SOCIAL AREA ANALYSIS AND TRANSPORTATION

PATTERNS: DALLAS, TEXAS, 1960

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CHAPTER I

FORMATION AND FRAMEWORK

The history and demographic data of most cities in the
United States cannot be traced prior to the nineteenth cen-
tury. This aspect of the American city makes it unique.
Cities in Europe are centuries old and national power grew
coextensively with their evolution. However in America the
scene was entirely different. National power in the United
States as well as industrialization preceded the development
and formulation of most of her cities.

Since 69.9 per cent (1960 census) of the people in the
United States live in urban areas, the study of the struc-
tural pattern of the city becomes important. If we are to
understand the existing social conditions as well as changes
occurring in society, the sociologist must study the city.
"Cities are the focal points in the occupation and utilization
of the earth by man."[1] In this study the importance of the
city, itself, or the metropolitan area as such is not being
studied. However those social conditions which are found
significant in this study may be applicable to similar cities
or metropolitan areas. Every city is unique in some respect
but what we can learn about one helps in studying another.

[1]Chauncy D. Harris and Edward L. Ullman, "The Nature of
Cities," Readings in Urban Geography, edited by Harold M.
Mayer and Clyde F. Kohn (Chicago, 1959), p. 277.

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The ecological study of the city has provided some important advances. "It facilitated the examination both of the external physical and internal social aspects of urban phenomena."[2] Human ecology is always concerned with collectivities. "While human ecology is concerned with the interrelationships among men in their spatial setting, urban ecology is specifically concerned with these interrelationships as they manifest themselves in the city." Ecological studies lead to understanding of the internal structure of the city--such structures as functions of various groups and the changes in population distribution.[3]

Many attempts have been made to describe the phenomenon of the city. The social characteristics have been described in terms of land use, area location, et cetera. The ecological study of the city is just as germane to the understanding of the characteristics of the city as any of the other types of studies. Apparently most studies describe the city structure in terms of its social and physical characteristics as well as the relationship between them. Shevky and Bell's typology, Social Area Analysis, will describe these social and physical characteristics and their relationships as well as any other typology that has been developed.

The effects of the material culture are felt in all aspects of the social life in a modern industrial society. If

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[2]Max Weber, The City (Glencoe, 1958), p. 30.

[3]Noel P. Gist and Sylvia Fleis Fava, Urban Society (New York, 1964), pp. 85-87.

we could visualize the removal of all automobiles, buses, trains, and other means of modern transportation, we could really see the effect upon the social life of the modern industrial society. Could the society survive? Certainly many drastic changes would take place.

One of the most unique and notable physical character-istics of the United States is found in the degree of the nation's mobility. Yet looking beyond the wheels that make the nation's people mobile is the way of life. The impact of the automobile has been felt in ways of living and earning a living.[4]

Transportation has always been a problem with man. As far back as human societies have record, there has existed a need for man to move from place to place in his society and to transport products to other areas. The patterns of transportation should reflect some of the social conditions existing within a given city.

The history of the United States attests to the impor-tance of transportation. The traffic problem in New York in 1883 became acute. The traffic problem was rapidly out-growing the construction of new roads, bridges, et cetera. The means of transportation were proving to be inadequate to move the urban masses. Weber said that the axial or skeletal

[4]Wilfred Owen, "Automotive Transport in the United States," The Changing Metropolis, edited by Frederick T. Tietze and James E. McKeown (Boston, 1964), p. 18.

structure of the city is determined by the routes of traffic and travel. "As the community grows there is a multiplication of houses and roads and a process of differentiation and segregation."[5]

The modern urbanized American spends considerable amount of time traveling to and from work. "Our mobility is the most obvious characteristic that distinguishes us from every other nation."[6] The urban American's travel pattern has become a regular feature of his industrialized society. It has been shown that the urban worker tends to minimize distance from home to work. The pattern of transportation tends to vary according to the socioeconomic characteristics of the population. One of the sociological implications intrinsic in the pattern of transportation is found in the words of Robert Park when he warned that the use of the automobile in modern civilizations is closely connected with vice. This observation by Parks demonstrates the expansion of the community in its social ties with other communities.[7]

Statement of Purpose

One would need only to be a casual observer to see that the American city is a hodge-podge of cultural groups of every age, sex, race, and ethnic differentiation. In recognizing the diversity in the social characteristics of the

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[5]Weber, op. cit., pp. 13-14, 25.

[6]Owen, op. cit., p. 174.

[7]Morton and Lucia White, The Intellectual Versus The City (Cambridge, 1962), p. 161.

of the city, Louis Wirth described the city as, "a mosaic of social worlds,"[8] In every city across the earth, "one finds the same phenonmenon, varying only in degree of heterogeneity and in the character of social patterns."[9] When the heterogeneity of the city is considered, the sociological implications which stem from this heterogeneity become important to understanding the social structure of the city. One of these sociological implications is intrinsic in the patterns of transportation. The time and cost factor becomes apparent when we consider the fact that "the average family or individual spends eleven cents for transportation out of every dollar spent for consumer goods and services."[10]

This is an ecological study of the structure and changing structure of parts of the city using the social area analysis' method of Shevky and Bell. The Shevky and Bell Social Area Analysis method

> is a classificatory schema designed to categorize
> census tract populations in terms of three basic
> factors--social rank, urbanization, and segre-
> gation. . . to demonstrate the use of the typology
> as an analytic framework for the comparative study
> of certain aspects of the social structure of
> American cities.[11]

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[8]Marvin B. Sussman, Community Structure and Analysis (New York, 1959), p. 63.

[9]Gist and Fava, op. cit., p. 488.

[10]Owen, op. cit., p. 177.

[11]Eshref Shevky and Wendell Bell, Social Area Analysis (Stanford, 1955), p. 2.
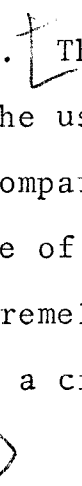
We will study the relationship between two variables:
social area characteristics and patterns of transportation.
Characteristics of social area--social rank, urbanization,
and segregation--will be treated as the independent vari-
albes. Patterns of transportation, utilization of available
means of transportation and distance traveled, will be
treated as the dependent variables. The basic selected unit
of analysis will be the census tract. Analyses of selected
1960 census tracts and their internal changes will be made.
We will study relationships between social structure, social
areas and transportation patterns. This social area analy-
sis with an ecological orientation will be applied to a
single city: Dallas, Texas.

Basic Hypothesis

As the characteristics of the social area vary, the
patterns of transportation, utilization of available means
and distance traveled, will also vary. A considerable amount
of this variation in transportation patterns can be explained
by the utilization of available means of transportation and
distance traveled. This is to say that the particular pat-
terns of transportation are related to the social character-
istics of the tract population as measured by the three fac-
tors: social rank, urbanization, and segregation.

The application of this typology, social area analy-
sis, to census tracts and comparable data available for the

analysis of an American city will permit further systematic accumulation of knowledge about the social differentiation and social stratification of the American city. The application of this typology, using social rank, urbanization, and segregation with the added variable of transportation patterns, will give an added needed refinement in ecological studies. Since transportation is a critical issue facing the modern metropolitan city, the patterns of transportation of any metropolitan area should lend support to the social conditions and patterns found within that city.

Shevky and Bell in their study, <u>Social Area Analysis</u>, said, that this type of study leads to the focusing on relationships of a different order than those considered by urban ecologists. They further stated that such a study is to demonstrate the use of the typology as an analytic framework for the comparative study of certain aspects of the social structure of the American city. They believe that such a study is extremely useful in better understanding the social structure of a city and the changing composition of the population.[12]

Arsdol, MacCannell and Schmid found in their study that the ecological structure of the large American city conformed to "a consistent, pervasive, and regular pattern in which the socio-economic status of the population was a

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[12]<u>Ibid</u>., pp. 1-5.

dominant feature." In their interpretation of the ecological structure they maintained that measures and dimensions were basically consistent with the dimensions described by Shevky, Tryan and their associates.[13]

Scott Greer used two census tracts (numbers 35 and 63) of the city of Los Angeles in his study. He used the data collected and analyzed by Shevky and Bell on Los Angeles. Greer pointed out that, "the Shevky-Bell typology of urban subareas is useful in this connection [his study], for it allows any census tract to be located in three different arrays." Greer used the Shevky-Bell typology to investigate empirically the complexity surrounding the nature of urban social behavior.[14]

According to Amos H. Hawley the "units of the community distribute themselves about a central point in relation to their ability to bear the time and cost of transportation to and from the central point." It would be conceivable then that patterns of transportation would be significantly different when compared with the social structure of a given area of the city. Hawley pointed out that the growth of the city is accompanied by extensions of its area and elaborations

[13]Maurice D. Van Arsdol, Jr., Earle H. MacCannell and Calvin F. Schmid, "The Ecology of the American City: Further Comparison and Validation of Generalizations," American Sociological Review, XXIII (August, 1958), p. 392.

[14]Scott Greer, "Urbanism Reconsidered: A Comparative Study of Local Areas in a Metropolis," American Sociological Review, XXI (February, 1956), pp. 19-25.

of its physical structure. This growth he said, "is closely geared to changes in both interregional and intraregional transportation." Modifications in the pattern of physical growth (such as population distribution) would effect transportation in that factors such as street layout, topography, and lands held out of use would need be considered.[15]

In his study of Spokane, Leo Reeder discovered that the patterns of transportation did not vary between the various socioeconomic groups. "No significant differences were found between those who walk or use public transportation and, on the other hand, those who use a private automobile. . . the lower as well as the upper, the automobile users were in the majority." However Reeder's findings were not in agreement with those of Carroll who found that lower income groups tend to live closer to work. However, Reeder did find that the analysis of the data by occupation and time (time was used here as an index to the distance between work place and residence) involved in getting to work showed statistically significant differences at the .01 level. The upper socioeconomic status occupations tend to spend less time traveling between their home and place of work than the lower occupational categories. Also, Reeder suggested that his study indicated that more research is needed in this field. "We

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[15]Amos H. Hawley, _Human Ecology, A Theory of Community Structure_, (New York, 1950), pp. 286, 403.

need research in cities of different sizes, of different
ecological organization or patterns, of different economic
bases and in different regions of the country."[16]

Definition of Operational Concepts

Characteristics of Social Area

We will make use of three factors for the study of
social differentiation and social stratification within
social areas using 1960 census tracts as the source of data.
These three factors are social rank, urbanization, and
segregation. When we speak of social area, we are referring
to those census tracts which are significantly similar in
their social structure. They may not give concrete entities
as to what social trends may develop, or that are developing,
but they will provide a reasonable measurement whereby a
better understanding of the social conditions of a city can
be obtained. If the social area analysis approach can give
the sociologist a deeper insight into the social structure
and/or conditions of the city, it is justifiable. No, it
will not give all the answers; however, neither will any
other approach give complete answers and some may even give
less than the social area analysis approach.

The more refined the delineation of social areas the
more effectively they can be used as a basis for comparative

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[16]Leo G. Reeder, "Social Differentials in Mode of
Travel, Time, and Cost in the Journey to Work," American
Sociological Review, XXI (February, 1956), pp. 56-63.

studies, either of areas within a particular city or be-
tween different cities. There is no reason why a typology
so based could not be utilized with specific changes in the
measureable indexes--for the study of cities with the city
as the unit of analysis, for the study of regions, or even
for the study of countries.

Social Rank.--The measuring of the social status of a
census tract area using occupation as the measuring device.

Occupation.--Occupation is used in most sociological
studies as the key variable in measuring social status.
Occupation will be used as a key variable in this study.
The occupational scale used is: professional, white collar
workers, blue collar workers, and manual laborers.

Urbanization.--The index for measuring the social
characteristics of the census tract area. The variables
used are fertility, women in the labor force; and sex
and age composition.

1. Fertility.--The number of children under five per
one thousand women in the fifteen to forty-four age group.

2. Women in the labor force.--The number of women in
the labor force per one thousand women of fourteen years of
age and over.

3. Sex and Age Composition.--The sex variable will be
the number of men per every thousand women. The age compo-
sition will be the differentiation found in four age groups:
0 to 14, 15 to 44, 45 to 64, and age 65 and over.

Segregation.--The measuring of white, non-white, and foreign born (per cent within social area) within census tracts to show the heterogeneity of the social tract area.

Patterns of Transportation

We will make use of two variabees for the study of differentiation in patterns of transportation with social areas using the 1960 census tracts as the source of data. These two variables are   utilization of available means of transportation and distance traveled.

Utilization of available means.--The use being made of the public transportation systems, and private means of transportation--private automobiles or car pools, walked-- in going to and from place of work.

Distance traveled.--Those who work inside the city. Those who work inside the Standard Metropolitan Statistical Areas (SMSA) and those outside the Standard Metropolitan Statistical Areas (SMSA).

Justification of Measures

Characteristics of the Social Area

Social rank.--Occupation--In most sociological studies where the individual's status and role is measured relative to his social position, occupation is the key variable. This means of measuring social status can be and has been used in almost all societies. "As Paul Hatt noted, the indices

developed by Warner and others to measure social status may
be generalized to the total society, since the various
methods correlate highly with one universal attribute--
occupation."[17]

Urbanization.--The index for measuring social character-
istics of the census tract. It is justified by the following
variables:

1. Fertility.--Fertility patterns tend to show changes
in the ways of living. Fertility reflects changes in the re-
lation of the population to the economy. Also, it reflects
changes in the function and structure of the family.

The child-woman ratio will provide a base for calcula-
tion of a birthrate. It provides reasons to believe that
social status and birthrates are interrelated, that is, under-
lying attitudes, values, and psychological characteristics
are shown.

Fertility rates can be used to measure differences in
fertility between different populations, e.g., residence
groups, races, and all other types of groups that can be
clearly distinguished in the census data.[18]

2. Women in labor force.--Women in the labor force will
reflect changes in the function and structure of the family.
The number of women in the labor force also reflects the
socioeconomic status of the population in the social area.

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[17]Greer, op. cit., p. 25.

[18]Warren S. Thompson and David T. Lewis, Population
Problems (New York, 1965), p. 241.

3. Sex and age composition.--Changes in sex and age
composition will show the trend in the population of the
social areas. This composition will provide some evidence
of the demographic diversity within the social area.

Segregation.--Segregation is used as an index to meas-
ure the degree of heterogeneity which exists in a given
social area. This index will show the dissimilarity in the
distribution of the population as to white, non-white, and
foreign born. The use of such demographic data in sociology
provides an objective way of measuring social conditions.
Shevky and Bell did not use the index of segregation as a
measurement to show the degree of heterogeneity in a social
area. They said that segregation reflects a "major trend
which significantly determined the present character of that
society. This trend is composed of changes in the composi-
tion of the population which are manifested by redistribution
of the population in space, alteration in the age and sex
composition, and the isolation of groups."[19]

The American city is a hodge-podge of cultural groups
of every age, sex, race, and ethnic differentiation. Since
the American city is such a hodge-podge of cultural and
ethnic groups, the segregation index will reflect the degree
of diversity in the race and ethnic groups between the
social areas.

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[19]Shevky and Bell, op. cit., p. 18.

The heterogeneity of the American city is a well established fact. The segregation measurement should show the degree of significance regarding the heterogeneity of the social area. By using the segregation variable to measure the degree of heterogeneity we should avoid some of the criticism given the social area analysis approach.[20] Living in the same census tract may not place whites and non-whites on an equal socio-economic basis but the per cent of segregation within said census tract where equal social characteristics are given will show some changes of that particular census tract and consequently the social area.

Transportation Patterns

Utilization of available means.--To determine transportation patterns within a given city, the available means of transportation become important in that social status affects how the available means of transportation are utilized. This utilization of available means of transportation reflects the ecological structure of the social areas.[21]

Distance traveled.--The distance traveled will be that distance from place of residence to place of work. The distance will reflect the socioeconomic characteristics of a a social area. City planners have long recognized that

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[20]Amos H. Hawley and Otis Dudley Duncan, "Social Area Analysis: A Critical Appraisal," Land Economics, XXXIII (1957), pp. 338.

[21]Gist and Fava, op. cit., pp. 211-214.

there is relationship between distance and socioeconomic characteristics.[22]

The application of such a typology will permit the further systematic accumulation of knowledge about the social differentiation in ecological studies and social stratification of the American city. It shows an extended use of the census tract data supplied by the United States Census Bureau.

Transportation patterns within social areas are related to the style of life in that given social area. This study will reflect the significance transportation patterns will have as they are related to the social structure of a social area.

City planners may obtain some help from such studies in solving such transportation problems as to what social areas are in need of better public transportation facilities. They may be better able to determine what areas need wider streets and freeways in order to move the traffic more efficiently.

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[22]Ibid., pp. 580-582.

CHAPTER II

SOCIAL RANKING

Shevky and Bell used social rank, urbanization, and
segregation to sociologically describe the census tracts.
Those census tracts in which these indices had a high
degree of correlation were constructed into Social Areas.
Their social rank was derived from three measures:
occupation, schooling, and rent.

The three indices used by Shevky and Bell in deter-
mining social ranking have been criticized as not being
valid correlated instruments. Others have maintained that
these indices were valid. In order to avoid these criti-
cisms some modifications have been made in determining
social ranking of the census tracts of Dallas.

Duncan criticized Shevky and Bell's "Social Area
Analysis," in that they combined occupation, rent, and
education into a single index. One of Duncan's criticisms
was, "among other things recent research shows that oc-
cupation and education do not always act in the same direc-
tion in their influence on urban residential patterns."[1]

Arsdol Jr., MacCannell, and Schmid in their original
study of twenty American cities with population between

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[1]Otis Dudley Duncan, "Review of Shevky and Bell,"
American Journal of Sociology, LXI (1955), pp. 84-85.

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200,000 to 500,000 concluded that the "social structure
of the urban community can be represented by status-value
ranking as determined by such factors as education, income,
and occupation." Their ecological study of these twenty
cities did lend support to the measures and dimensions
basically used by Shevky and associates to describe such
social structure.[2]

Greer's study of 1956 tends to support the Shevky-Bell
typology of urban subareas. Greer points out that the
Shevky-Bell typology "allows any census tract to be located
in three different arrays by means of three indices con-
structed from census data."[3]

Anderson and Egeland suggest that the Shevky-Bell
typology "should be modified somewhat, but in their present
form they appear to be sound first approximations. Thus,
it is possible today to compare the zonal and sector hypoth-
eses in terms of the Shevky-Bell indices with considerable
confidence that the results will have general significance."
One modification they suggested was the use of occupation
for measuring social rank. Their use of social rank was

[2]Maurice D. Van Arsdol, Jr., Earle H. MacCannel, and
Calvin F. Schmid, "The Ecology of the American City:
Further Comparison and Validation of Generalizations,"
American Sociological Review, XXIII (1958), pp. 392-401.

[3]Scott Greer, op. cit., pp. 19-25.

used as a concept of prestige value. This prestige value index was based primarily upon occupational position.[4]

In this study only occupation is used to derive social rank. Many variables could be used in constructing social rank; however, by and large, occupation is probably the best single criterion. "As Paul Hatt noted, the indices developed by Warner and others to measure social status may be generalized to the total society, since the various methods correlate highly with one universal attribute-- occupation."[5] In modern metropolitan areas such as Dallas, Texas, schooling and rent are not as significant as they once were in determining social rank. In modern societies occupations are closely related to the amount of schooling and will usually reflect the quality and/or quantity of education. The use of schooling or education was one of the criticisms Duncan made of Shevky and Bell in that occupation and education do not always act in the same direction.[6] Rent is not as significant in determining social rank as it was prior to the mass movement of the population to the metropolitan areas. According to Arthur May, housing or rent is more indicative of the earning power of the family

[4]Theodore R. Anderson and Janice A. Egeland, "Spatial Aspects of Social Area Analysis," American Sociological Review, XXVI (1961), pp. 392-398.

[5]Scott Greer, op. cit., pp. 19-25.

[6]Duncan, op. cit., pp. 84-85.

which is reflected in the occupational status of said family.[7] According to Hodge and Trieman, rental would not be as significant an index to measure social rank because "access to property and other forms of capital investments is open to all men, regardless of their station in life." They further revealed that rent and/or property ownership became more of a "dummy variable."[8]

Occupation has been shown to be the most reliable index in social ranking the population of any given area. Many indices have been used, such as rent, income, education, and place of residence. However, if all these indices give evidence to the same phenomenon with the occupational index being the highest, it would not be necessary to use all these measures unless there is some reason to believe that a bias has entered this particular study.

In almost every study occupation has been shown to be the best single variable to measure social rank. Inkeles and Rossi's study of six industrial countries pointed out that occupational prestige in these industrial countries became a strong measure of social ranking and suggested that this correlation was due to certain universal features of the industrial occupational system.[9]

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[7]Arthur A. May, "Appraising the Home," The Changing Metropolis, edited by Frederick T. Tietze and James E. McKeown (Boston, 1964), p. 28.

[8]Robert W. Hodge and Donald J. Treiman, "Class Identification in the United States," American Journal of Sociology, LXXVII (March, 1968), p. 541.

[9]Alex Inkeles and Peter H. Rossi, "National Comparisons of Occupational Prestige," Peter I. Rose, The Study of Society (New York, 1967), pp. 587-602.

Kahl and Davis computed the scores for nineteen different items in determining social stratification. They suggested that all items might be a different measure of one social variable. They did a factor analysis of the items to see if they could reveal whether there was one underlying variable or several. Their analysis revealed that occupational position was the number one underlying variable.[10]

One major advantage in the use of a single-item measure such as occupation, is the speed with which it enables research to proceed. This may also lead to substantial improvements or limitations in the measuring instrument. It has been shown that occupation will measure social rank by itself through factor analysis. Thus the use of the single item of occupation is used to measure social rank rather than a multiple-item measurement.[11]

Occupational indices become exceptionally advantageous in that it is relatively easy to ascertain a man's job. Most of the functionally significant social roles are defined as jobs; thus, they are positions in an occupational sphere. Occupations become advantageous as a single-item index in determining social class position in that a particular "type" of occupation usually requires a certain king or amount of education and usually determines their residual location.

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[10]Bernard Barber, _Social Stratification_ (New York, 1957), pp. 184-185.

[11]William J. Goode and Paul K. Hatt, _Methods in Social Research_ (New York, 1952), p. 209.

Whereas education and residential location within themselves may or may not determine one's occupation.[12]

Garbin and Bates in their study, "Occupational Prestige: An Empirical Study of its Correlates," suggest that the more complex a society becomes, it is characterized by greater heterogeneity and mobility of the population. Also the more likely that occupational identification will become progressively more significant as a pervasive value influencing human behavior. Thus a greater knowledge of the social ranking system is necessary in order to have a better understanding of human behavior.[13]

Duncan and Duncan's study found that the ecological approach to the study of urban stratification significantly parallels the differences found in residential distribution of occupational groups and social-economic status. They further state that, "Inconsistencies in the ranking of occupational groups according to residential patterns occur at points where there is evidence of status disequilibrium".[14]

According to Anderson and Egeland, measures based on occupation and education are not closely correlated to

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[12]Barber, op. cit., p. 171.

[13]Albeno P. Garbin and Frederick L. Bates, "Occupational Prestige: An Empirical Study of its Correlation," Social Forces, XL (December, 1961), pp. 131-136.

[14]Otis Dudley Duncan and Beverly Duncan, "Residential Distribution and Occupational Stratification," American Journal of Sociology, LX (1955), pp. 493-503.

measures based on income.[15] However, the mobility of a given
population can be determined by the change in occupational
assignment during the decade. The mobility patterns of
status groups can be described by studying this change in
occupational levels. Of course, the term mobility here refers
to the vertical movement of the population as to social
status rather than spatial movement.[16] Also, it is most
interesting to note the study by J. Michael Armer, "Inter-
society and Intrasociety Correlations of Occupational
Prestige," wherein he agrees with Inkeles and Rossi that
"occupational prestige systmes are shared in greater or les-
ser degree across all societies, whether industrialized or
not."[17]

The social pattern of any given area can be described
and analyzed by occupational distribution of the labor force.
This life pattern becomes more clearly defined when viewed
from the standpoint of age, sex, and "race" composition.
"The division of labor and social differences often rein-
force one another." Since social changes are reflected in
the occupational structure, the vertical movement of this
occupational structure is perhaps the most objective means
to measure the social status of any particular area. So,
then, the higher the percentage of the population falling

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[15]Anderson and Egeland, op. cit., pp. 392-398.

[16]Albert J. Reiss, Jr., "Occupational Mobility of
Professional Workers," American Sociological Review, XX
(1955), pp. 693-700.

[17]Hodge and Treiman, op. cit., p. 535.

into the professional category should indicate the life
style within that area as to social status. When the
other indices, urbanization and segregation, are correlated
with the occupational ranking, the social pattern of the
census tract will become even more significant. Census
tracts which are highly related on the various indices were
combined into larger areas which formed social areas. A
social area contains two or more census tracts of approxi-
mately the same characteristics. This combination is
significant in the understanding of the general social pat-
tern and condition of the population which makes up these
social areas.[18]

Occupational Scale

The occupational scale used in this study is: profes-
sional, white-collar workers, blue-collar workers, and
manual laborers. The occupational groups disregarded in
this analysis are those not reported in the United States
census tracts for Dallas. There are 192 Census Tracts in
Dallas County (1960 census) of which 174 are in the city of
Dallas with 18 being partly in the city and partly in the
county. In this study those census tracts which are com-
pletely within the city limits will be used. Also those
census tracts that are partly in the city will be used but
only that part that is within the city will be utilized.

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[18]Gist and Fava, op. cit., pp. 118, 188, 315, 326.

The United States census tracts of Dallas in 1960 lists

nine different occupational groupings. The nine groupings

listed for both male and female occupations by the Bureau

of Census are shown in Table I. In this study only four

groupings will be utilized by combining those listed by

the Census Bureau. This combination was arbitrarily grouped

as illustrated in Table I.

TABLE I

OCCUPATIONAL GROUPINGS AS LISTED BY
THE UNITED STATES CENSUS BUREAU
(1960) AND COMBINED
IN THIS STUDY

Census Tract Listing	The Four Categories Used
1. Professional, technical, and kindred workers.	1. Professional
2. Managers, officials, and proprietors, including farmers 3. Clerical and kindred workers 4. Sales workers.	2. White-collar workers
5. Craftsmen, foremen and kindred workers 6. Operatives and kindred workers 7. Private household workers 8. Service workers excluding households	3. Blue-collar workers
9. Laborers, except mining	4. Manual laborers

The occupational scale index was computed by calculating

the percentage of all workers in each occupational group.

Those occupations which were not reported were subtracted

from the total workers in that census tract. Each

occupational group was then arbitrarily assigned a number, one to four, upon their percentage basis. The professional occupational group is ranked highest and thus given a number one. The lowest ranking was the manual laborers which were given a number four. The white-collar occupational group was given a two whereas the blue-collar occupational group number three.

The percentages given to each occupational category was arbitrarily assigned upon the basis of one to one hundred per cent. When a census tract had as high as twenty-five per cent or above professional occupational populace, it was given the rank of one providing the white-collar worker group was as high as forty per cent. For example, census tract number ten contained the following occupational percentages: professional, 12.4; white-collar workers, 55.9; blue-collar workers, 30.2; and manual laborers, 1.5. This census tract was given the ranking of two on the basis that the white-collar occupational group contained more than fifty per cent. Also, the professional occupational group (12.4) was larger than the manual labor group (1.5). If the census tract contained fifty per cent or above in any one of the four occupational categories, it was given the rank assigned to that category. This would indicate a change in occupational characteristics in that census tract which seems to becoming more professional even though the blue-collar worker group was still relatively high (30.2).

Some of the census tracts were not this simple in rank-
ing. For example, census tract number 47 contained the
following percentages: professional, 7.3; white-collar
workers, 45.8; blue-collar workers, 41.9; and manual laborers,
4.9. This census tract was ranked as a two because there
seems to be a change occurring in the direction of the high-
est occupational category. When the reverse of this was
found, the census tract would be given a lower ranking.

The major ranking problem came with those census tracts
which were marginal and relatively close. For example,
census tract number 50 which contained the following
percentages: professional, 7.9; white-collar workers,
42.3; blue-collar workers, 45.9; and manual laborers, 3.9.
Such cases were few (only thirteen out of the 174 census
tracts utilized); however, when they did occur, the per-
centages of the first two categories were added together
and the last two together (7.9 plus 42.3 equals 50.1; and
45.9 plus 3.9 equals 49.8). When this was done, the rank
assigned would be that number closest to the center. In cen-
sus tract number 50 the social rank of two was assigned.

The 174 census tracts could be ranked as to occupational
category according to the following criteria:

    (1) professional, .25 with .40 or above white-collar.

    (2) white-collar, .50 with .15 or above blue-collar or
         below .25 professional.

    (3) blue-collar, .50 with .15 white-collar or above
         unless manual labor was .25 or above.

    (4) manual laborers, .25 with blue-collar, .40 or above.

CHAPTER III

URBANIZATION

The urbanization index is a "basic differentiating di-
mension for individuals and groups in modern society at
a given point in time."[1] This differentiating dimension is
in the area of social conditions which reflect the life
pattern of the population. The urbanization index in this
study will vary from that of Shevky and Bell in that the
age-sex composition will be used instead of housing. Ac-
cording to the study by Hodge and Treiman mentioned in
Chapter Two, housing is no longer as good a measurement
that it once was in reflecting the life pattern of the
population. They said, "access to property and other forms
of capital investments is open to all men, regardless of
their station in life."[2] The age-sex composition is a
better measurement for determining the differentiating
social patterns. Age and sex always have some relevance to
the pattern of social activities, if only on ultimately bio-
logical grounds. "It follows that the age-sex composition
of a population, and the way this structure is affected by
migration and changes in birth and death rates, may be used

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[1]Shevky and Bell, op. cit., p. 17.

[2]Hodge and Treiman, op. cit., p. 541.

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for making inferences concerning the 'productive potential' of a population."[3] According to Hawley, "Age composition provides a rough index of the growth phase in which a population is at the moment." The age-sex composition of any given time constitutes a limiting factor on the kinds of collective activites a population may engage in at that point in time.[4] The other two variables, fertility and women in the labor force, used by Shevky and Bell for determining the urbanization index will be utilized.

Fertility

The child-woman ratio is somewhat more refined than the crude rate. This ratio can be clearly distinguished in the census data. It will eliminate the effect of certain compositional differences which might exist in the populations being compared. Fertility will differ greatly between population groups having different cultural values and social-economic status. The child-woman ratio will reflect these differences in life patterns.[5]

The child-woman ratio is clearly a measure that averages the fertility of the different social groups which make up the total population. "The higher fertility of the lower classes has been observed so often in so many different

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[3]Wilber E. Moore, "The Exportability of the 'Labor Force' Concept," American Sociological Review, XVIII (1953), pp. 68-72.

[4]Hawley, op. cit., pp. 134, 143.

[5]Thompson and Lewis, op. cit., pp. 247, 274.

countries that the existence of a negative correlation between fertility and class or socioeconomic status has virtually acquired the force of a sociodemographic law." However, differentiating fertility may disappear altogether when bith control becomes universally practiced.[6]

The same variables that are related to a high fertility ratio in one area are also present in those areas with a low fertility ratio. The difference lies in the value system of any given area. Thus certain underlying social-psychological factors are at work affecting the fertility ratio. Perhaps these social-psychological factors cannot be measured per se; however, when such objective data as that of the census tract is utilized, these factors can be described in terms of relationship to other indexes within that area. Thus a certain social pattern will emerge.[7]

Apparently there is a significant differential between white and non-white fertility; however, it will not be necessary in this study to show this difference since the child-woman ratio will serve the same general purpose, that is, the socio-economic and cultural differences in each census tract. When both white and non-white groups are combined, the extent to which we need to deal with the

[6]Dennis H. Wrong, Population and Society (New York, 1966), pp. 67-79.

[7]Kingsley Davis and Judith Blake, "Social Structure and Fertility: An Analytic Framework," Economic Development and Cultural Change, IV (1956), pp. 357-358.

cultural values can be adequately described by the child-woman ratio.[8]

The fertility ratio will be the same as that used by Shevky and Bell, that is, child-woman ratio, the number of females in the age range fifteen through forty-four divided into the total number of children under five.[9] A score was computed for each census tract (numbers from one to four respectively). A low score of four indicates a high ratio of children under five years of age for those women of child-bearing ages of fifteen to forty-four age group. A high score of one indicates a low ratio of children in the same age category.

A census tract containing from 0 to 24 per cent was given a rank of one. A rank of two was given to that tract with 25 to 49 per cent of the child-bearing women having children under five years old. That tract which had from 50 to 74 per cent was given a ranking of three. A high ranking of four was given those tracts containing 75 to 100 per cent of the women in the child bearing ages of 15 to 44 having children under five years old.

For example, census tract number 007A contained 408 children under five and 950 women of the child-bearing age of 15 to 44. This tract child-woman ratio was 4.3 per cent which gave it a ranking of one. Census tract number 0019

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[8]Thompson and Lewis, op. cit., p. 295.

[9]Shevky and Bell, op. cit., p. 55.

had a fertility ratio of 81.9 per cent and was given a rank of <u>four</u>. This census tract had 432 women of the ages 15 to 44 and 366 children under five. Those tracts with 50 to 74 per cent were ranked as a <u>three</u>. For example, tract number 0027B had a child-woman ratio of 64.4 per cent. It had 736 children under five and 1143 women of the ages 15 to 44.

Women in the Labor Force

Since social changes are reflected in the occupational structure, the vertical movement of this occupational structure is perhaps the most objective means to measure the social status of any particular area. The higher the percentage of the population falling into the professional category should indicate the life style within that area as to social status. When the other indexes, urbanization and segregation, are correlated with the occupational ranking, the social pattern of the census tract will become even more significant. Combining those census tracts which are highly related into social areas will be significant in the understanding of the general population which makes up these areas. The ratio of that part of the population which is in the labor force is significant in that it reflects some of the cultural values of a society. One of the most important characteristics of any given area in a complex society is the relationship between the changing size, composition, and geographic distribution of the labor force.[10]

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[10]Gist and Fava, <u>op</u>. <u>cit</u>., pp. 171, 178.

The style of life pattern of any given area can be
described and analyzed by categorizing the occupational
distribution of the labor force. This life pattern be-
comes more clearly defined when viewed from the standpoint
of age, sex, and race composition. "The division of labor
and social differences often reinforce one another."[11]
The women in the labor force will reflect conditions in
family-income patterns. As the United States becomes more
and more industrialized and when these industries shift
more to service industires instead of productive, there
will become greater significant differences in occupational
composition of the males and females.[12]

The differentiation of women in the labor force was
computed by dividing the number of women in the labor
force of the ages fourteen and over by the total number of
the ages fourteen and over in that tract. These percentages
are given in the United States Census Tracts for Dallas,
1960.[13] To determine the differentiation between men and
women in the labor force an order of ranking was arbi-
trarily established. This ranking followed the pattern used
in the other variables in determining the urbanization index
of the census tract. Each census tract was ranked according

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[11]Ibid., pp. 118, 188.

[12]Thompson and Lewis, op. cit., pp. 198, 208.

[13]United States Census Tracts for Dallas, 1960, Table
P-3, "Labor Force Characteristics of the Population,"
pp. 103-116.

to percentage of women in the labor force as compared to the men in that same tract. They were ranked as follows: (1) .75 or above, (2) .50 to .74, (3) .26 to .49, and (4) .25 or below. That is, those census tracts which contained a high proportion of women in the labor force were given the ranking of one. Those with low proportion of women were given the rank of four.

Sex and Age Composition

In all social systems, members are differentiated on the basis of sex and age. This differentiation serves as a prerequisite to all other positions in the society.[14] Sex and age become important in studying the population characteristics of a given area in that (1) Sex and age are directly related to fertility; and (2) They are perhaps the most important single basis for determining the participation of the individual in the society.[15]

The importance of sex and age composition within any given city, or society will alter the life pattern. This composition constitutes a limiting factor on the kinds of collective activities the population may engage. It may alter the pattern of consumer expenditures. The size of the labor force will be determined largely by the sex and age composition of the population. The total structure of

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[14]William F. Ogburn and Meyer F. Nimkoff, Sociology (Boston, 1950), p. 243.

[15]Wrong, op. cit., p. 6.

industrial and service functions may be altered by the pattern of consumer habits. These consumer habits will depend largely upon the sex and age composition. This is true, namely, from the standpoint that goods and/or services produced for a predominantly female aging population would not be the kinds of goods and/or services required by a more active, younger, and heterogeneous population.[16]

The differentiation of sex and age may create an imbalance of the sex ratio which in turn affects the selection of marital partners. This differentiation could affect the family pattern in any given area. The degree of such cultural change may not be determined by census data; however, it could indicate that such conditions could and may exist.[17]

The age composition of the sex ratio may be a disturbing factor in mate selection. For it has been shown that men usually marry women a few years younger than themselves. This factor can be seen in the census data. That is, if the age composition of the sex ratio of any given census tract is unbalanced, the family pattern of that area may undergo social modifications. Thus the census data will provide an objective view of the existing social conditions.

Since women are less prone to marry men with less intelligence and education than their own, the sex ratio

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[16]Hawley, op. cit., pp. 144-145.

[17]Ruth Shanle Cavan, The American Family (New York, 1959), pp. 74-78, 344.

combined with the occupational ranking would indicate
this social phenomenon. This is true because the occu-
pational ranking would indicate the educational level of
the area.[18]

Bell and Force in their study, "Urban Neighborhood
Types and Participation in Formal Associations," found
that with increase in the socio-economic level of the
population there was an increase in participation in formal
associations. When two high socio-economic levels were
compared the lower of the two levels was also lower in for-
mal associational participation. Bell and Force also found
that there was a differentiation in the age composition.
That is, the high socioeconomic level groups maintained a
relatively higher participation in the older age categories
than did the lower socio-economic groups. These findings
were consistent in the higher socio-economic levels; however,
in the lower economic groups there was a marked drop in
participation in formal associations as the populace became
older, Census data, then, will provide objective infor-
mation as the sex and age composition is compared with the
social ranking index (occupation). Thus the sex and age
composition may become an important indicator in defining
a set of general societal expectations.[19]

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[18]Ibid., p. 346,

[19]Wendell Bell and Maryanne T. Force, "Urban Neighbor-
hood Types and Participation in Formal Associations,"
American Sociological Review, XXI (February, 1956), pp. 25-34.

Schmid pointed out in his study, "Age and Sex Composition of Urban Subareas," that the age and sex distribution of a population reflects the influence of various social and cultural factors. For example, he said, "The 'skid road,' is inhabited by older unattached males, with very few females, and even fewer children. A rooming house area within walking distance of office buildings has few children and a large proportion of young adult females." Schmid found that these patterns occur so frequently that the social and economic characteristics of the population could be adequately described by a population pyramid. These pyramids will give a more comprehensive picture of the age and sex structure within the population. Such pyramids are constructed for the social areas on the extreme ends of the continuum in order to bring into focus this more detailed and comprehensive picture[20] (See Figure 2 and 3, page 58).

Sex and age composition was computed similar to that of the other measurements. Using the 1960 national average sex ratio as the point of reference, each of the four sex-age categories (0 to 14; 15 to 44; 45 to 64; and 65 and over) were arbitrarily ranked high, medium, and low sex-age ratios (from one to three respectively). The following table will indicate the various rankings which were given to each sex-age category:

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[20]Calvin F. Schmid, "Age and Sex Composition of Urban Subareas," General Sociology, edited by Robert W. O'Brien, Clarence C. Schrag, Walter T. Martin, (Boston, 1964), p. 158.

TABLE II

RANKINGS OF AGE-SEX COMPOSITION

Age-Sex Category	National Average by Sex Category	Rankings		
		High (1)	Medium (2)	Low (3)
0 to 14	104	106 plus	102 to 105	101 minus
15 to 44	96.6	98 plus	94 to 97	93 minus
45 to 64	95.7	97 plus	93 to 96	92 minus
65 or above	82.9	84 plus	80 to 83	79 minus

A high ratio means that each sex-age group which received a ranking of one would have a larger number of male inhabitants than the other census tracts in the same sex-age grouping. This high ranking would also show that this larger ratio of male inhabitants were of a particular age group. The reversal would be true with the low ranking, that is, a smaller number of male inhabitants in this particular age group. Thus both sex and age differentiation will be determined.

In order to give a rank order to the whole census tract the age-sex categories were collapsed into a single index. To do this the rankings of high, medium, and low given to each of the age-sex categories had to be combined into a ranking system like those used in determining social rank and segregation indexes. A population concentrated at either extreme of the sex-age distribution has a high dependency

ratio, that is, the number of nonproductive individuals is relatively great and burdens the productive population. The age and sex composition for the whole census tract was ranked from one to four in order to correspond with the other measurements of urbanization, social ranking, and segregation. In order to do this each of the categories had to be compared for similarity. If each category ranked a low score of three, then it was relatively simple to place this census tract into a single age-sex index. This would hold true for those tracts which were all high, that is, a score of one. When there were discrepancies as to what rank should be assigned, an arbitrary decision was made. Table III illustrates how these various age-sex categories were finally collapsed into a single urbanization index.

The urbanization index was computed by combining the three variables, fertility, women in labor force, and the age-sex composition, into a single index. The scores on these three variables were collapsed into rankings similar to that of the occupational and segregation indixes, that is, a ranking from one to four. This should give the same order to the whole scheme.

Ideally the urbanization index should consist of four patterns of social life based upon the three variables, fertility, women in the labor force, and the age-sex composition. However, in actuality this was not the case. To be ideal, the urbanization index should have the following four patterns or types:

TABLE III

URBANIZATION INDEX

Urbanization Ranking	Characteristics
1	1. High ratio of children under five years of age; 75 to 100 were given fertility rank of four. 2. Ratio of women in the labor force ranging from 75 to 100 received a rank of one. 3. High age-sex dependency, that is, higher female ratio. Those which received ranking of four.
2	1. Ratio of children under five was not above 74 nor below 50. 2. Ratio of women in the labor force ranged from 50 to 74. 3. The age-sex composition fell in the medium area where there was relatively higher number of females compared with male population but not excessive.
3	1. Ratio of children under five was not above 49 or below 25. 2. Ratio of women in the labor force ranged from 26 to 49. 3. The age-sex composition fell in the medium area where there are relatively higher number of males compared with the female population but not excessive.
4	1. Low ratio of children under five; ranging from 0 to 24. 2. Ratio of women in the labor force ranging from 0 to 25. 3. The age-sex composition fell into a low male ratio; those which received a ranking of one.

For those tracts which did not immediately fall into one of
the above rankings the scores given to each variable were
again compared. After making a comparison, the tract was
arbitrarily given an urbanization score that would be
closest to the idealized index ranking.

CHAPTER IV

SEGREGATION

As stated in Chapter One, segregation will be measured
by determining the percentages of white, non-white, and
foreign born within census tracts to show the degree of
heterogeneity of the social tract area. This index will
show the dissimilarity in the distribution of the population
by social areas. Shevky and Bell used segregation as a mea-
surement of isolation in their original study; however, in
their revisions they admit that the segregation index as a
measurement of isolation was inadequate for the census
tract.[1] Since census tracts are by definition, homogeneous,
this type of measurement will be more objective in measuring
existing social conditions in that the degree of hetero-
geneity will be measured at particular point in time. In
order to be more objective in establishing a trend a compar-
ative study with other census years is needed.

Shevky and Bell used segregation as an index of iso-
lation which they claimed reflected the degree of residen-
tial association of persons within the same group. Duncan
criticized Shevky and Bell on the use of segregation as an
"index of isolation." According to Duncan, "the 'index of

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[1]Shevky and Bell, op. cit., p. 25.

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isolation' is, in fact, merely a new name and formula for
a well-known statistic--the correlation ratio." Rather
than to show a degree of residential association it would
be more significant to describe the degree of homogeneity
or heterogeneity within any census tract and/or social area.[2]

The measurement of segregation has been a methodological
problem for the urban ecologist. This problem has mainly
revolved around constructing a scale or index that will mea-
sure empirically the degree of segregation. If it can be
shown that the non-whites and foreign born constitute ten
per cent of the residents in some areas and fifty per cent
in others, there is evidence of segregation. Although this
type of measurement may give an incomplete picture, it will
illustrate a generalizing change. In order to know why a
census tract of social area is increasing or decreasing in
segregation requires a great deal more knowledge about the
status system and other behavioral patterns of the popula-
tion. However for the purposes of this study the index
adopted should at least manifest some change at a given
point in time.[3]

By definition a census tract is homogeneous. If by
the use of objective demographic data, a change can be
established showing the degree of heterogeneity then it

[2]Otis Dudley Duncan, "Review of Skevky and Bell,"
American Journal of Sociology, LXI (1955), pp. 84-85.

[3]Gist and Fava, op. cit., pp. 140-145.

would be reasonable to assume that certain sociological factors are being changed. This change could be either by internal or external forces. It would be reasonable also to assume the higher the degree of heterogeneity the more likely for social changes to exist. Of course, most sociologists agree that "the criterion of perfect homogeneity cannot be achieved."[4] Even so, the degree of either homogeneity or heterogeneity can become meaningful with the use of segregation as the measuring device.

Although census tracts are by definition homogeneous, Gist and Fava pointed out that "metropolitan regions as a whole tend to be heterogeneous rather than homogeneous in their economic and cultural characteristics." With heterogeneity comes a differentiation of races and cultures which in turn will bring into focus the various social and psychological processes of human interplay. This observation on the metropolitan area as a whole should sharpen the focus on the homogeneous census tracts. If it can be exhibited that any given census tract has a higher degree of heterogeneity on the basis of segregation, then it is reasonable to assume this particular census tract is experiencing some social changes. When any given number of census tracts have

[4]Joel Smith, "A Method for the Classification of Areas on the Basis of Demographically Homogeneous Populations," American Sociological Review, XIX (April, 1954), pp. 202.

the same characteristics combined into a social area, then
this social area is manifesting changing social conditions,[5]

The segregation scale index will be essentially the
same as used in the occupational scale index. This index
was computed by calculating for each census tract the per-
centage of non-white and foreign born in comparison to the
total population of that tract. Arranging the percentage
from zero to 100 it can be determined by an arbitrary cutting-
off point when a particular census tract is more hetero-
geneous or homogeneous. The closer to the zero point the
population is the more homogeneous (white) it will be;
while at the other extreme of the continuum it would also
be more homogeneous (non-white).

The same ranking system was used to illustrate the
degree of segregation as was used in the occupational index,
that is, ranking of one to four respectively. However, the
breaking points used for the segregation index is somewhat
different. The breaking points of the segregation index
and occupational index are different because a smaller per-
centage in the segregation index will measure the degree of
heterogeneity or homogeneity more adequately than is required
in occupational index. After observing the reference works
cited both in connection with occupational and segregational
indexes, the breaking points were arbitrarily selected.[6] It

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[5]Gist and Fava, op. cit., pp. 248, 288.

[6]Ibid., p. 140.

seems that the following breaking points for the ranking of segregation would be more meaningful: (1) 0 to 10 per cent; (2) 11 to 30 per cent; (3) 31 to 60 per cent; and (4) 61 to 100 per cent. The ranking of one will be those tracts containing from 0 to 10 per cent non-white and/or foreign born population. Those tracts given a ranking of four will be more homogeneous in non-white population, that is, the population will contain from 61 to 100 per cent non-white and/or foreign born population.

Those census tracts which were given the ranking of two and three will be the most heterogeneous in population density. The rank of two is from 11 to 30 per cent non-white; whereas the rank of three has 31 to 60 per cent non-white population. It will be in these census tracts that the greatest social changes can be expected.

The percentages for the segregation index was computed by dividing the total population for each census tract into the total number of non-white and/or foreign born of that tract. For example, census tract number 001 had 3670 total population with only 121 non-white and/or foreign born. This gave census tract number 001 a percentage of 3.3 or a ranking of one. Census tract number 016 had 8450 total population with 7336 non-white and/or foreign born. Thus, tract number 016 had a percentage of 86 non-white or a ranking of four. Census tract number 030 had 3051 total population with 1363 non-white population. This tract was 44.7

per cent non-white thus was ranked as <u>three</u>. Census tract number 004B was ranked as <u>two</u> because it contained 11.5 per cent non-white population. This tract contained 8301 total population with 959 non-white and/or foreign born.

There were a total of 120 census tracts which were ranked low on the segregation index, that is, they had ten per cent or less non-white and foreign born population. Only twenty-four census tracts received a ranking of <u>four</u> meaning they contained more than sixty-one per cent non-white and foreign born. These figures indicate that the census tracts as a whole are homogeneous. However, twenty-one census tracts received a ranking of <u>two</u> or <u>three</u> which indicates a high degree of heterogeneity. Thus the dissimilarity in the distribution of the population can be reflected by combing those census tracts with similar characteristics.

CHAPTER V

SOCIAL AREAS

Social areas were derived by computing the scores given in each of the census tracts on the basis of three index scales: social ranking, urbanization, and segregation. Those census tracts with the highest degree of correlation will constitute one type of social area. Those with the lowest will be on the other end of the continuum. Each census tract population will be given three scores, one for each of the indexes, according to the factors used in determining the index. Then the similar configuration will be grouped together into these larger units creating a social area.

Any number of combinations of ranks are conceivable in constructing of the social areas. Out of the many possibilities the following table was constructed to illustrate the census tract scores found in the 1960 census tracts of Dallas:

TABLE IV

CENSUS TRACT INDEX SCORES

Social Rank	Segre- gation	Urban- ization	Number of Tracts	Social Rank	Segre- gation	Urban- ization	Number of Tracts
1	1	4	1	2	2	2	1
1	1	3	10	3	2	3	5
1	1	2	3	3	2	2	3
2	1	4	2	3	2	1	1
2	1	3	60	1	3	3	1
2	1	2	15	2	3	4	1
2	1	1	1	2	3	3	1
3	1	4	3	3	3	4	1
3	1	3	17	3	3	3	1
3	1	2	6	3	3	2	2
3	1	1	1	4	3	2	1
4	1	3	1	3	4	3	7
1	2	3	1	3	4	2	15
2	2	3	2	3	4	1	2

One type of social area could be derived by combining those census tracts which had a social rank of one with the other two indexes being somewhat similar. There would be several combinations which need consideration. For example, area with a social rank of one and an urbanization score of either high male and low child ratio ranked as four on the index, or a social rank of one and urbanization score of high female and high child ratio ranked as one on the index. These two social areas could have several possibilities as to the degree of segregation. For example, each of the areas mentioned could have either a score of one on the segregation index which indicates a large white population

density, or it could have a score of four which indicates
a large non-white population density.

Only one of the census tracts (number 165) ranked high
on the occupational score (social rank score of four) and
low on the segregation index (number one). Since a census
tract does not formulate a social area within itself, this
particular census tract would need to be treated separately.

In the first category there were eleven census tracts
composing this social area type (Social Area A). These
eleven census tracts consisted of professional, white, and
low dependency ratio (urbanization index). None of the
tracts contained the second category, that is, all three
indexes receiving a score of one. However, there were
three tracts which could make a social area with an urbani-
zation score of two (Social Area B). These two social
area types would illustrate one extreme of the continuum
describing the social area types.

The following table will exhibit the various social
area types as the census tracts were combined into these
social areas:

TABLE V

SOCIAL AREAS OF DALLAS, 1960
COMBINED INDEX SCORES

Social Area	Social Rank	Segregation	Urbanization	Number of Tracts	Social Area	Social Rank	Segregation	Urbanization	Number of Tracts
A	1	1	3-4	11	H	2	2	2-3	3
B	1	1	2	3	I	3	2	1-3	9
C	2	1	3-4	62	J	2	3	3-4	2
D	2	1	1-2	16	K	3	3	3-4	2
E	3	1	3-4	20	K	3	3	2	2
F	3	1	1-2	7	M	3	4	3	7
G	1	2-3	3	2	N	3	4	1-2	17

These fourteen social areas (A-N) were constructed by combining those characteristics which are similar. There were three census tracts which could not be combined into social areas; thus, they were omitted. Also five census tracts which contained no population were omitted. Of the three census tracts which could not be combined into social areas, two had a high percentage of laborers (social ranking of four). One of them had a population almost entirely white while the other had a high degree of segregation (score of three). The tract which had a higher white population also had a higher male population and a lower child dependency ratio (urbanization score of three). The tract with a higher degree of segregation, that is, more non-white than

white also contained a higher percentage of females and child dependency ratio (score of two). Neither of these census tracts could combine with others into a social area thus they were omitted. The third census tract (number 165) omitted was mentioned earlier.

Shevky and Bell's study constructed the social areas by plotting on a graph the various index scores.[1] In our study the scores of the various indexes were collapsed in the same manner used for the urbanization index (Chapter Three) to form the social areas. A test was made to see if any significant difference could be found in these two methods of combining scores. A graph was prepared like. that used by Shevky and Bell as a preliminary test for this study. This graph was constructed only for those social areas utilized and was done only for the benefit of this author. The results were not significant enough to accept one method over the other.

This method (social area analysis) of analyzing the city is by far more parsimonious and will give a general description of the life style to be found in the city. The use of census tract data is objective in that it does not embody those social-psychological phenomena which would be very difficult if not impossible to measure empirically. Generally the social area contains persons having the same

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[1]Shevky and Bell, op. cit., pp. 28-53.

level of living and the same way of life. Each of the social

areas will exhibit those characteristics, attitudes, and

behavior which makes it unique from the other areas.

At this time, it would be superfluous to examine each

of the social area types. Those social areas to which we

shall concern ourselves will be treated in terms of being

ideal types. This implies that many other types of social

areas could be discussed. This study will concern itself

with only five of these social areas. These areas are:

A, B, J, K, and L (see Table V). These five social areas

represent the extreme ends of the continuum of the various

areas constructed for Dallas from the 1960 census tract

data. These five social areas are further illustrated on

the map of Dallas County Census Tracts--1960 (See Figure

1). It can be clearly seen from the map, Figure 1, that

those census tracts which have similar characteristics

and are combined into social areas also cluster together

spatially. Ecologically such geographic illustrations goes

beyond the data used in this study. However, such obser-

vation does help in the understanding of the data used as

any visual aid might do.

Social Area A is characterized by high percentage

(75 to 100) of professional workers. Also the urbaniza-

tion index score shows this social area to have relatively

fewer working women as well as fewer children under the

age of five than would be found in other social areas.
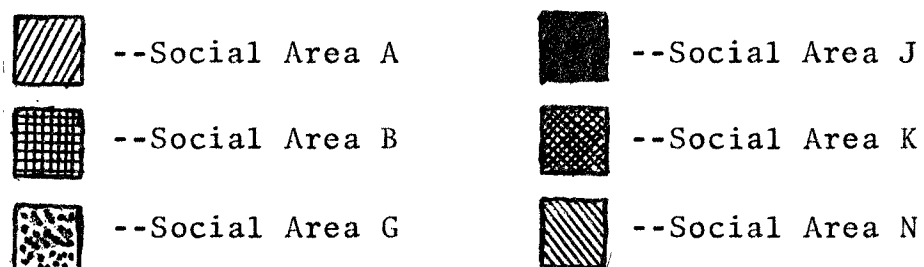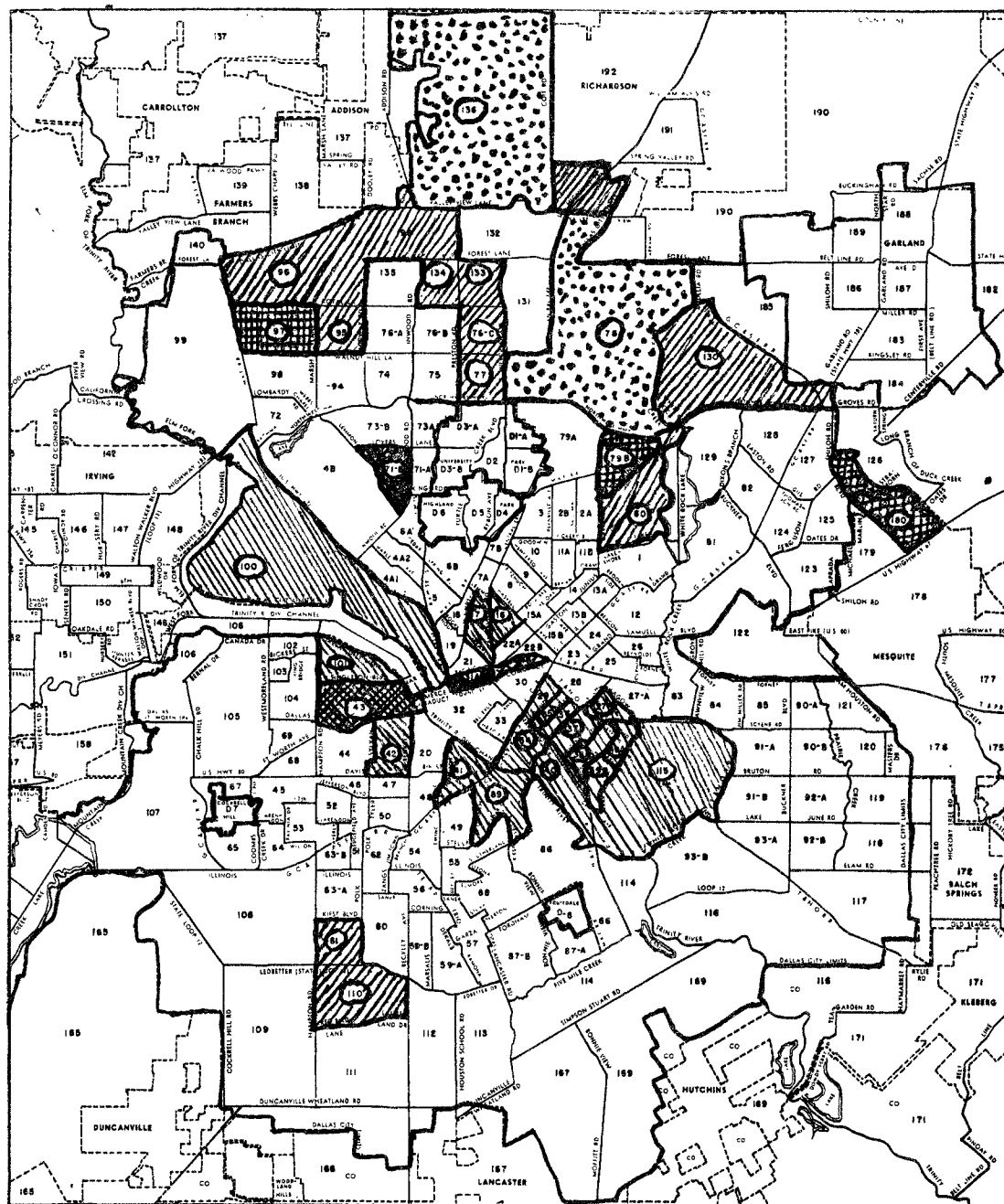
CENSUS TRACTS OF DALLAS--1960

Fig. 1--Social Areas Utilized

This suggests that Social Area A would have a different life style than those areas where more women work and where more young children are found.

Since Social Area A contained professional, homogeneously white population, and is low on the dependency ratio, it is reasonable to assume that there are certain customs and folkways which arise out of the nature of the group. According to Caplow, "the few thorough studies of occupational milieus which extend to family life and social participation are amazingly rich in insights." He further declared that the professional group maintain certain standards which apply to the entire professional class.[2]

Couple the social rank score of Social Area A with their urbanization score and the results are as might be expected. This area contained fewer older people as well as fewer children under five years of age. Thus it is reasonbale to assume that their family pattern is different than that found in other social areas. Also there were fewer women in the labor force. This assumption is made even clearer when Social Area B is compared with Social Area A. Social Area. B manifest some of the same characteristics with the exception that it had a slightly higher urbanization index score. This observation can be made in all those social areas which ranked high on the social ranking index.

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[2]Theodore Caplow, The Sociology of Work (New York, 1954), pp. 124-125.

Caplow observed that occupational status has tremendous effect upon the family pattern. When Social Area A and B are observed from an objective viewpoint such as this data provides, it is evident that the family pattern in these areas is somewhat different than the pattern found in social areas with a social rank of two or three. This is made more evident when the data of the urbanization index are analyzed.[3]

In Social Area A there is a greater participation in civic matters and other outside functions. With fewer small children to burden them the women can give more attention to matters outside the home. Also, since fewer women work or need to work, they have more idle time to devote to the home. This time will alter the family pattern in that more leisure time is to be had by the family.

The pattern in Social Area A will be different from Area B. Social Area B has more working women, more children under five, and a larger per cent of elderly people. Since Social Area B had an urbanization score of two, it will be made up of 26 to 49 per cent children under five and about the same per cent in the aged. Apparently this social area type would be those whom Caplow describes as that "large and expanding section of the urban population who do no manual labor, follow the norms of respectability, are

[3]Ibid., p. 248.

educated beyond the legal minimum, are actively concerned
with personal advancement, and are ordinarily able to
devote part of their income to display."[4]

It is interesting to note that those social areas which
received social ranking of three were those areas that had
a higher degree of segregation, that is, a score of two or
three on the segregation index (11 to 60 per cent non-white).
The life style will also be different than what is found in
those social areas receiving a social ranking of one and
segregation score of one. For example, Social Areas J and
K had a higher degree of segregation (both a score of three)
than did Social Area A or B (both a score of one). Social
Areas J and K ranked either a three or a four on the urbani-
zation index which was the same as Social Area A. According
to Caplow, in all societies, the family system and the
occupational system are closely related."[5] Therefore, the
life style will be reflected in the occupational scale more
than any of the other indexes.

Social Area A and N were similar in the age-sex com-
position. This observation is clearly reflected in the
population pyramids of these two areas (see Figures 2 and 3).
However, Social Area N had considerable larger portion of
women in the labor force as well as children under five.
Social Area A had twenty-seven per cent women in the labor
force and forty-eight per cent children under the age of

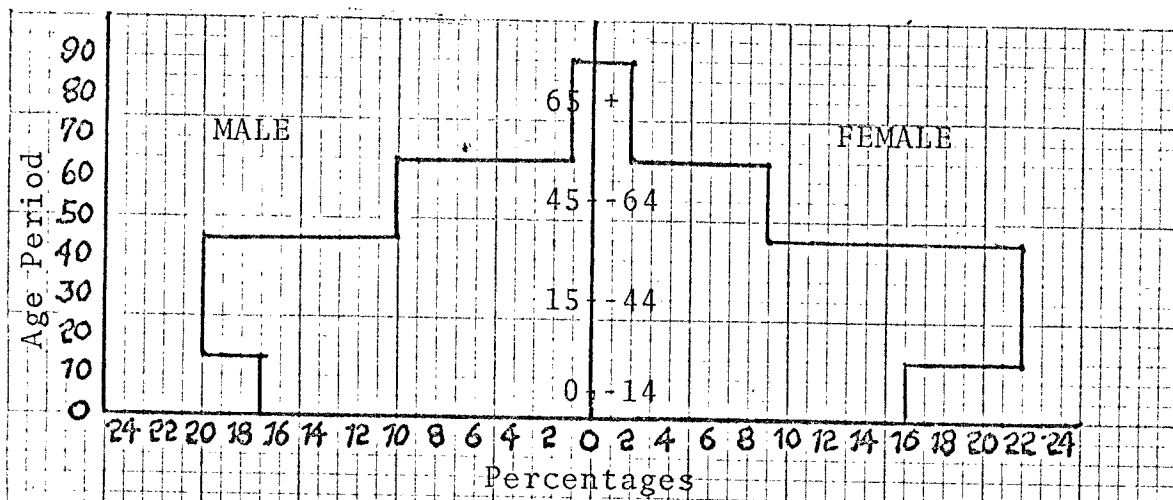[4]Ibid., p. 253.   [5]Ibid., p. 248.

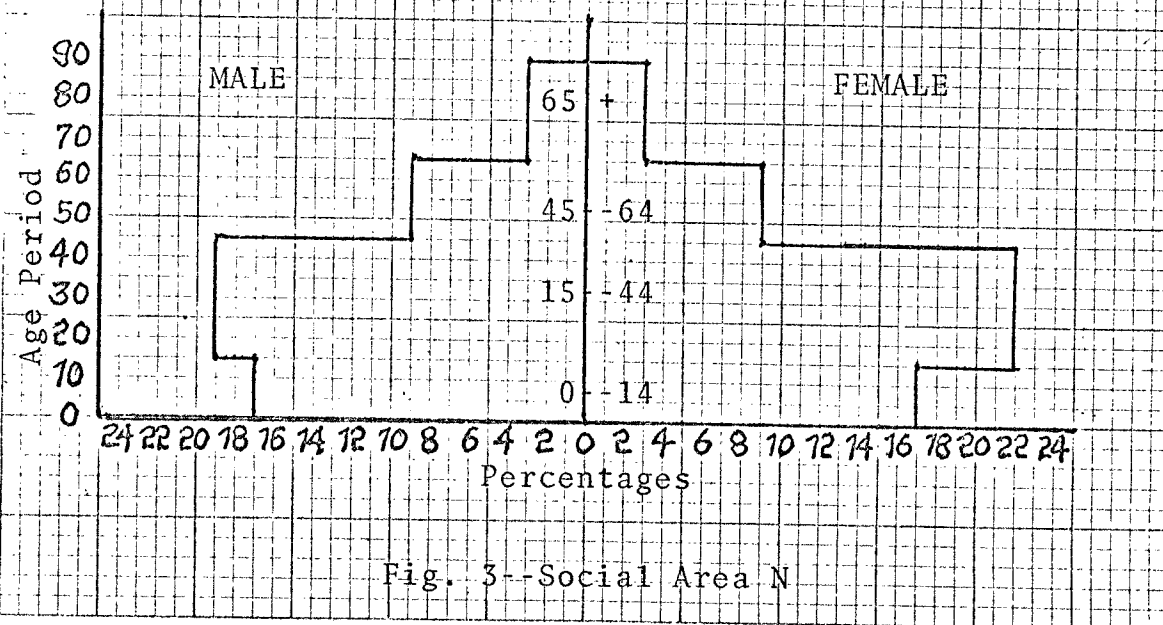POPULATION PYRAMIDS

Fig. 2--Social Area A

Fig. 3--Social Area N

five. Social Area N consists of fifty-two per cent women
in the labor force and sixty-five per cent children under
five. Percentage of women in labor force reflects the
different social patterns existing in each area. These
percentages are demonstrated on the population pyramids
(See Figures 2 and 3).

Another factor which will reflect the life style of
social areas A and N is the segregation index. Social Area
A was given a score of one on the segregation index which
means that 10 per cent or less of this area was non-white
in population, that is, Social Area A is homogeneously
white. Social Area N was given a score of four on the
segregation index which means that from 61 to 100 per cent
of this area was non-white, that is, Social Area N is
homogeneously non-white. The segregation index was used
in order to have some idea of the degree of population den-
sity in terms of white and non-white. The evidence of
disimilarity in the life patterns between a homogeneous
white and a homogeneous   non-white population is copious.

It was noted by Gist and Fava that "segregation indexes
are highest for the professionals and for laborers, and
gradually decline toward the center of the occupational
hierarchy." Gist and Fava did not define the term laborers;
however, if it is assumed they fell within the category of
blue-collar workers of this study, then their observation of

segregation indexes holds true with Social Areas A and N
of Dallas. It was observed that Social Area J and K
followed the decline suggested by Gist and Fava.[6]

There is abundant evidence that actual fertility differs
greatly between population groups with different cultural
values. This differentiation is also found to exist be-
tween groups having the same broad cultural background
but differ in social and economic status. These social
conditions are exhibited between Social Area A and Social
Area N.[7]

Apparently the major differentiating factor existing
between Social Area A and N is their social rank, that is,
their occupational position. Social Area N has predominately
blue-collar workers, that is, social rank score of three.
Social Area A is predominately professional (score of one).
Since the evidence strongly supports the importance of
occupation in determining life styles, it is reasonable to
assume that conditions exist in these two areas which indi-
cates a different life style is carried on in them.

Several implications are suggested by the character-
istics of these social areas utilized. The social structure
of the area is represented by a status-ranking determined
by the socio-economic level of the social area. Secondly,

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[6]Gist and Fava, op. cit., p. 134.

[7]Thompson and Lewis, op. cit., p. 274.

there is a pronounced and consistent patterning of the population with respect to occupation, number of women in the labor force, the degree of heterogeneity found as well as the general age-sex composition of the areas.

It is noteworthy that there is a clustering of non-white population at the lower socio-economic levels. This differentiation within itself is significant in manifesting different patterns in life styles. It is quite apparent that the lower socio-economic social areas are closer to the center city than are the higher socio-economic social areas (See Figure 1). This indicates that a different life style exists in that the lower socio-economic area relies more upon public transportation in order to get to their places of work. There seems to be a close relationship between spatial and social distance in these areas.

The urbanization index measured differences in family structure. It is reasonable to assume that this indicates a corollary difference in behavioral patterns of the social areas. If the family structure is closely related to be-havior patterns, then the pattern of transportation would reflect some of these differences. The style of life is related to the cost factor. This cost factor is reflected in the patterns of transportation.

CHAPTER VI

PATTERNS OF TRANSPORTATION

The importance of transportation of the worker to and
from work is well stated by Reeder in his study. "Social
Differentials in Mode of Travel, Time, and Cost in the
Journey to Work." According to Reeder, "it is almost need-
less to point out that traveling to work is a regular feature
of a modern urbanized, industrialized society and that
workers are accustomed to spending a considerable part of
their time traveling to and from work."[1] Reeder hypothe-
sized that the journey to work tends to vary according to
socio-economic characteristics of the population.[2] Our
study will further test Reeder's hypothesis.

The lower socio-economic groups are prone to utilize
public means of transportation to and from work. Also the
workers in these areas will travel less distance to and
from place of work thus they tend to minimize time and cost
in their journeying to and from place of work.

Table VI illustrates the percentages of the five social
areas computed for Dallas taken from the 1960 census tract
data as to the available means of transportation and the
place of work. Social Area A and N are the two extreme ends

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[1]Reeder, op. cit., p. 56.   [2]Ibid.

of the continum as to social ranking and life style. It
is evident from the data that these two social areas have
different patterns of transportation to and from places of
work. This finding was hypothesized in the beginning of
this study.

TABLE VI

PLACE OF WORK AND MEANS OF TRANSPORTATION FOR
FIVE SOCIAL AREAS, DALLAS, 1960 BY PERCENTAGE*

Place and Means	Social Areas				
	A	B	J	K	N
Public	3.6	3.6	13.1	27.1	34.7
Private	86.6	89.6	69.4	50.0	47.1
Walked to work	0.1	0.6	7.3	8.3	5.4
Other means	2.2	2.3	0.1	1.1	0.7
Worked at home	1.7	1.7	0.2	3.7	0.9
Transportation not reported	2.7	1.2	5.7	7.6	10.1
Inside city	86.4	83.7	86.4	85.2	86.4
Inside SMSA	89.7	91.5	90.4	87.9	93.4
Outside SMSA	5.7	5.7	0.2	0.8	0.7
Place of work not reported	3.2	1.8	6.7	8.5	8.3

*United States Census Tracts of Dallas, 1960.

Basic hypothesis of this study was that as the characteristics
of the social area vary, the patterns of transportation, util-
ization of available means and distance traveled, will also
vary. The particular patterns of transportation are related

to the social characteristics of the tract population as measured by the three factors: social rank, urbanization, and segregation.

The most significant differentiation between Social Area A and Social Area N is the utilization of the available means of transportation. Social Area A was characterized socially by high social ranking (professional workers), high degree of white population (10 per cent or less non-white); and fewer women in labor force and fewer children under the age of five. Only 3.6 per cent of the working force of Area A utilized the public means of transportation and 86.6 per cent private transportation, that is, their own automobiles.

Social Area N was characterized socially by a low social ranking (blue-collar workers), high degree of non-white (61 to 100 per cent); and a greater portion of women in the labor force as well as a larger portion of children under the age of five. Area N had 34.7 per cent of its labor force utilizing the public means of transportation and 47.1 per cent using private means. Thus it is clearly demonstrated that the pattern of transportation is very different in these two areas. If the transportation and place of work not reported was known, the differences between social area A and N would still be as significant.

The distance traveled is less significant between Social Area A and N. Both areas had 86.4 per cent of their labor

force working within the city. However, Social Area N had
3.7 per cent more inside the SMSA whereas Social Area A had
5.0 per cent more traveling outside the SMSA.

The utilization of available means of transportation
and distance traveled becomes less significant as the
social conditions of the areas become more similar. This
observation is demonstrated clearly by Social Areas J and
K. Both of these areas were more similar in their social
characteristics than were Areas A and N. Both Area J and
K exhibit changes in the transportation pattern. In each
of the social areas utilized the social ranking index seems
to be the "best single criterion" for determining the dif-
ferentiation between areas as to existing social conditions.
However, these same differentiations are observable when
the other indexes, urbanization and segregation, are viewed
from the standpoint of percentages obtained by the indexes.

As was indicated in Chapter Five the lower socio-
economic social areas are characterized by a blue-collar
work force; larger portion of their women in the labor
force; and a greater number of dependent children. These
lower socio-economic social areas revealed a higher per-
centage of non-white population.

Also, these lower social areas relied more on public
transportation than did the high socio-economic areas.
The percentages of those working outside the SMSA was signi-
ficant. Again, the lower the socio-economic characteristics

of the social area, the difference in distance traveled
to place of work becomes greater.

There seems to be very little doubt that as the char-
acteristics of the social area vary, the pattern of trans-
portation will also vary. This evidence demonstrates the
great need for improved transportation facilities for the
lower socio-economic social areas. The Industrial Revolu-
tion and the repid growth of cities have continued these
patterns of social and economic behavior. However, with
the advancement of modern transportation will mean that
changes can and will occur. It would be most interesting
to see how these social areas change by the year 1970.

APPENDIX

BASIC DATA

The basic data for the study are contained in the 1960 census tract bulletin of the United States Census Bureau.

Subject	Source	Title, Page, etc.
1. Occupation	The United States Census Tract of Dallas, Texas, 1960	Table P-4, Characteristics of the Non-white population, pages 133-138 Table P-5, Characteristics of the White Population, pages 139-141.
2. Fertility		Table P-2, Age, Color, and Marital Status of Population by Sex, pages 44-102.
3. Women in Labor Force		Table P-3, Labor Force Characteristics of the Population, pages 103-132.
4. Sex and Age Composition		Table P-2.
5. Segregation a. White b. Non-white c. Foreign born		Table P-5. Table P-4. Table P-2.
6. Transportation a. Available Means b. Distance Traveled		Table P-3. Table P-3.

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