1.5	1.4	-1.6	-2.5	-2.4
Jackson	3.2	-0.6	0.2	-1.1	-3.7	-0.4	-7.7	-5.2	-3.0
Kalamazoo	9.6	9.0	8.3	4.4	5.4	1.8	-2.3	-3.6	-3.1
Lansing	-8.2	-0.4	1.7	0.6	1.4	-1.0	-8.0	-5.9	-5.7
Muskegon-Muskegon Heights	5.8	1.3	1.5	0.0	2.0	0.7	-3.7	-8.2	-4.1
Saginaw	2.6	1.2	2.8	1.6	2.2	-0.1	-5.4	-3.5	-6.6

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 8a.--Male net migration and male population of Michigan SMSA's by age groups: 1950-1960.

Age in 1960 / SMSA	Net Migration					Population				
	All Ages	0-14	15-34	35-64	65+	All Ages	0-14	15-34	35-64	65+
Ann Arbor	2,232	-2,119	7,703	-2,920	-432	86,525	25,411	31,997	24,109	5,008
Bay City	319	522	-577	527	-153	52,830	19,102	13,174	16,651	3,908
Detroit	31,455	13,494	25,481	8,343	-15,863	1,857,759	628,914	450,946	649,864	128,035
Flint	12,990	2,463	6,553	4,865	-891	186,352	67,643	50,284	57,735	10,690
Grand Rapids	5,804	1,496	2,498	2,365	-555	176,666	62,306	44,095	55,589	14,676
Jackson	2,779	1,000	2,986	-747	-460	67,756	21,403	18,469	22,553	5,331
Kalamazoo	7,894	1,957	4,540	1,748	-351	82,960	27,854	23,344	25,646	6,116
Lansing	-56	-856	2,808	-1,137	-871	148,148	49,798	44,466	43,502	10,382
Muskegon-Muskegon Hts	238	329	-558	832	-365	74,060	27,252	17,884	23,851	5,073
Saginaw	636	813	-488	712	-401	94,203	34,358	23,450	29,616	6,779
TOTAL	64,291	19,099	50,946	14,588	-20,342	2,827,259	964,041	718,109	949,116	195,993

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 8b.--Female net migration and female population of Michigan SMSA's by age groups: 1950-1960.

SMSA \ Age in 1960	Net Migration					Population				
	All Ages	0-14	15-34	35-64	65+	All Ages	0-14	15-34	35-64	65+
Ann Arbor	4,872	-2,037	8,331	-1,037	-385	85,915	24,322	30,283	24,489	6,821
Bay City	-37	388	-413	222	-234	54,212	18,289	14,268	16,816	4,839
Detroit	60,811	12,799	54,552	2,847	-9,387	1,904,601	607,289	499,103	656,929	141,280
Flint	13,723	2,133	8,640	3,400	-450	187,961	65,127	53,133	57,136	12,565
Grand Rapids	7,617	1,435	4,873	1,521	-212	186,521	60,101	49,025	58,548	18,847
Jackson	2,604	971	1,201	658	-226	64,238	20,690	16,379	20,563	6,606
Kalamazoo	8,835	1,865	5,437	1,629	-96	86,752	26,783	25,110	26,838	8,021
Lansing	2,112	-785	3,964	-262	-805	150,801	48,179	44,493	45,123	13,006
Muskegon-Muskegon Hts	-117	170	-198	150	-239	75,883	26,413	19,636	23,941	5,893
Saginaw	1,435	1,083	445	355	-448	96,549	33,302	25,532	29,499	8,216
TOTAL	101,855	18,022	86,832	9,483	-12,482	2,893,433	930,495	776,962	959,892	226,094

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 9.--Net migration rate of Michigan SMSA's by age and sex: 1950-1960

SMSA	All Ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34
Male								
Ann Arbor	2.6	-4.9	-9.1	-9.6	58.3	191.6	41.9	-39.7
Bay City	0.6	3.6	3.1	1.5	-8.7	-18.9	0.4	16.0
Detroit	1.7	0.1	2.8	4.4	-5.7	-10.8	23.0	20.5
Flint	7.5	-3.0	6.7	11.5	1.2	0.6	35.7	25.4
Grand Rapids	3.4	0.6	3.2	4.1	0.9	-4.0	14.1	14.6
Jackson	4.3	2.1	5.7	7.7	-0.0	4.2	50.9	30.4
Kalamazoo	10.5	4.9	9.5	8.8	20.4	44.6	33.6	4.6
Lansing	0.0	-2.9	-0.6	-0.9	17.4	34.4	9.2	-23.1
Muskegon-Muskegon Heights	0.3	0.4	0.9	2.7	-9.0	-25.2	3.7	29.6
Saginaw	0.7	1.1	2.4	4.3	-9.8	22.9	4.6	1.5
Female								
Ann Arbor	6.0	-4.7	-10.7	-8.2	68.1	178.3	25.1	-30.0
Bay City	-0.0	1.6	3.3	1.6	-1.8	-7.6	-5.4	3.8
Detroit	3.3	-0.3	2.7	5.1	2.4	10.7	25.1	13.4
Flint	7.9	-3.2	6.9	10.2	9.3	20.3	30.3	19.4
Grand Rapids	4.3	0.0	3.8	4.2	11.2	17.7	11.0	5.4
Jackson	4.2	2.9	6.1	6.2	4.3	5.0	10.0	13.0
Kalamazoo	11.3	4.5	9.7	8.9	44.8	63.1	15.5	-2.0
Lansing	1.4	-2.5	-0.4	-1.4	24.2	38.5	0.2	-16.1
Muskegon-Muskegon Heights	-0.1	0.6	0.6	0.8	-2.3	-10.8	0.8	9.7
Saginaw	1.5	2.0	4.8	3.6	-2.0	-2.8	5.8	7.4

TABLE 9.--continued

	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
Male									
Ann Arbor	-32.4	-10.6	2.5	5.5	1.1	3.3	-7.2	-8.6	-8.0
Bay City	5.3	3.7	4.3	1.8	1.6	1.0	-1.2	-0.7	-8.9
Detroit	6.7	2.5	2.4	-0.0	-2.0	-5.7	-11.6	-14.2	-5.0
Flint	16.2	11.8	10.0	8.6	3.1	-0.0	-10.2	-10.0	-1.1
Grand Rapids	7.4	3.7	3.4	4.5	3.3	3.6	-2.0	-4.3	-4.7
Jackson	0.0	-3.7	-2.5	-5.0	-8.1	-0.2	-8.1	-8.3	-7.1
Kalamazoo	8.8	10.7	8.9	5.5	4.8	2.4	-4.8	-6.9	-4.5
Lansing	-11.9	-0.9	1.6	-0.3	2.1	0.2	-8.5	-7.5	-6.8
Muskegon-Muskegon Heights	9.4	2.5	3.3	-1.0	5.0	0.8	-4.5	-10.5	-5.6
Saginaw	4.6	1.5	4.0	1.2	2.3	-0.3	-5.0	-1.7	-9.4
Female									
Ann Arbor	-18.7	-5.4	5.7	5.1	4.1	0.9	-7.2	-5.5	-3.3
Bay City	1.7	1.7	2.3	0.2	0.9	0.3	-3.4	-2.3	-7.4
Detroit	4.6	1.7	1.9	-0.6	-3.2	-5.8	-8.1	-7.2	-2.1
Flint	11.2	7.7	8.9	4.4	2.6	-2.0	-5.7	-4.0	-0.0
Grand Rapids	4.1	3.3	3.8	4.0	-0.1	-0.5	-1.3	-0.9	-0.8
Jackson	7.2	3.0	3.6	3.5	1.2	-0.6	-7.3	-2.4	-0.0
Kalamazoo	10.3	7.3	7.7	3.3	6.1	1.3	-0.2	-0.9	-2.0
Lansing	-4.2	0.0	1.8	1.6	0.8	-2.2	-7.6	-4.6	-4.8
Muskegon-Muskegon Heights	2.6	0.2	-0.3	1.0	-0.9	0.6	-2.9	-6.1	-2.9
Saginaw	0.7	0.9	1.6	2.0	2.2	-0.0	-5.7	-5.0	-4.5

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 10.--Net migration of white population for seven SMSA's of Michigan by age groups and sex: 1950-1960.

	Ann Arbor	Detroit	Flint	Grand Rapids	Jackson	Muskegon-Muskegon Heights	Saginaw	Total
Male								
All Ages	2,161	-6,234	6,249	3,708	1,759	-619	-1,556	5,468
0-14	-1,848	1,843	579	817	809	85	-49	2,236
15-34	7,002	9,245	3,437	1,635	1,802	-942	-1,455	20,724
35-64	-2,611	-1,037	3,150	1,862	-447	627	323	1,867
65+	-382	-16,285	-917	-606	-405	-389	-375	-19,359
Female								
All Ages	4,862	13,005	6,886	5,189	2,133	-1,080	-1,027	29,968
0-14	-1,823	601	204	752	816	-153	218	615
15-34	7,972	29,580	5,151	3,730	975	-726	-762	45,920
35-64	-966	-6,405	2,079	984	556	67	-16	-3,701
65+	-321	-10,771	-548	-277	-214	-268	-467	-12,866
TOTAL	7,023	6,771	13,135	8,897	3,892	-1,699	-2,583	35,436

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 11.--Net migration of non-white population for seven SMSA's of Michigan by age groups and sex: 1950-1960.

	Ann Arbor	Detroit	Flint	Grand Rapids	Jackson	Muskegon-Muskegon-Heights	Saginaw	Total
Male								
All Ages	71	37,689	6,741	2,096	1,020	857	2,192	50,666
0-14	-271	11,651	1,884	679	191	244	862	15,240
15-34	701	16,236	3,116	863	1,184	384	967	23,451
35-64	-309	9,380	1,715	503	-300	205	389	11,583
65+	-50	422	26	51	-55	24	-26	392
Female								
All Ages	10	47,806	6,837	2,428	471	963	2,462	60,977
0-14	-214	12,198	1,929	683	155	323	865	15,939
15-34	359	24,972	3,489	1,143	226	528	1,207	31,924
35-64	-71	9,252	1,321	537	102	83	371	11,595
65+	-64	1,384	98	65	-12	29	19	1,519
TOTAL	81	85,495	13,578	4,524	1,491	1,820	4,654	111,643

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 12.--Net migration rate of male population of seven SMSA's of Michigan by age and color: 1950-1960.

SMSA	All Ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34
White								
Ann Arbor	2.8	-4.9	-9.0	-8.4	64.4	200.3	37.2	-42.6
Detroit	-0.3	-0.4	0.6	1.3	-8.3	-13.7	17.9	16.7
Flint	3.9	-4.0	2.6	7.0	-1.8	-4.7	24.3	17.6
Grand Rapids	2.2	0.2	2.0	2.2	-0.8	-5.8	11.4	12.9
Jackson	2.9	1.7	4.5	7.0	-2.0	-3.3	34.4	27.1
Muskegon-Muskegon Heights	-0.8	0.2	0.0	0.9	-11.0	-27.1	0.7	27.2
Saginaw	-1.7	0.1	-0.8	0.4	-12.3	-26.1	3.3	16.3
Non-white								
Ann Arbor	1.1	-4.6	-9.6	-20.8	3.6	97.6	117.0	5.0
Detroit	15.9	3.1	15.5	25.0	13.7	11.7	63.6	47.5
Flint	57.4	4.8	55.3	84.9	58.7	106.1	266.4	149.9
Grand Rapids	39.2	8.3	32.6	66.8	69.6	64.3	132.7	68.1
Jackson	25.9	11.7	37.7	30.9	74.8	226.4	441.9	57.7
Muskegon-Muskegon Heights	15.4	2.0	8.2	25.3	22.6	11.8	64.9	61.8
Saginaw	29.8	8.3	32.9	55.5	32.9	25.7	128.1	98.3

TABLE 12.--continued.

SMSA	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
White									
Ann Arbor	-32.9	-9.0	2.8	5.2	1.1	3.5	-5.9	-9.1	-7.6
Detroit	4.8	0.9	1.2	-1.1	-3.2	-7.0	-12.8	-15.7	-6.2
Flint	10.8	8.0	7.0	6.9	2.6	-1.2	-10.6	-11.0	-1.2
Grand Rapids	6.3	3.1	2.2	3.7	2.5	3.1	-2.3	-4.5	-5.5
Jackson	1.5	-2.0	-1.6	-3.8	-7.4	-0.0	-6.8	-7.7	-7.2
Muskegon-Muskegon Heights	8.6	1.1	2.2	-1.0	5.3	0.3	-4.8	-11.3	-6.7
Saginaw	2.7	0.0	2.2	0.2	1.8	-0.0	-4.7	-1.4	-9.4
Non-white									
Ann Arbor	-27.2	-24.4	-0.4	9.0	1.3	1.2	-24.7	-2.0	-14.0
Detroit	18.9	12.4	9.9	6.8	7.4	6.2	0.4	5.6	9.1
Flint	96.8	63.5	55.6	36.2	10.8	24.9	-0.8	24.5	3.0
Grand Rapids	40.8	21.2	46.0	33.6	29.3	27.1	12.3	3.8	44.0
Jackson	-10.5	-17.7	-11.7	-19.8	-17.1	-5.4	-36.1	-24.9	-3.7
Muskegon-Muskegon Heights	18.9	18.3	15.1	-0.6	0.0	9.7	3.8	11.1	35.7
Saginaw	23.5	17.9	26.4	14.5	7.5	-3.6	-8.8	-12.0	-9.0

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 13.--Net migration rate of female population of seven SMSA's of Michigan by age and color: 1950-1960.

SMSA	All Ages	0-4	5-9	10-14	15-19	20-24	25-29	30-34
White								
Ann Arbor	6.5	-4.3	-10.7	-8.0	74.1	192.9	24.2	-31.9
Detroit	0.8	-1.1	0.0	2.0	-0.8	5.9	18.3	9.2
Flint	4.2	-4.2	2.2	5.4	5.2	12.1	19.8	12.8
Grand Rapids	3.0	-0.6	2.7	2.5	9.6	15.1	7.4	3.4
Jackson	3.6	2.8	5.3	5.1	3.5	3.2	8.1	12.3
Muskegon-Muskegon Heights	-1.4	-0.0	-0.7	-1.0	-4.0	-13.9	-2.9	6.4
Saginaw	-1.1	0.9	1.8	-0.5	-4.9	-7.8	-1.5	2.3
Non-white								
Ann Arbor	0.2	-8.7	-10.0	-9.3	7.6	54.1	37.2	-1.7
Detroit	19.6	3.2	17.2	25.1	25.5	44.4	72.8	39.4
Flint	58.6	4.0	60.5	85.1	87.3	175.8	239.7	120.5
Grand Rapids	44.3	12.0	30.5	60.9	77.8	114.1	146.6	66.3
Jackson	22.9	5.4	25.2	33.6	31.6	68.7	67.9	36.0
Muskegon-Muskegon Heights	17.0	6.3	12.5	22.9	25.0	38.9	59.0	54.5
Saginaw	35.1	9.6	31.7	60.3	47.9	93.6	123.4	66.4

TABLE 13.--continued

SMSA	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
White									
Ann Arbor	-18.9	-5.5	4.9	5.6	4.9	0.4	-6.2	-4.9	-2.9
Detroit	2.7	0.4	0.7	-2.0	-4.7	-7.6	-9.8	-9.1	-2.9
Flint	7.4	5.2	6.9	3.1	1.1	-2.9	-7.1	-4.9	-0.4
Grand Rapids	2.9	2.1	2.6	3.6	-0.7	-1.0	-1.7	-1.4	-1.1
Jackson	6.6	2.6	3.2	2.7	1.3	-0.9	-6.9	-2.3	-0.3
Muskegon-Muskegon Heights	1.9	-0.4	-0.1	1.0	-1.2	0.4	-4.2	-6.0	-3.2
Saginaw	-1.8	-0.5	0.7	2.3	0.9	-0.8	-6.3	-5.4	-4.6
Non-white									
Ann Arbor	-16.9	-4.6	15.6	-2.0	-6.8	8.9	-22.0	-15.3	-13.0
Detroit	15.9	9.7	9.0	9.2	8.8	11.6	11.7	17.9	7.4
Flint	66.9	43.3	41.1	29.3	32.2	19.2	30.5	23.7	12.3
Grand Rapids	36.9	44.6	47.2	19.3	26.7	19.0	20.6	37.9	18.8
Jackson	25.8	16.0	13.7	27.7	-1.9	11.8	-25.3	-7.4	13.3
Muskegon-Muskegon Heights	9.9	7.9	-2.9	1.3	4.4	6.8	45.9	-9.0	11.5
Saginaw	32.2	20.0	14.4	-1.8	25.0	17.2	11.8	12.7	0.0

Source: Population-Migration Report, Vol. I, Part 2, 1965; and U.S. Census of Population: 1960.

TABLE 14.--Number and proportion of in-migrants to and of out-migrants from Michigan SMSA's by age groups: 1955-1960.

Age in 1960 \ SMSA	Ann Arbor	Bay City	Detroit	Flint	Grand Rapids	Jackson	Kalamazoo	Lansing	Saginaw
In-migrants									
Total, 5 years old and over	43,473 (100%)	9,339 (100%)	196,244 (100%)	32,409 (100%)	34,327 (100%)	17,563 (100%)	27,663 (100%)	43,359 (100%)	15,125 (100%)
5-14	5,418 (12.5%)	2,400 (25.7%)	45,081 (23.0%)	7,922 (24.4%)	747 (21.8%)	3,675 (20.9%)	5,418 (19.6%)	8,038 (18.5%)	3,813 (25.2%)
15-34	30,066 (69.1%)	4,011 (42.9%)	93,519 (47.7%)	15,938 (49.2%)	16,943 (49.4%)	8,293 (47.2%)	15,628 (56.5%)	26,223 (60.5%)	6,989 (46.2%)
35-64	6,908 (15.9%)	2,459 (26.3%)	48,804 (24.8%)	7,170 (22.1%)	7,941 (23.1%)	4,876 (27.8%)	5,546 (20.0%)	7,709 (17.8%)	3,629 (24.0%)
65+	1,081 (2.5%)	469 (5.0%)	8,840 (4.5%)	1,379 (4.3%)	1,972 (5.7%)	719 (4.1%)	1,071 (3.9%)	1,389 (3.2%)	694 (4.6%)
Out-migrants									
Total, 5 years old and over	34,196 (100%)	9,857 (100%)	336,183 (100%)	48,046 (100%)	40,388 (100%)	15,987 (100%)	20,156 (100%)	42,348 (100%)	18,956 (100%)
5-14	7,433 (21.7%)	2,153 (21.8%)	70,050 (20.8%)	11,883 (24.8%)	9,199 (22.8%)	3,567 (22.3%)	4,730 (23.5%)	9,408 (22.2%)	4,418 (23.3%)
15-34	18,179 (53.2%)	4,903 (49.8%)	146,576 (43.7%)	22,363 (46.5%)	18,953 (46.9%)	6,866 (42.9%)	9,266 (46.0%)	21,648 (51.1%)	9,183 (48.4%)
35-64	7,397 (21.6%)	2,309 (23.4%)	98,557 (29.3%)	11,393 (23.7%)	10,253 (25.4%)	4,461 (28.0%)	5,110 (25.3%)	9,229 (21.8%)	4,477 (23.6%)
65+	1,187 (3.5%)	492 (5.0%)	21,000 (6.2%)	2,407 (5.0%)	1,983 (4.9%)	1,093 (6.8%)	1,050 (5.2%)	2,063 (4.9%)	878 (4.7%)

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24; and U.S. Census of Population: 1960. Final Report PC(2)-2B.

TABLE 15.--Sex-ratio of in-migrants to and of out-migrants from Michigan SMSA's by age groups: 1955-1960.

Age in 1960 \ SMSA	Ann Arbor	Bay City	Detroit	Flint	Grand Rapids	Jackson	Kalamazoo	Lansing	Saginaw
In-migrants									
Total, 5 years old and over	1,045	898	962	962	914	1,406	956	1,002	899
5-14	1,293	920	1,017	1,123	1,017	1,040	1,081	969	1,024
15-34	1,033	858	916	904	843	1,462	902	1,038	821
35-64	1,168	1,004	968	1,004	1,073	1,827	1,036	1,001	991
65+	628	651	539	646	626	775	782	628	656
Out-migrants									
Total 5 years old and over	1,035	1,012	1,132	1,088	1,000	1,189	997	1,049	1,038
5-14	992	1,068	1,051	1,123	1,012	1,049	934	1,019	1,168
15-34	1,031	967	1,215	1,056	1,001	1,144	1,011	1,072	977
35-64	1,108	1,084	1,089	1,129	1,023	1,258	1,053	1,101	1,099
65+	927	900	1,058	1,035	831	743	895	775	810

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, Part 24; and U.S. Census of Population: 1960. Final Report PC(2)-2B.

TABLE 16.--Characteristics of Michigan SMSA's: 1960.

	Ann Arbor	Bay City	Detroit	Flint	Grand Rapids
Land area (sq. miles)	711	447	1,952	1,300	1,420
Distance between central cities (miles)	within 50	within 50	50-100	within 50	50-100
Size of central city	under 100,000	under 100,000	1,000,000 and over	100,000 ~250,000	100,000 ~250,000
Geographic feature	other	coast	coast	other	other (coast)
Total Population	172,440	107,042	3,762,360	374,313	363,187
Population change: 1950-60					
Total (%)	28.1	21.0	24.7	35.7	27.6
Net migration (%)	5.3	0.3	3.1	8.9	5.9
Natural increase (%)	22.8	20.7	21.7	26.8	21.7
Population characteristics					
Urban (%)	70.4	68.0	94.7	71.5	74.0
Black (%)	6.8	0.5	14.9	8.9	3.2
65 years old and over (%)	6.9	8.2	7.2	6.5	9.0

TABLE 16.--continued

	Jackson	Kalamazoo	Lansing	Muskegon-Muskegon Heights	Saginaw
Land area (sq. miles)	698	562	1,702	501	814
Distance between central cities (miles)	within 50	within 50	within 50	within 50	within 50
Size of central city	under 100,000	under 100,000	100,000 250,000	under 100,000	under 100,000
Geographic feature	other	other	other	coast	coast
Total Population	131,994	169,712	298,712	149,943	190,752
Population change: 1950-60					
Total (%)	22.3	33.9	22.4	23.4	24.3
Net migration (%)	5.0	13.2	0.8	0.1	1.4
Natural increase (%)	17.3	20.7	21.6	23.3	22.9
Population characteristics					
Urban (%)	57.6	70.2	67.3	67.0	69.2
Black (%)	5.6	3.4	2.5	8.4	9.8
65 years old and over (%)	9.0	8.3	7.8	7.3	7.9

TABLE 16.--continued

	Ann Arbor	Bay City	Detroit	Flint	Grand Rapids
Education of persons 25 years old and over					
Median school years completed (years)	12.2	10.0	10.8	10.8	10.9
Completed less than 5 years of school (%)	3.4	5.4	6.7	5.2	3.6
Completed high school or more (%)	55.3	35.7	40.9	39.5	41.4
Employment					
in manufacturing (%)	23.3	40.8	40.7	48.9	37.5
in white collar occupations (%)	50.5	37.0	43.1	32.9	41.3
Establishments with 20 or more employees: 1963					
nondurable goods industries	23 (29.5%)	16 (30.2%)	524 (24.6%)	37 (39.2%)	117 (28.6%)
durable goods industries	55 (70.5%)	37 (69.8%)	1,606 (75.4%)	60 (60.8%)	296 (71.4%)
Income in 1959 of families					
Median income ($)	6,890	6,041	6,825	6,230	6,232
Under $3,000 (%)	12.1	15.0	13.5	14.0	13.0
$10,000 and over (%)	23.9	13.0	21.9	15.5	15.6

TABLE 16.--continued.

	Jackson	Kalamazoo	Lansing	Muskegon-Muskegon Heights	Saginaw
Education of persons 25 years old and over					
Median school years completed (years	10.9	11.7	12.0	10.4	10.2
Completed less than 5 years of school (%)	4.1	3.3	2.8	4.4	6.3
Completed high school or more (%)	41.1	47.8	50.1	36.3	36.6
Employment					
in manufacturing (%)	35.5	38.4	26.8	48.8	40.0
in white collar occupations (%)	39.6	42.7	44.7	36.1	37.7
Establishments with 20 or more employees: 1963					
nondurable goods industries	19 (18.7%)	65 (52.0%)	33 (30.9%)	26 (28.3%)	32 (36.4%)
durable goods industries	83 (81.3%)	60 (48.0%)	74 (69.1%)	66 (71.7%)	56 (63.6%)
Income in 1959 of families					
Median income ($)	6,421	6,526	6,177	6,048	5,983
Under $3,000 (%)	13.5	12.3	14.4	13.4	14.3
$10,000 and over (%)	16.1	17.5	16.4	12.8	13.7

Source: Bureau of the Census, County and City Data Book: 1967, pp. 432-450; and Amos H. Hawley, The Changing Shape of Metropolitan America (Glencoe: The Free Press, 1956), pp. 170-173.

TABLE 17.--Percent distribution of occupation group for Michigan SMSA's by sex: 1960.

	Ann Arbor	Bay City	Detroit	Flint	Grand Rapids
Male, employed total	100.0%	100.0	100.0	100.0	100.0
Professional, technical & kindred workers	23.6	8.4	11.9	7.8	9.6
Managers, officials, & propr's., exc. farm	9.1	10.0	9.0	6.9	11.1
Craftsmen, foremen, & kindred workers	17.0	24.7	22.1	23.9	22.1
Operatives & kindred workers	17.0	28.3	25.6	35.2	24.9
Others	33.3	28.6	31.4	26.2	32.3
Female, employed total	100.0%	100.0	100.0	100.0	100.0
Professional, technical & kindred workers	22.9	13.6	12.5	12.9	14.0
Clerical & kindred workers	29.9	25.1	34.4	26.4	29.6
Operatives & kindred workers	9.7	15.9	11.7	21.3	18.8
Service workers, except private household	17.6	16.9	14.9	14.1	13.2
Others	19.9	28.5	26.5	25.3	24.4

TABLE 17.--continued.

	Jackson	Kalamazoo	Lansing	Muskegon-Muskegon Heights	Saginaw
Male, employed total	100.0%	100.0	100.0	100.0	100.0
Professional, technical & kindred workers	9.5	12.4	12.8	8.7	8.3
Managers, officials, & propr's., exc. farm	9.4	10.3	9.3	8.4	8.9
Craftsmen, foremen, & kindred workers	21.2	20.7	20.0	24.3	22.5
Operatives, & kindred workers	26.4	22.9	22.0	31.7	30.3
Others	33.5	33.7	35.9	26.9	30.0
Female, employed total	100.0%	100.0	100.0	100.0	100.0
Professional, technical & kindred workers	13.6	15.0	14.8	13.6	14.3
Clerical and kindred workers	31.3	29.3	36.4	29.1	29.5
Operatives and kindred workers	15.4	16.5	8.0	13.8	12.8
Service workers, except private household	15.9	14.9	15.6	15.7	17.8
Others	23.8	24.3	25.2	27.8	25.6

Source: U.S. Census of Population: 1960. Characteristics of the Population: Michigan, Vol. 1, part 24.