

THE IMPACT OF METROPOLITAN DOMINANCE
UPON THE STATUS STRUCTURE AND STATUS
CONSISTENCY OF RURAL-FARM AND
URBAN POPULATIONS

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ABSTRACT

THE IMPACT OF METROPOLITAN DOMINANCE UPON THE STATUS STRUCTURE AND STATUS CONSISTENCY OF RURAL-FARM AND URBAN POPULATIONS

by John Stoeckel

The impact of metropolitan dominance upon the status structure (occupation, education, income) and status consistency of the rural-farm and urban populations is analyzed. Hypotheses are generated around the two factors that articulate dominance, distance from urban centers, and size of urban center. The general hypotheses formulated are:

1. There is a direct relation between metropolitan dominance and the occupational status of rural-farm and urban populations.
 - (a) The occupational status of urban populations will be higher than the occupational status of rural-farm populations for all degrees of metropolitan dominance.
2. There is a direct relation between metropolitan dominance and the educational status of rural-farm and urban populations.
 - (a) The educational status of urban populations will be higher than the educational status of rural-farm populations for all degrees of metropolitan dominance.
3. There is a direct relation between metropolitan dominance and the income status of rural-farm and urban populations.

- (a) The income status of urban populations will be higher than the income status of rural-farm populations for all degrees of metropolitan dominance.
- 4. There is an inverse relation between metropolitan dominance and the status consistency of rural-farm and urban populations.
 - (a) The status consistency of urban populations will be lower than the status consistency of rural-farm populations for all degrees of metropolitan dominance.

In addition two related issues are attended to:

- (1) the predictive value of the indicators of dominance for the status structure and status consistency of the rural-farm and urban populations; and (2) the utility of the rural-farm and urban residence categories for sociological research.

Four specific hypotheses were not supported. These are: (1) the direct relationship between the occupational status of the urban population and metropolitan dominance--it was concluded that for the farm and urban populations at the county level of analysis the present occupational status scale is adequate and that dominance simply exerts little influence upon the urban occupational distribution. (2) The direct relationship between the educational status of the rural-farm and urban populations and metropolitan dominance--it was concluded that uncontrolled factors in the educational data such as sex, race, and age resulted in a loss of homogeneity in the farm and urban populations and produced sporadic variations in the educational status distribution. (3) The inverse relationship between the status consistency of the rural-farm population and

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metropolitan dominance--it was concluded that the lack of controls for educational status produced enough of a deviation in the variable to effect the total status consistency measure. (4) The higher status consistency for the rural-farm population than for the urban at all degrees of dominance--it was concluded that the extremely low status score for the farm occupational categories reduced the occupational status scores for the farm population. These low scores when used to compute the status consistency measure had the effect of reducing the total measure. A new measure of status consistency was proposed that could be used in current data and would take account of the deviation of each of the status distributions from their total intercorrelation. This minimizes the impact of the low farm occupational scores.

Analysis of the two related issues produced the following:

(1) the predictive value of the dominance indicators for the status structure and status consistency of the rural-farm and urban populations--it was concluded from a multiple R analysis that dominance was an adequate predictor for urban income status and status consistency, and rural-farm occupational and income status. The variable of functional specificity was proposed as an additional indicator that may add to the predictive utility of dominance.

(2) the utility of the rural-farm and urban residence categories for sociological research--it was concluded

from an analysis of variance between the rural-farm and urban categories for the status variables that for the North Central region as a whole the residence categories are mutually exclusive. However, inspection of mean status scores under occupational and educational status, and status consistency indicated close convergences between the residence categories at the highest degrees of dominance. Hence, sociological research dealing with rural-farm and urban status differentials must necessarily control such factors as size of place and distance from SMSA's if valid comparisons and generalizations are to be made.

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CHAPTER I

INTRODUCTION

The General Problem and Its Significance

The general problem of this thesis falls into the areas of population, ecology, and social stratification. More specifically, it investigates the impact that large urban centers¹ have upon the status structure and status consistency of the rural-farm and urban populations that occupy the hinterland of the urban centers.

It should be made explicit at this point that this study is concerned only with the population of two residence categories, the urban² and the rural-farm.³ Three major

¹Large urban center refers to Standard Metropolitan Statistical Areas which are defined as one or more contiguous counties containing at least one city of 50,000 or more (or a pair of contiguous twin cities of at least this joint size) and having a generally metropolitan character based on the county's social and economic integration with the central city. For more detailed discussion see U.S. Census of Population, 1960, Vol. PC (1) 1B, U.S. Summary.

²Urban population comprises all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages, and towns; (b) the densely settled urban fringe including both incorporated and unincorporated areas around cities of 50,000 or more; (c) unincorporated places of 2,500 inhabitants or more; (d) towns in New England and townships in New Jersey and Pennsylvania which contain no incorporated municipalities as subdivisions and have either 25,000 inhabitants or more or a population of 2,500 to 25,000 and a density of 1,500 persons or more

variables are used: the independent variable of urban impact or dominance, and two dependent variables, status structure and status consistency.

Essentially three points of significance underlie this investigation. The first is that it attempts to provide further insight and answers to the criticisms that have been aimed at the utility of the rural and urban residence categories in sociological research. Critics have generally taken the position that since American society is in an era of rapid social and cultural change and of increasing urban dominance, the differences between urban and rural have become negligible and hence "the concept rural in contradistinction to urban is not the homogeneous concept as

per square mile; and (e) counties in states other than the New England states, New Jersey, and Pennsylvania that have no incorporated municipalities within their boundaries and have a density of 1,500 persons per square mile. U.S. Census of Population: 1960. Numbers of Inhabitants, United States Summary. Final Report PC (1) - 1A (1961).

³The farm population consists of all persons living in rural territory on places of 10 or more acres if as much as \$50 worth of agricultural products were sold from the place in the reporting year plus those living on places of under 10 acres if as much as \$250 worth of agricultural products were sold from the place in the reporting year. United States Bureau of the Census, U.S. Department of Agriculture Series Census: AMS (P-27) No. 29 "Estimates of the Rural-Farm Population of the United States April 1960". (Washington, D.C.: United States Government Printing Office, 1961), p. 5.

assumed by many sociologists."⁴ One answer to this criticism is that the utility of the concepts would depend upon their ability to discriminate between social characteristics (e.g., occupation, education, and income). Consequently, if an operationalization would be successful in constructing two mutually exclusive, homogeneous categories then their utility would be supported. One objective of this thesis is to test such an operationalization constructed by the United States Bureau of the Census.⁵ If the operationalization is to have utility for sociological research, then

⁴ Neal Gross, "Sociological Variation in Contemporary Rural Life," Rural Sociology, Vol. 13 (Sept., 1948), p. 269. For additional commentary concerning the utility of the rural and urban concepts see the following: R. C. Bealer, Fern K. Willits, W. P. Kuvlesky, "The Meaning of Rurality in American Society: Some Implications of Alternative Definitions," Rural Sociology, Vol. 30 (1965), pp. 255-266; Richard Dewey, "The Rural-Urban Continuum: Real But Relatively Unimportant," American Journal of Sociology, Vol. LXVI (July, 1960), pp. 60-66; Lewis W. Jones, "The Hinterland Reconsidered," American Sociological Review, Vol. 20 (Feb., 1955), pp. 40-44; Oscar Lewis, Life in a Mexican Village (Champaign: University of Illinois Press, 1951); Charles K. Nichols, "A Suggested Technique for Determining Whether a Community Can Be Classified as Rural or Urban," Rural Sociology, Vol. 5 (Dec., 1940), pp. 454-460; Charles T. Stewart Jr., "The Urban-Rural Dichotomy: Concepts and Uses," American Journal of Sociology, Vol. 64 (Sept., 1958), pp. 152-158.

⁵ The operational definitions constructed by the U.S. Bureau of Census have been refined considerably in the last two decades. In 1950 the definition of urban was changed from simply including persons living in incorporated places of 2,500 inhabitants or more and in areas (usually minor civil divisions) classified as urban under special rules relating to population size and density to the more inclusive definition stated above. Similarly in 1960, the definition of rural-farm was changed from persons living on farms as determined by the respondents answer to the question "Is this house on a farm (or ranch)?", to a more objective criterion of size of place and value of produce. U.S. Census of Population: 1950, Detailed Characteristics, United States Summary. Report PC-1, pp. viii, ix.

traditional propositions concerning the status differentials between the urban and rural-farm populations (e.g., higher occupational, educational, and income level for the urban than for the rural-farm population) would become testable.

The second is that the investigation makes a contribution to "the most neglected area of sociology--the analysis of the determinants of social structure."⁶ Schnore maintains that since the time of Durkheim the trend in sociology has been toward studies of social structure as the independent variable and its effects upon the behavior of individuals. He points out that Durkheim, ("in the best tradition of sociology") in his early work on social morphology was primarily concerned with the factors that gave rise to social structure and not to the behavior of individuals.⁷ Further, Durkheim regarded such social phenomena as collective

⁶Leo Schnore, "Social Morphology and Human Ecology," American Journal of Sociology, Vol. LXIII (May, 1958), p. 632.

⁷Ibid., p. 629. Sorokin makes a similar point in his discussion of Durkheim. In the first portion of the Division of Labor Durkheim discusses "the principal effects of the variation of labor division, as a social factor, on different sides of social life and psychology . . . but in the second part of the book, he reverses his equation, and asks: What are the causes (determinates) responsible for an increase in the division of labor itself. . . ." Pitikim Sorokin, Contemporary Sociological Theories (New York: Harper and Row, 1928), pp. 467-71. This emphasis is illuminated further by Schnore who points out that the two major inquiries in Durkheim's social morphology focused on the study of the environmental basis of social organization and the study of population phenomena especially, size, density and spatial distribution.

representations, etc. (shared norms and values) as mere "emanations" of underlying social morphology or structure.⁸ Hence, if one holds to this position it places the analysis of structure itself as a logically prior problem⁹ to the study of the human behavior as manifested in organizational forms. Consequently, the second objective of this study is to treat the status structures of the urban and rural-farm populations as the dependent variables, and propose and test possible determinants of them.

Finally, this study is significant in that it deals with a dimension of the status structure, that is, status consistency,¹⁰ as a dependent variable of populations (rural-farm and urban) and not individuals. The major portion of

⁸ E. Durkheim, "Representatives Individuelles et Representations Collectives," Revue de metaphysique et de moral, VI (1898), 273-302.

⁹ Schnore, op. cit., p. 632.

¹⁰ Like many of the concepts in sociology, status consistency lacks consensus of definition. However, in general, it is viewed as the relative correspondence of an individual's positions on rankings along various status hierarchies. For further commentary on the concept see the following: Emile Benoit-Smullvan, "Status, Status Types, and Status Interrelations," American Sociological Review, Vol. 9 (April, 1944), pp. 151-161; Leonard Broom, "Social Differentiation and Stratification," in R. K. Merton, L. Broom and L. S. Cottrell Jr. (eds.) Sociology Today (New York: Basic Books, 1959), pp. 429-441; G. H. Fenchel, "Subjective Status and Equilibration Hypothesis," Journal of Abnormal and Social Psychology, Vol. 46 (Oct., 1951), pp. 476-79; Edward Sampson, "Status Congruence and Cognitive Consistency," Sociometry, Vol. 32 (June, 1963), pp. 146-162; Gregory Stone and William Form, "Instabilities in Status," American Sociological Review, Vol. 18 (April, 1953), pp. 149-62; Herbert Vermilye, "On Measuring Status Consistency," American Sociological Review, Vol. 28 (June, 1963), pp. 455-461.

the research on status consistency has dealt only with the individual's status consistency and its impact upon such phenomena as an individual's performance in small groups,¹¹ political attitudes,¹² suicide,¹³ participation and non-participation in voluntary associations,¹⁴ preference for change in various type organizations,¹⁵ psychological disturbances such as "frustration" and "uncertainty,"¹⁶ class consciousness,¹⁷ and anxiety in reaction to status

¹¹Stuart Adams, "Status Congruency as a Variable in Small Group Performance," Social Forces, Vol. 32 (Oct., 1953), pp. 16-22.

¹²William Kenkel, "The Relationship between Status Consistency and Politico-Economic Attitudes," American Sociological Review, Vol. 21 (June, 1956), pp. 365-368; Gerhard Lenski, "Status Crystallization: A Non-Vertical Dimension of Social Status," American Sociological Review, Vol. 19 (Aug., 1954), pp. 405-413.

¹³Jack Gibbs and Walter Martin, "A Theory of Status Integration and Its Relationships to Suicide," American Sociological Review, Vol. 23 (April, 1958), pp. 140-147; Jack Gibbs, "On Status Integration and Suicide Rates in Ceylon," American Journal of Sociology, Vol. 64 (May, 1959), pp. 585-591; Jack Gibbs, "On Status Integration and Suicide Rates in Tulsa," American Sociological Review, Vol. 24 (June, 1959), pp. 392-396.

¹⁴Gerhard Lenski, "Social Participation and Status Crystallization," American Sociological Review, Vol. 21, (Aug., 1956), pp. 458-464.

¹⁵Irving Goffman, "Status Consistency and Preference for Change in Power Distribution," American Sociological Review, Vol. 22 (June, 1957), pp. 275-281.

¹⁶Elton Jackson, "Status Consistency and Symptoms of Stress," American Sociological Review, Vol. 27 (Aug., 1962), pp. 469-480.

¹⁷Warner Landecker, "Class Crystallization and Class Consciousness," American Sociological Review, Vol. 28 (April, 1963), pp. 219-229.

threats.¹⁸

By concentrating upon the internal consistency of the individual's ranking, these studies have constructed statistical groups of people with homogeneous or heterogeneous ranks. However, it is one thing to form such statistical classes and quite another to assume that they are meaningful social units. This continued attention to the individual as the unit of analysis and the exclusion of the aggregate aspects of social stratification only promotes the "common social psychological delusion" that the individual and not the group is the unit of social ranking.¹⁹ Hence, a third objective of this study is to focus upon the status consistency of groups or aggregates as the unit of analysis.

Theoretical Framework

The theoretical orientation that generates the hypotheses to provide an answer to the problem is metropolitan dominance. Two of the earliest formulations of the dominance theory were by N. S. B. Gras²⁰ in An Introduction

¹⁸ Saad Nagi, "Status Profile and Reactions to Status Threats," American Sociological Review, Vol. 28 (June, 1963), pp. 440-443.

¹⁹ Robert W. Hodge, "The Status Consistency of Occupational Groups," ASR, Vol. 27 (June, 1962), p. 336.

²⁰ N. S. B. Gras, An Introduction to Economic History (New York: Harper and Brothers, 1922).

to Economic History and by R. D. McKenzie²¹ in The Metropolitan Community. However, probably the most systematic formulation of the theory was made by D. J. Bogue in his work on the structure of the metropolitan community. Bogue maintains that the metropolis or modern large and complex city exercises an organizing and integrative influence upon the social organization of a broad expanse of territory far beyond its civil boundaries, and thereby dominates populations within this area of influence.²² The rationale upon which this position is based is provided by Bogue in the following:

The metropolis is usually the largest and most complex (the farthest removed from the "average" city) of all of the cities in the territory. Because it is able to assemble cheaply a varied array of raw materials and products from all parts of the world; because a large number of specialized components and skills are required in the production of the goods required to sustain human beings at their present level of living; because up to a certain point machine production increases in efficiency with an increased scale of operations; and because certain mutual benefits appear to accrue to business enterprises from their location in proximity to each other the large city is able to produce and distribute more varied goods and services than is a smaller city. The more specialized the goods, and the more the goods are amenable to mass production, the greater

²¹R. D. McKenzie, The Metropolitan Community (New York: McGraw-Hill, 1933).

²²Donald J. Bogue, The Structure of the Metropolitan Community, A Study of Dominance and Subdominance (Ann Arbor: Rackham School of Graduate Studies, University of Michigan, 1950), p. 5.

these industrial and commercial advantages of large cities seem to become.²³

This formulation of metropolitan dominance is grounded in a traditional ecological frame of reference which has been utilized by Robert Park,²⁴ Amos Hawley,²⁵ O. D. Duncan,²⁶ and Leo Schnore.²⁷ This frame of reference is composed of the following four major classes of variables: population, defined as an aggregate of persons; technology, defined as a set of techniques employed by a population to gain sustenance from its environment to facilitate the organization of sustenance-producing activity;²⁸ environment, defined as the topography of land, natural resources, and the climatic conditions of the region a population inhabits in addition to the size of the population itself;²⁹ and social organization

²³Ibid., pp. 5,6. The major assumption underlying this position is that the metropolis and the hinterland are interdependent and are parts of one organic whole.

²⁴R. E. Park, "Human Ecology," American Journal of Sociology, Vol. XLII (July, 1936), pp. 1-15.

²⁵Amos H. Hawley, Human Ecology, A Theory of Community Structure (New York: The Ronald Press Co., 1950), Chapters 11 and 12.

²⁶O. D. Duncan, "Human Ecology and the Population Studies," in P. Hauser and O. D. Duncan (eds.), The Study of Population (Chicago: The University of Chicago Press, 1959), pp. 678-716; "From Social System to Ecosystem," Sociological Inquiry, Vol. XXXI (Spring, 1961), pp. 140-149.

²⁷Schnore, op. cit., pp. 620-634.

²⁸O. D. Duncan, Human Ecology and Population Studies, op. cit., p. 682.

²⁹Schnore, op. cit., p. 629.

defined as a collective adaptation of a population to the character of its environment.³⁰ Ecologists maintain that it is the interaction of a population and its technology within an environment that produces various forms of social organization. Thus, the urban center with its superior population size and technological advantage can be viewed as exerting an influence within an environmental context upon an aspect of the social structure of the organization of its hinterland population, that is, status structure and status consistency. Status structure refers to the arrangement or pattern of the distribution of a population on the three hierarchies of occupation, education, and income; and status consistency refers to the extent to which the distribution of a population on each of the three hierarchies correspond to each other.

The extent or degree of the metropolitan influence upon these variables is a function of two central factors, 1) the size of the metropolitan center and, 2) the accessibility (distance) of the hinterland population to the metropolitan center.

The importance of size as an indicator of metropolitan dominance centers around the general notion that the size of the population covaries with its technological

³⁰O. D. Duncan and Leo Schnore, "Cultural, Behavioral and Ecological Perspectives in the Study of Social Organization," AJS, Vol. VLXV (Sept., 1959), p. 135.

level.³¹ More specifically, Hawley points out that the size of a population imposes limits on both the extent of specialization and the number of different activities that may be carried on simultaneously. Specialization presupposes a sufficient number of users of the given service to support a concentration of effort on its production. In a small population the degree of specialization of activity is necessarily slight. On the other hand every increment in population size increases the extent to which different types of specialization may be developed and more efficient means of gaining sustenance can be achieved. Obviously, a population characterized by small numbers cannot adequately staff an establishment such as a modern mass-production factory, nor can it support a great variety of sustenance-producing activities. Hence, its technology is restricted to what can be manufactured and

³¹The proposition that there is a correlation between population size and technological level or development is by no means recent. Sorokin points out that such theorists as M. Kovalevsky, A. Coste, E. Durkheim, F. Ratzel, P. Mongeolle, E. Levasseur, E. Drepheil, C. Gine, F. Carli, W. Summer and A. Keller maintained that the growth of a population and its consequence, an increase in its density, have been responsible for an improvement in the technique of economic production and for a transition from less intensive forms of production to more intensive ones. An increase in population size makes the methods of production insufficient, which were quite satisfactory for a smaller population. "Hence, the increasing pressure of this factor. It urges the invention of more efficient methods of production, which will be fit to satisfy the needs of an increased population. This consequently leads to inventions and through them, a betterment of the techniques of production," Sorokin, op. cit. , p. 388.

operated by relatively few individuals. The increase of manpower that results from population growth permits the adoption of more complicated and efficient processes, and to the extent that it does so the number and diversity of sustenance-producing activities may also be increased.³²

Since population size is directly related to technology it would be expected that communities of varying sizes would exert varying degrees of influence upon their hinterland populations. Empirical research tends to provide support for this general proposition. Various studies have found gradients of dominance in terms of size of place with such population characteristics as wholesale and retail trade,³³ mobility and socioeconomic position,³⁴ age-sex structure and fertility,³⁵ and farm land tenure and utilization.³⁶

³²Hawley, op. cit., pp. 122, 123.

³³Donald J. Bogue, The Structure of the Metropolitan Community (Ann Arbor: University of Michigan Press, 1949); Vance, Rupert and Sara Smith, "Metropolitan Dominance and Integration," in Hatt and Reiss (eds.), Cities and Society (New York: Glencoe Free Press, 1964).

³⁴O. D. Duncan and A. Reiss, Social Characteristics of Urban and Rural Communities (New York: John Wiley, 1950); H. H. Winsborough, "Occupational Composition and the Urban Hierarchy," ASR, Vol. 25, No. 6 (Dec., 1960), pp.

³⁵O. D. Duncan, "Gradients of Urban Influence on the Rural Population," Midwest Sociologist, Vol. 18 (1956), pp. 27-30.

³⁶James D. Tarver, "Ecological Patterns of Land Tenure, Farm Land Uses, and Farm Population Characteristics," Rural Sociology, Vol. 28 (June, 1963), pp. 128-145.

The importance of the second factor, accessibility of the hinterland to the metropolitan center, rests upon the following assumption: varying degrees of accessibility of hinterland populations represent varying degrees of interaction with the metropolitan center and hence accessibility is taken to be a variable which will covary with dominance.³⁷ The rationale for this assumption is that in terms of time, cost, and expenditure of energy a population can enter most easily into a division of labor with a metropolitan center located at a highly accessible point, namely at a shorter distance. Exchange and interaction with a metropolitan center located at the most inaccessible point can be achieved only at a maximum expenditure of time, cost, and energy. Further, the distance to be traveled limits the opportunity to transport goods, services, and persons from the hinterland to the metropolitan center.³⁸ A permanent requirement for changing the location of any object is the necessity of overcoming distance.³⁹ Consequently, varying distances of a hinterland population from a metropolitan center can be viewed as varying degrees

³⁷Bogue, op. cit., p. 21.

³⁸Ibid.

³⁹This is Hawley's "friction of space" notion which holds that "space itself is something to be passed over and thus it calls for an expenditure of time and energy. In other words the friction of space is small or great as distance is short or long. . .", Hawley, op. cit., p. 237.

of dominance. Empirical research tends to support this proposition. Studies have found gradients of dominance with distance and the following population characteristics: retail and wholesale trade;⁴⁰ average monthly rental value of dwelling unit, democratic vote, and proportions of operatives and kindred workers in the labor force;⁴¹ distribution of production centers and administration centers;⁴² change in population size;⁴³ newspaper circulation;⁴⁴ average level of farm living, number of tractors per farm, and size of farm;⁴⁵ farm land tenure and farm land utilization;⁴⁶ farm land value, and farm buildings per acre;⁴⁷ sex ratio and middle age of rural farm

⁴⁰Bogue, op. cit., pp. 153-173.

⁴¹Leslie Kish, "Differentiation in Metropolitan Areas," ASR, Vol. 19, No. 4 (August, 1954).

⁴²D. M. Pappenfort, "The Ecological Field and the Metropolitan Community," AJS, Vol. LXIV, No. 4 (Jan., 1959).

⁴³C. M. Grigg, "A Proposed Model for Measuring the Ecological Process of Dominance," Social Forces, Vol. 36, No. 1 (Dec., 1957).

⁴⁴R. E. Park, "Urbanization as Measured by Newspaper Circulation," AJS, Vol. XXXV (July, 1929), pp. 60-79. J. A. Kinnemann, "Newspaper Circulation from Small Metropolitan Centers," ASR, Vol. II (April, 1946), pp. 150-157.

⁴⁵T. R. Anderson and Jane Collier, "Metropolitan Dominance and the Hinterland," Rural Sociology, Vol. 21 (June, 1956), pp. 152-157.

⁴⁶Tarver, op. cit., pp. 128-145.

⁴⁷Harold Goldsmith and James H. Copp, "Metropolitan Dominance and Agriculture," Rural Sociology, 1964, pp. 385-395.

persons.⁴⁸

Theoretic Hypotheses

In light of the theoretical framework a logical question follows, that is, what hypotheses can be generated that will provide answers to the problem of what is the effect of metropolitan dominance upon the status structure and status consistency of rural-farm and urban populations?

In order to formulate the hypotheses additional observations concerning metropolitan dominance and the status structure and status consistency of the rural-farm and urban populations must be made. It would generally follow from the stated theory that hinterland populations under the most intensive degree of dominance would resemble the metropolitan population more than a hinterland population under a less degree of dominance. For example, it would be expected that a rural-farm population under extreme metropolitan dominance would exhibit characteristics more similar to the urban population of the metropolitan center than the rural-farm population that is under less dominance. Similarly, it would be expected that an urban population under less dominance would exhibit characteristics less urban in character than the urban population under high

⁴⁸Walter T. Martin, "Ecological Change in Satellite Rural Areas," ASR, Vol. XXII (April, 1957), pp. 173-183; E. T. Hiller, "Extension of Urban Characteristics into Rural Areas," Rural Sociology, Vol. 6 (Sept., 1941), pp. 242-257.

dominance. Dominance then is viewed as an indicator of "rural-farmness" and "urbaness". "Rural-farmness" and "urbaness" refer to the notion that certain characteristics peculiar to these populations will be more intense and less intense, respectively, as metropolitan dominance decreases. For example, the traditional differences between occupational, educational, and income status (i.e., higher overall status for the urban population), for the rural-farm and urban populations would be expected to be maintained as dominance decreased, although the status level for all three factors would tend to decrease. Hence, the following theoretic hypotheses are proposed:

Hypothesis I: There is a direct relation between metropolitan dominance and the occupational status of rural-farm and urban populations.

Sub-Hypothesis: (a) The occupational status of urban populations will be higher than the occupational status of rural-farm populations for all degrees of metropolitan dominance.

Hypothesis II: There is a direct relation between metropolitan dominance and the educational status of rural-farm and urban populations.

Sub Hypothesis: (a) The educational status of urban populations will be higher than the educational status of rural-farm populations for all degrees of metropolitan dominance.

Hypothesis III: There is a direct relation between metropolitan dominance and the income status of rural-farm and urban populations.

Sub Hypothesis: (a) The income status of urban populations will be higher than the income status of rural-farm populations for all degrees of metropolitan dominance.

From the above discussion it can be reasoned further that the status consistency of urban and rural-farm populations would be expected to vary inversely with metropolitan dominance. This would follow since the populations of metropolitan areas are characterized by a high degree of specialization, division of labor or social differentiation, and racial and ethnic heterogeneity. As a result the populations under the most intense metropolitan influence would have a lower status consistency than the populations under the least metropolitan influence. More specifically, since urban populations are characterized by the factors mentioned for the metropolitan area and the farm population traditionally characterized as more homogeneous in composition, the status consistency of the urban population would be expected to be lower than the status consistency for the farm population under all degrees of metropolitan dominance. Hence, the following theoretical hypothesis is proposed:

Hypothesis IV: There is an inverse relation between metropolitan dominance and the status consistency of rural-farm and urban populations.

Sub Hypothesis: (a) The status consistency of urban populations will be lower than the status consistency of rural-farm populations for all degrees of metropolitan dominance.

Thesis Organization

The remainder of the thesis consists of Chapters II through IV. Chapter II presents the methodological

framework utilized in the study. It deals with the operational definitions of the independent and dependent variables, the operational hypotheses, and the statistical techniques utilized to test the hypotheses.

Chapter III reports the results of the tests of the operational hypotheses, while Chapter IV discusses and draws conclusions concerning the results.

CHAPTER II

METHODOLOGY*

This chapter presents the operational definitions of the independent and dependent variables, the operational hypotheses, and the statistical techniques utilized to test the hypotheses.

Operational Definitions

The first variable operationalized is the independent variable, metropolitan dominance. As stated above the effect

*The data in this study is taken from the rural-farm and urban populations of counties for all twelve states (Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas) of the North Central region. The data used are from the "Rural America Printouts," and were programmed by the Armours in Chicago from the U.S. Bureau of Census PC-LCD summary records for 1960. Scratch tapes of the printout results were constructed for use in the CDC-3600 computer to facilitate statistical analysis.

The North Central region was chosen because it makes up approximately one-third of the total population of the United States, and is considered essentially representative of the majority of the national population. Representation here refers specifically to the white population since the nonwhite population was generally excluded from the analysis. This was done since the proportion of nonwhites in the North Central region is less than 7% while in the South nonwhites comprise over 20% of the total. Furthermore, 90% of the nonwhites in the Southern states are categorized as rural-farm while 90% in the North Central states are categorized as urban. Consequently, nonwhites in the South and North Central represent two very different types of populations and any attempt to generalize from one to the other would only produce spurious results.

of dominance on a hinterland population is a function of the distance the hinterland population is from the metropolitan area and the size of that metropolitan area. Thus, operational definitions of these variables provides indicators of dominance. The first indicator, distance, was operationalized in the following manner:

1. Locate the central city of each SMSA on a map which includes the state and county boundaries as well as the locations of SMSA's.

2. Using the central city of each SMSA as the center, draw concentric rings around each SMSA. The first or innermost circle will have a radius of 50 miles, the second circle will have a radius of 100 miles, the third circle will have a radius of 150 miles, etc. This creates bands around each SMSA, each band being 50 miles wide.

3. Assign the value "1" to the first band, i.e., the band formed by the area of the innermost circle.

4. Assign the value "2" to the second band, i.e., the band formed by the area between the first and second circles.

5. Continue assigning values to bands. Each band is assigned one more than the value of the preceding band.

6. The major portion of each county will be covered by one or more bands. (A county will be covered by more than one band only when the bands from two or more SMSAs overlap). Determine for each county the band or bands which cover it.

7. (a) If only one band covers the county, assign the value of that band to the county.

(b) If more than one band covers the county, assign the value of the lowest valued band to the county.

The selection of the 50 mile distance band is essentially arbitrary. However, several factors aided in the selection. Fifty miles is assumed to approximate the maximum distance which an individual will travel to work on a regular basis. Also, local TV stations do not have broadcast beams of much greater length than fifty miles, and few newspapers excluding those of the very large metropolitan centers have coverage beyond this distance. Therefore, the distance of 50 miles seemed reasonable.¹

The second indicator of dominance, size, was operationalized by ranking all SMSA counties on population size and all non-SMSA counties on the percent of their population categorized as urban. The total scale is as follows:

SMSA Counties

1,000,000 and over
500,000 to 999,999
250,000 to 499,999
249,999 and under

Non-SMSA Counties

70% or more urban
55.0% to 69.9% urban
40.0% to 54.9% urban
25.0% to 39.9% urban
24.9% and under

¹John Stoeckel and J. Allan Beegle, "The Relationship between Rural-Farm Age-Structure and Distance from Nearest Urban Center," Forthcoming in Rural Sociology, Sept., 1966.

The rationale for constructing the scale by population size of SMSA's and percent urban of non-SMSA's is that if SMSA's were categorized on the basis of percent urban then there would be little differentiation since the urban population comprises approximately 97 to 99 percent of the total. Hence, a measure of the impact of SMSAs of different sizes would be lost. Also, categorizing non-SMSA counties on population size where there is a great deal of differentiation in the percent urban and rural-farm would obscure the influence of the urban population on these small counties. Consequently, the total scale can be viewed as a ranking of "urbaness" (hereafter referred to as urbanity) where the highest influence is exerted by the SMSA of 1,000,000 population and over and the lowest influence exerted by non-SMSA's having 24.9% or less urban population.

The third operational definition of dominance combines the factors of size of metropolitan area and distance of the hinterland from the metropolitan area. This measure was constructed in the following manner: Each SMSA county of the North Central region was assigned a numerical value that was a linear function of the size of the population in the county, up to a population of 2 million people. The value assigned increased by 1 for each 100,000 population. Hence each SMSA county was assigned a value from 20 down to 0. For example, a county with a population of 2,000,000

received a value of 20, a county with a population of 1,000,000 a value of 10, etc. After the assignment of these size categories the distance measure of 50 mile bands was drawn from the central city of each SMSA as in the simple distance measure. The resulting bands were then assigned a value that declined as a function of the number of 50 mile units from the SMSA. This decline was by a numerical value of 2 for each distance band.

Hence, each county within the distance bands was assigned a numerical value which was a combined function of the size of the SMSA influencing it and of the distance from that SMSA. Necessarily, many counties received a value from several SMSA's. In this instance the value assigned to the county was the highest value. Furthermore, if the county was an SMSA county with a smaller value than the influence value assigned it from a larger SMSA, the values were added--except that no influenced county could receive a higher value than the influencing SMSA. For example, a county is designated as an SMSA county with a 1960 population of 1,131,483. It is assigned a size value of 11. The counties included in the band having a radius of 50 miles from this SMSA are assigned a value of 9, counties in the 50-100 mile band a value of 7, etc. Suppose that in the band value of 50-100 miles one of the counties was an SMSA county with a population of 600,000. The addition of the 7 value from the large SMSA and the 6 from its own population would give this county a total value of 13.

Since this value, however, exceeds the value of the larger SMSA the value assigned the county was 11 rather than 13.²

The rationale for these procedures was as follows: as stated above, dominance is a function of both size of metropolitan area and the distance of the metropolitan area from the hinterland population. However, in portions of the North Central region cities of different size are relatively close. It would appear that the social and economic forces in counties with smaller cities close to large metropolitan centers would be influenced by both the immediate city and the larger metropolitan center. However, there is no reason to assume that the results of this combination would result in forces greater in the hinterland area than in the county with the large metropolitan center. This led to the restriction on the additive values of multiple influence which prevented a county from having a larger total value than the highest assigned for any county influencing it.³

The rationale for assigning the maximum value of population size at 2,000,000 relates to the way in which metropolitan dominance is transmitted. While it is expected that the size of the dominant metropolitan area is a significant factor in determining its influence, it was

²Dale Hathaway, J. A. Beegle, and Keith Bryant, Rural America, Census Monograph, forthcoming, pp. 13, 14.

³Ibid., p. 15.

felt that at some point increases in population merely were duplications of technological functions and conditions that existed in areas having a maximum population density. Thus, it was arbitrarily decided that an SMSA having two million population essentially would possess the technological base that would exert the maximum influence over its hinterland populations.⁴

Four dependent variables are operationalized. These are, occupational status, educational status, income status, and status consistency.

Occupational status was defined operationally in terms of O. D. Duncan's "Socioeconomic Index for Major Occupation Groups." Duncan constructed this index for each broad occupation group for fully employed males in the 1950 census by means of a multiple regression equation in which the age-adjusted education and income characteristics of a given occupation were used as predictor or estimator variables⁵ for the socioeconomic status of the

⁴Ibid., p. 16.

⁵The regression equation used to predict occupational status score was as follows: $X_1 = 0.59 X_2 + 0.55 X_3 - 6.60$ where X_1 is the predicted occupational status score; X_2 is the age adjusted percent of persons in the occupation with an annual income of \$3,500 or more; and X_3 is the age adjusted percent of persons in the occupation that have completed high school, i.e., the percentage reported in the census as "high school 4," "college 1 to 3," or "college 4 or more" years of school completed. Albert J. Reiss, Jr., Occupations and Social Status (Glencoe: The Free Press, 1961), pp. 124-125.

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occupation. The computed status scores for the broad occupation groups are as follows:⁶

Major Occupation Group	Occupational Status Score
Professional, technical, and kindred workers	75
Farmers and farm managers	14
Managers, officials, and proprietors, exc. farm	57
Clerical and kindred workers	45
Sales workers	49
Craftsmen, foremen, and kindred workers	31
Operatives and kindred workers	18
Private-household workers	8
Service workers, exc. private household	17
Farm laborers and foremen	9
Laborers, except farm and mine	7

Duncan's rationale for the selection of education and income as the strategic characteristics of occupations revolve around the functional relationship between occupation, education, and income. He makes this point in the following:

The large majority of persons in the labor force, engaged in one occupation or another, have completed their formal education. Moreover, from a functional standpoint, education may be considered in large measure as a preparation for the pursuit of an occupation, or as the acquisition of qualifications for an

⁶Ibid., p. 155.

occupation. Hence, there is both a functional nexus and a temporal order in the relationship of occupation to education. For most persons, the bulk of the income received consists of compensation for rendering the services of their occupations. Income and occupation, therefore, are functionally related. We have, therefore, the following sequence: a man qualifies himself for occupational life by obtaining an education; as a consequence of pursuing his occupation, he obtains income. Occupation, therefore, is the intervening activity linking income to education.⁷

Another factor contributing to Duncan's rationale is that the occupational status measure derived from income and education is directly related to the "prestige" of the occupation. This is supported since the occupational status scores Duncan obtained were highly correlated with the NORC occupational prestige ratings. As a result, Duncan maintains that his scale can be substituted in any research for the NORC scale and provides a table of transformations for all of the occupations in the detailed classification of the Bureau of the Census for 1950.⁸

The Duncan scale was selected for use in this study for several reasons. First, Duncan constructed this scale from aggregate data from the categories of the U.S. Bureau of Census. Since the present study deals with aggregate data from the census his scale would be more appropriate to operationalize occupational status than other occupational scales based on data for the individual. Second, his scale correlated highly with the NORC scale for occupational

⁷Ibid., pp. 116-117.

⁸Ibid., pp. 263-275.

prestige. Hence, by using Duncan's scale a legitimate measure of "prestige" can be inferred as an added dimension of occupational status. Finally, Duncan's scale included occupational status scores for the farm occupations (i.e., farmers and farm managers, and farm laborers and foremen). The only other occupational status scale of possible use, the U.S. Bureau of Census Socioeconomic Status Scale, does not contain scores computed for farm occupations. Consequently, the Duncan scale was adopted as the operational measure of a population's occupational status.

The procedures for ascertaining the occupational status of the rural-farm and urban populations for each county of the North Central region were as follows: the occupational distribution of the rural-farm and urban white male populations in each county were standardized to the Duncan scale, and a single mean status score computed for each county. This was accomplished by multiplying the number of rural-farm and urban white persons of a county in each occupational category by the appropriate status score. These results were summed and a mean status score for the county for each residence category computed.

The second and third dependent variables, educational status and income status, were operationally defined in terms of scales constructed by the U.S. Bureau of Census for 1960. The status scores for education were derived by the census as follows: The cumulative percentage distribution by education of chief income recipients in families

as of 1959 were computed. The score assigned to each category of education was the midpoint of the cumulative percentage interval for the category. (For example, persons who had completed one or more years of college were found to be distributed between the 83rd and 98th percentiles. A score of 90 was thus assigned to persons who had completed one or more years of college.) The status scores for family income were obtained in a similar manner.⁹ The resultant status scores for education (total males and females 25 years and older) and income (total family) were as follows:¹⁰

<u>Education</u>		<u>Income</u>	
<u>Category</u>	<u>Status Score</u>	<u>Category</u>	<u>Status Score</u>
One or More Years of College Completed	90	\$25,000 and over	100
		\$15,000 - \$24,999	98
		\$10,000 - \$14,999	94
4 Years of High School Completed	67	\$9,000 - \$9,999	88
		\$8,000 - \$8,999	83
		\$7,000 - \$7,999	76
1-3 Years of High School Completed	42	\$6,000 - \$6,999	66
		\$5,000 - \$5,999	53
		\$4,000 - \$4,999	38
8 Grades or Less Completed	10	\$3,000 - \$3,999	24
		\$2,000 - \$2,999	15
		\$1,000 - \$1,999	7
No School Years Completed	1	Under \$1,000	2
		(Including No Income)	

⁹U.S. Bureau of the Census, Methodology and Scores of Socioeconomic Status. Working Paper, No. 15, Washington, D.C., 1963, p. 4.

¹⁰These scores were computed from aggregates of the education and income categories constructed by the U.S. Census and used specifically for the data in this study. For a more detailed description of education and income categories see Appendix III and IV of the U.S. Bureau of Census Working Paper No. 15.

Since the data used in this study were taken from the 1960 census, the U.S. Bureau of Census Scales for education and income seemed most applicable. More specifically, the data for education and income in this study is education for persons 25 years and older and income for families. This matches with data used by the census to construct the status scores.

The procedures for computing the education and income status of the rural-farm and urban populations for counties is identical with the procedures for computing occupational status. The educational distribution of rural-farm and urban persons 25 years and older and the income distribution of white rural-farm and urban families were standardized to the U.S. Bureau of Census scales. This was achieved by multiplying the number of persons in each education and income category by the appropriate scale score. These results were summed and mean educational and income status scores computed for each county.

The fourth and final dependent variable, status consistency, was operationalized in a way similar to the technique used by Gerhard Lenski in his study of status crystallization.¹¹ However, in the present study the county population and not the individual is the unit of analysis. Status consistency is operationally defined as the square root of the sum of the squared deviations from the average

¹¹Lenski, op. cit., p. 406.

of the three means--occupation, education and income, status scores--subtracted from 100¹² for the rural-farm and urban populations of a given county.¹³ For example, to compute the status consistency of the rural-farm population for a given county, find the mean status score for the farm population on each of the three status scales. Then compute the mean of these three scores and their individual deviations from the mean. Square each of these deviations and sum them. Then take the square root of this quantity and subtract it from 100. The resulting figure gives the extent of the deviation or consistency of the mean status scores of a county's rural-farm population around their total mean. Thus, the more highly consistent a population's status, the more nearly the consistency score will approach one-hundred; conversely, the less consistent the population's status, the more nearly the consistency score will approach zero.

¹²The technique of subtracting the resulting figure from one hundred was employed so that a population whose status was highly consistent would have numerically higher consistency scores than a population whose status was low in consistency. This was done primarily to avoid semantic difficulties.

¹³The formula for the computation is as follows:

Status Consistency of a Population of a County =

$$100 - \sqrt{\sum_{i=1}^3 (X_i - \bar{X})^2}$$

Where X_i for $i = 1 \dots 3$ refers to the three status dimensions.

Operational Hypotheses

Given the operational definitions of the independent (metropolitan dominance) and dependent (status structure and status consistency) variables, the theoretic hypotheses in Chapter I are stated in operational form for the rural-farm and urban population of each county of each state in the North Central region of the United States in the following manner:

Hypothesis I: A. There is an inverse relation between the mean occupational status scores of rural-farm and urban males of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The mean occupational status scores of urban males will be higher than the mean occupational status scores of rural-farm males in all categories of distance of the counties from the nearest SMSA.

B. There is a direct relation between the urbanity values of counties and the mean occupational status scores of rural-farm and urban males of those counties.

Sub-Hypothesis: (b) The mean occupational status scores of urban males will be higher than the mean occupational status scores of rural-farm males in all urbanity categories of counties.

C. There is a direct relation between the size-distance value of counties and the mean occupational status scores of rural-farm and urban males of those counties.

Sub-Hypothesis: (c) The mean occupational status scores of urban males will be higher than the mean occupational status scores of rural-farm males in all size-distance categories of counties.

Hypothesis II: A. There is an inverse relation between the mean educational status scores of rural-farm and urban persons 25 years and older of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The mean educational status scores of urban persons 25 years and older will be higher than the mean educational status scores of rural-farm persons 25 years and older in all categories of distance of the counties from the nearest SMSA.

B. There is a direct relation between the urbanity values of counties and the mean educational status scores of rural-farm and urban persons 25 years and older of those counties.

Sub-Hypothesis: (b) The mean educational status scores of urban persons 25 years and older will be higher than the mean educational status scores of rural-farm persons 25 years and older in all urbanity categories of counties.

C. There is a direct relation between the size-distance values of counties and the mean educational status score of rural-farm and urban persons 25 years and older of those counties.

Sub-Hypothesis: (c) The mean educational status scores of urban persons 25 years and older will be higher than the mean educational status scores of rural-farm persons 25 years and older in all size-distance categories of counties.

Hypothesis III: A. There is an inverse relation between the mean income status scores of rural-farm and urban families of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The mean income status scores of urban families will be higher than the mean income status scores of rural-farm families in all categories of distance of the counties from the nearest SMSA.

- B. There is a direct relation between the urbanity values of counties and the mean income status scores of rural-farm and urban families of those counties.

Sub-Hypothesis: (b) The mean income status scores of urban families will be higher than the mean income status scores of rural-farm families in all urbanity categories of counties.

- C. There is a direct relation between the size-distance values of counties and the mean income status scores of rural-farm and urban families of those counties.

Sub-Hypothesis: (c) The mean income status scores of urban families will be higher than the mean income status scores of rural-farm families in all size-distance categories of counties.

- Hypothesis IV: A. There is direct relation between the status consistency of rural-farm and urban populations of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The status consistency scores of the rural-farm population will be higher than the status consistency scores of the urban population in all categories of distance of the counties from the nearest SMSA.

- B. There is an inverse relation between the urbanity values of counties and the status consistency scores of rural-farm and urban populations of those counties.

Sub-Hypothesis: (b) The status consistency scores of the rural-farm population will be higher than the status consistency scores of the urban population in all urbanity categories of counties.

- C. There is an inverse relation between the size-distance values of counties and the status consistency scores of the rural-farm and urban populations of those counties.

Sub-Hypothesis: (c) The status consistency scores of the rural-farm population will be higher than the status consistency scores of the urban population in all size-distance categories of counties.

Statistical Techniques

Pearson product moment correlation was employed to test the hypotheses dealing with the relationship between metropolitan dominance (distance, urbanity, and size-distance) and rural-farm and urban status structure (status scores for occupation, education, and income), and status consistency. Fishers r to z transformation is utilized to test the significance of these correlations.

In addition to the Pearson r 's for each hypothesis a multiple correlation analysis was performed utilizing distance, urbanity, and size-distance of each county for the occupation, education, and income status scores and status consistency measures of the rural-farm and urban population. This will provide a composite measure of predicted variance for each of the three status scores and the consistency measure. It will also allow an assessment of the combined importance of the indicators of dominance as predictors or contributors to the variance of the status structure and status consistency of the rural-farm and urban populations.

Simple inspection of the differences between mean status scores and consistency scores by each independent variable will be utilized to confirm or disconfirm the hypotheses dealing with the status and status consistency

differences between the rural-farm and urban populations. In addition, to provide an answer to the question posed above, "Are the rural-farm and urban categories mutually exclusive or different enough to be utilized as two separate residence categories?", a simple analysis of variance or F test was performed on the data. The analysis of variance design is referred to by E. F. Lindquist as the "groups within treatments design." This was employed since the unit of analysis is the county. Under this design the residence categories of rural-farm and urban become the main effects or treatments and the county's status and status consistency scores the groups within.¹⁴

¹⁴For a lengthy discussion of this design see, E. L. Lindquist, Design and Analysis of Experiments in Psychology and Education (Boston: Houghton Mifflin Co., 1956), Chapter 7.

CHAPTER III

HYPOTHESIS-TESTING AND RESULTS

This chapter reports the results of the tests of the operational hypotheses. The format for this reporting is as follows: first, a statement of the hypothesis and sub-hypothesis dealing with the first indicator of dominance, distance, and the occupational status of the rural-farm and urban populations; second, a brief statement of the results of their correlations, and an inspection of the mean score differences between the farm and urban populations; and third the tabular presentation of these statistics. This same format is followed for the remaining two indicators of dominance, urbanity and size-distance, and occupational status. Following this presentation there is a brief summary statement of the findings for all indicators of dominance and occupational status and the mean score differences between the farm and urban populations. The results for educational and income status and status consistency are reported in an identical manner. Upon completion of the total presentation a summary of all findings in tabular form is presented. In addition, the results of the multiple correlation (R) analysis are reported to later provide an assessment of the predictive utility of distance, urbanity,

and size-distance as determinants of rural-farm and urban status structures. Also, the results of the analysis of variance between the status and status consistency scores of the rural-farm and urban populations of counties are reported. This is done in order to later evaluate the exclusivity of the residence categories and consequently their utility for sociological research.

Hypothesis I: A: There is an inverse relation between the mean occupational status scores of rural-farm and urban males of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The mean occupational status scores of urban males will be higher than the mean occupational status scores of rural-farm males in all categories of distance of the counties from the nearest SMSA.

The expected relationship between rural-farm occupational status and distance from nearest SMSA is supported by a significant inverse correlation. However, the correlation for the occupational status of the urban population is not in the expected direction and is not significant (see Table 1).

In all distance categories the mean occupational status of the urban population is higher than the mean occupational status of the rural-farm population, thus supporting the hypothesis. Even though urban occupational status is higher than the rural-farm the differences between them are smaller in the categories where dominance is highest (see Table 1).

Table 1. Correlations (r) between distance from nearest SMSA and rural-farm and urban occupational status of counties and mean occupational status scores by distance from nearest SMSA and residence for the North Central region, 1960.

	Rural-Farm	Urban
Distance	-.44*	.01
	Mean Scores	Mean Scores
SMSA	20.7	35.9
Less than 49 Miles	18.3	34.7
50-99 Miles	17.2	35.4
100-149 Miles	16.6	36.3
150-199 Miles	15.3	34.8
200-249 Miles	15.1	36.3
250-300 Miles	14.6	37.7

*p < .001.

B: There is a direct relation between the urbanity values of counties and the mean occupational status scores of rural-farm and urban males of those counties.

Sub-Hypothesis: (b) The mean occupational status scores of urban males will be higher than the mean occupational status scores of rural-farm males in all urbanity categories of counties.

The correlations of rural-farm and urban occupational status with urbanity are in the expected direction. However, only the relationship between rural-farm occupational status and urbanity is significant. Hence, the hypothesis is supported for the rural-farm population and rejected for the urban (see Table 2).

The mean occupational status scores of the urban population are higher than the rural-farm for all categories. However, in the urbanity categories representing the highest degree of dominance the scores converge and the differences between farm and urban are less than in the urbanity categories representing the lesser degrees of dominance (see Table 2).

Table 2. Correlations (r) between urbanity and rural-farm and urban occupational status of counties and mean occupational status scores by urbanity and residence for the North Central region, 1960.

	Rural-Farm	Urban
Urbanity	.36*	.06
<u>SMSA Counties</u>	<u>Mean Scores</u>	<u>Mean Scores</u>
1,000,000 and over	22.7	36.6
500,000 to 999,999	23.5	34.2
250,000 to 499,999	19.7	35.6
249,999 and under	19.7	36.3
<u>Non-SMSA Counties</u>		
70% or more urban	17.5	36.7
55.0% to 69.9% urban	17.4	35.1
40.0% to 54.9% urban	17.8	35.3
25.0% to 39.9% urban	17.3	35.3
24.9% and under urban	19.3	38.8

*p < .001.

- C. There is a direct relation between the size-distance values of counties and the mean occupational status scores of rural-farm and urban males of those counties.

Sub-Hypothesis: (c) The mean occupational status scores of urban males will be higher than the mean occupational status scores of rural-farm males in all size-distance categories of counties.

The size-distance indicator of dominance correlates directly with the occupational status of the rural-farm population and indirectly with the occupational status of the urban population. The correlation with the rural-farm is significant whereas the correlation with the urban is not. Consequently, the hypothesized relationship is supported for the farm population and rejected for the urban (see Table 3).

As with the two previous indicators of dominance mean occupational status for the urban is higher than the rural-farm for all categories of size-distance. Also, the differences between the urban and rural-farm are greatest where dominance is least and lowest where dominance is highest (see Table 3).

In sum, the correlations support the expected relationships between all the indicators of dominance and rural-farm occupational status, but fail to support the expected relationship with urban occupational status. Also, all three indicators show convergences between the urban and rural-farm at higher degrees of dominance even though urban occupational status is always higher than the rural-farm.

Table 3. Correlation (r) between size-distance and rural-farm and urban occupational status of counties and mean occupational status scores by size-distance and residence for the North Central region, 1960.

	Rural-Farm	Urban
Size-Distance	.55*	-.04
	Mean Scores	Mean Scores
20	23.0	35.4
19	21.9	36.4
18	20.3	35.9
17	20.9	34.8
16	18.7	34.6
15	20.0	36.5
14	18.9	35.3
13	19.6	33.7
12	18.8	34.8
11	16.4	36.9
10	18.0	35.1
9	16.0	36.6
8	17.3	35.4
7	15.3	36.7
6	17.3	36.3
5	15.6	35.6
4	16.4	35.9
3	15.5	37.0
2	15.6	36.0
1	14.8	37.1
0	14.9	36.4

*p < .001.

Hypothesis II: A. There is an inverse relation between the mean educational status scores of rural-farm and urban persons 25 years and older of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The mean educational status scores of urban persons 25 years and older will be higher than the mean educational status scores of rural-farm persons 25 years and older in all categories of distance of the counties from the nearest SMSA.

The correlations between rural-farm and urban educational status and distance are in the expected direction. However, these correlations are extremely small (less than .10) and are not significant. Hence, the hypothesis is not supported (see Table 4).

The mean educational status scores of the urban population are higher than the farm in all distance categories. There is no noticeable convergence or divergence of differences between farm and urban educational status (see Table 4).

B. There is a direct relation between the urbanity values of counties and the mean educational status scores of rural-farm and urban persons 25 years and older for those counties.

Sub-Hypothesis: (b) The mean educational status scores of urban persons 25 years and older will be higher than the mean educational status scores of rural-farm persons 25 years and older in all urbanity categories of counties.

Rural-farm and urban educational status show positive correlations with urbanity. However, only the correlation

Table 4. Correlation (r) between distance from nearest SMSA and rural-farm and urban educational status of counties and mean educational status scores by distance from nearest SMSA and residence for the North Central region, 1960.

	Rural-Farm	Urban
Distance	-.06	-.08
	<u>Mean Scores</u>	<u>Mean Scores</u>
SMSA	36.9	46.6
Less than 49 Miles	39.3	44.5
50-99 Miles	36.0	43.4
100-149 Miles	33.5	43.5
150-199 Miles	37.9	45.2
200-249 Miles	41.7	49.3
250-300 Miles	36.8	46.4

between urban educational status and distance is significant. Thus, the hypothesis is upheld for the urban population and rejected for the rural-farm (see Table 5).

All urbanity categories indicate higher mean educational status for the urban than for the farm. Also, there is no evidence of a pattern of convergence between farm and urban educational status (see Table 5).

- C. There is a direct relation between the size-distance values of counties and the mean educational status score of rural-farm and urban persons 25 years and older of those counties.

Table 5. Correlation (r) between urbanity and rural-farm and urban educational status of counties and mean educational status scores by urbanity and residence for the North Central region, 1960.

	Rural-Farm	Urban
Urbanity	.07	.19*
<u>SMSA Counties</u>	<u>Mean Scores</u>	<u>Mean Scores</u>
1,000,000 and over	33.8	46.4
500,000 to 999,999	41.2	45.5
250,000 to 499,999	39.8	47.5
249,999 and under	38.8	47.0
<u>Non-SMSA Counties</u>		
70% or more urban	39.7	48.0
55.0% to 69.9% urban	38.7	45.4
40.0% to 54.9% urban	37.4	43.6
25.0% to 39.9% urban	36.5	43.3
24.9% and under urban	38.6	47.7

*p < .01.

Sub-Hypothesis: (c) The mean educational status scores of urban persons 25 years and older will be higher than the mean educational status scores of rural-farm persons 25 years and older in all size-distance categories of counties.

The hypothesized direct relationships between rural-farm and urban educational status and size distance are not supported. However, a rather low though significant correlation indicates that an inverse relation exists between farm educational status and size-distance (see Table 6).

All size-distance categories from 20 through 7 indicate higher mean educational status for the urban population than for the rural-farm. However, categories 6, 4, 2, and 0 show rural-farm educational status higher than the urban, and categories 5, 3, and 1 show extremely small differences between the two residence categories even though the urban is higher than the farm. Hence, a convergence between farm and urban educational status occurs in the size-distance categories representing the lowest intensity of dominance (see Table 6).

In sum, the correlations do not support the expected relationships between the distance and size-distance indicators of dominance and rural-farm and urban educational status. However, the expected relationship between urbanity and urban educational status is supported but the relationship with rural-farm educational status is rejected. Further, urban educational status is higher than the rural-farm for distance and urbanity, but several categories of size-distance show the opposite to be true.

Hypothesis III: A. There is an inverse relation between the mean income status scores of rural-farm and urban families of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The mean income status scores of urban families will be higher than the mean income status scores of rural-farm families in all categories of distance of the counties from the nearest SMSA.

Table 6. Correlation (r) between size-distance and rural-farm and urban educational status of counties and mean educational status scores by size-distance and residence for the North Central region, 1960.

	Rural-Farm	Urban
Size-Distance	-.16*	-.11
	<u>Mean Scores</u>	<u>Mean Scores</u>
20	36.2	45.3
19	36.1	47.9
18	37.7	44.4
17	41.5	45.2
16	35.5	42.2
15	36.2	45.5
14	36.5	43.8
13	34.3	41.9
12	35.5	43.0
11	32.5	45.3
10	35.5	43.0
9	34.3	44.9
8	37.5	44.2
7	36.3	44.8
6	37.9	36.3
5	35.0	35.6
4	38.9	35.9
3	39.4	36.0
2	39.4	36.0
1	35.4	37.1
0	40.1	36.4

*p < .01.

Rural-farm and urban income status are negatively correlated with distance from nearest SMSA. Further, each of these correlations is highly significant. Hence, the hypothesized inverse relation between farm and urban income status and distance is supported (see Table 7).

In all of the distance categories the income status of the urban population exceeds the income status of the rural-farm population. Also, the differences between the two residence categories are distributed fairly evenly throughout all of the distance categories and give little evidence of a pattern of convergence or divergence (see Table 7).

Table 7. Correlation (r) between distance from nearest SMSA and rural-farm and urban income status of counties and mean income status scores by distance from nearest SMSA and residence for the North Central region, 1960.

	Rural-Farm	Urban
Distance	-.23*	-.41*
	<u>Mean Scores</u>	<u>Mean Scores</u>
SMSA	45.5	61.1
Less than 49 Miles	37.9	52.7
50-99 Miles	32.2	48.4
100-149 Miles	30.6	48.2
150-199 Miles	35.3	48.2
200-249 Miles	38.5	53.6
250-300 Miles	36.4	50.5

*p < .001.

- B. There is a direct relation between the urbanity values of counties and the mean income status scores of rural-farm and urban families of those counties.

Sub-Hypothesis: (b) The mean income status scores of urban families will be higher than the mean income status scores of rural-farm families in all urbanity categories of counties.

The correlations between rural-farm and urban income status and urbanity indicate significantly high direct relationships. This supports the hypothesized relationship (see Table 8).

Income status for the urban population is higher than the rural-farm in all categories of urbanity. The highest differences occur in two of the categories representing the lower range of dominance, but these differences do not occur frequently enough to create a pattern of divergence (see Table 8).

- C. There is a direct relation between the size-distance values of counties and the mean income status scores of rural-farm and urban families of those counties.

Sub-Hypothesis: (c) The mean income status scores of urban families will be higher than the mean income status scores of rural-farm families in all size-distance categories of counties.

The hypothesized relation between farm and urban income status and size distance is supported. Each of the correlations is positive and is highly significant (see Table 9).

Table 8. Correlation (r) between urbanity and rural-farm and urban income status of counties and mean income status scores by urbanity and residence for the North Central region, 1960.

	Rural-Farm	Urban
Urbanity	.46*	.52*
<u>SMSA Counties</u>	<u>Mean Scores</u>	<u>Mean Scores</u>
1,000,000 and over	50.1	65.0
500,000 to 999,999	50.2	61.2
250,000 to 499,999	43.9	60.1
249,999 and under	44.2	58.9
<u>Non-SMSA Counties</u>		
70% or more urban	37.3	53.0
55.0% to 69.9% urban	38.0	52.7
40.0% to 54.9% urban	35.8	49.8
25.0% to 39.9% urban	34.0	48.5
24.9% and under urban	37.2	53.5

*p < .001.

All size-distance categories possess urban income status scores that are higher than those for the rural-farm. There is no consistent monotonic trend of differences between the scores and the size-distance categories. However, the highest differences do occur in the lower half of the distribution of size-distance values (see Table 9).

In sum, the correlations support the hypothesized relationships between distance, urbanity and size-distance and the income status of the rural-farm and urban populations. Also, urban income status is higher than rural-farm income status for all three of the independent variables.

Table 9. Correlation (r) between size-distance and rural-farm and urban income status of counties and mean income status scores by size-distance and residence for the North Central region, 1960.

	Rural-Farm	Urban
Size-Distance	.26*	.39*
	<u>Mean Scores</u>	<u>Mean Scores</u>
20	50.8	63.9
19	47.6	62.4
18	45.3	59.7
17	48.1	62.7
16	39.0	53.3
15	44.9	58.1
14	36.3	52.5
13	40.0	52.0
12	34.8	49.9
11	34.1	52.7
10	33.0	48.3
9	31.7	51.5
8	31.8	47.0
7	28.6	47.6
6	32.4	48.9
5	28.7	48.4
4	31.8	48.7
3	29.8	50.2
2	30.4	46.6
1	31.7	51.7
0	36.9	51.1

*p < .001.

Hypothesis IV: A. There is a direct relation between the status consistency of rural-farm and urban populations of counties and the distance the counties are from the nearest SMSA.

Sub-Hypothesis: (a) The status consistency scores of the rural-farm population will be higher than the status consistency scores of the urban population in all categories of distance of the counties from the nearest SMSA.

The correlation between rural-farm status consistency and distance indicates a non-significant inverse relation. However, the correlation for urban status consistency indicates a highly significant, positive relation. Hence, the hypothesis is supported for the urban population and rejected for the rural-farm (see Table 10).

Contrary to the sub-hypothesis stated, the status consistency of the urban population is higher than the rural-farm in all distance categories. Further, a definite monotonic trend in differences between urban and farm consistency and distance is apparent. The differences are smallest where distance is lowest and increase steadily as distance increases (see Table 10).

B. There is an inverse relation between the urbanity values of counties and the status consistency scores of rural-farm and urban populations of those counties.

Sub-Hypothesis: (b) The status consistency scores of the rural-farm population will be higher than the status consistency scores of the urban population in all urbanity categories of counties.

Table 10. Correlation (r) between distance from nearest SMSA and rural-farm and urban status consistency of counties and mean status consistency scores by distance from nearest SMSA and residence for the North Central region, 1960.

	Rural-Farm	Urban
Distance	-.03	.41*
	<u>Mean Scores</u>	<u>Mean Scores</u>
SMSA	78.6	81.9
Less than 49 Miles	82.5	86.7
50-99 Miles	84.7	89.5
100-149 Miles	85.7	90.7
150-199 Miles	81.6	86.2
200-249 Miles	78.1	86.4
250-300 Miles	81.3	88.8

*p < .001.

The correlation between urban status consistency and urbanity is higher than the correlation between rural-farm consistency and urbanity. However, both correlations are significant and negative which supports the hypothesized inverse relationships (see Table 11).

The status consistency of the urban population is higher than the status consistency of the rural-farm throughout all categories of urbanity. The differences between them, however, are negligible in the categories representing high degrees of dominance. In the categories representing low degrees of dominance there is a divergence in the consistency scores and the differences are increased. (see Table 11).

Table 11. Correlation (r) between urbanity and rural-farm and urban status consistency of counties and mean status consistency scores by urbanity and residence for the North Central region, 1960.

	Rural-Farm	Urban
Urbanity	-.20*	-.51**
<u>SMSA Counties</u>	<u>Mean Scores</u>	<u>Mean Scores</u>
1,000,000 and over	78.5	79.4
500,000 to 999,999	80.3	80.7
250,000 to 499,999	81.2	82.4
249,999 and under	80.6	83.6
<u>Non-SMSA Counties</u>		
70% or more urban	82.3	87.7
55.0% to 69.9% urban	81.4	85.7
40.0% to 54.9% urban	83.8	88.3
25.0% to 39.9% urban	84.1	89.3
24.9% and under urban	93.8	98.6

*p < .01.
 **p < .001.

- C. There is an inverse relation between the size-distance values of counties and the status consistency scores of the rural-farm and urban populations of those counties.

Sub-Hypothesis: (c) The status consistency scores of the rural-farm population will be higher than the status consistency scores of the urban population in all size-distance categories of counties.

The correlation between urban status consistency and size-distance is significant and negative. However the correlation between rural-farm status consistency is significant and positive. Consequently, the hypothesis is supported only for the urban population (see Table 12).

The status consistency of the rural-farm population falls below that of the urban throughout all values of the size-distance scale. However, the differences between them converge at the end of the scale where dominance is most intense and diverge where dominance is least intense (see Table 12).

In sum, the correlations support the expected relationship between urban status consistency and all three independent variables. However, only the relationship between status consistency and urbanity is supported for the rural-farm population.

Urban status consistency is higher than the rural-farm in all categories of the three independent variables. In addition to this unexpected outcome the three indicators of dominance show convergences between urban and farm status consistency at the higher degrees of dominance and divergence at the lower degrees of dominance.

Summary of Findings

Tables 13 and 14 present an overall picture of the results of the hypothesis testing. Table 13 presents the findings for the hypotheses dealing with the relationships between the indicators of dominance and farm and urban status and status consistency. Table 14 presents the findings for the sub-hypotheses dealing with the mean status and status consistency score differences between the farm and urban populations.

Table 12. Correlation (r) between size-distance and rural-farm and urban status consistency of counties and mean status consistency scores by size-distance and residence for the North Central region, 1960.

	Rural-Farm	Urban
Size-Distance	.20*	-.40*
	<u>Mean Scores</u>	<u>Mean Scores</u>
20	79.0	79.3
19	79.5	81.5
18	81.5	82.6
17	79.4	79.7
16	83.9	86.2
15	81.0	84.3
14	85.0	87.2
13	84.6	86.8
12	84.8	88.6
11	85.7	88.2
10	85.5	89.8
9	85.4	89.1
8	84.1	90.8
7	84.3	91.4
6	82.8	90.1
5	84.1	89.9
4	82.7	89.9
3	82.7	89.0
2	81.7	90.8
1	83.7	89.3
0	79.5	88.2

*p < .001.

Table 13. Summary of acceptance (+) and rejection (-) of the hypotheses dealing with the relationships between distance, size-distance, urbanity, and rural-farm and urban occupational, educational, and income status and status consistency for the North Central region, 1960.

	Hypotheses							
	<u>I</u>		<u>II</u>		<u>III</u>		<u>IV</u>	
	<u>Occupation</u>		<u>Education</u>		<u>Income</u>		<u>Status Consistency</u>	
	Farm	Urban	Farm	Urban	Farm	Urban	Farm	Urban
Distance*	+	-	-	-	+	+	-	+
Size-Distance**	+	-	-	-	+	+	-	+
Urbanity*	+	-	-	+	+	+	+	+

*Hypothesized direct relation with all variables except status consistency.

**Hypothesized inverse relation with all variables except status consistency.

Table 14. Summary of acceptance (+) and rejection (-) of the sub-hypotheses dealing with the differences between the rural-farm and urban mean occupational, educational, income, and status consistency scores by distance, size-distance and urbanity for the North Central region, 1960.

	Hypotheses			
	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>
	<u>Occupation</u>	<u>Education</u>	<u>Income</u>	<u>Status Consistency</u>
Distance*	+	+	+	-
Size-Distance*	+	-	+	-
Urbanity*	+	+	+	-

*Hypothesized higher mean scores for the urban than for the farm for all variables except status consistency.

Multiple Correlation (R) Analysis

Occupational Status

The multiple R for the combined effect of the three independent variables on the occupational status of the rural-farm and urban populations is highest for the rural-farm. The relative contribution to the multiple R by size-distance and urbanity is significant¹ for rural-farm occupational status while none of the three variables contribute significantly to the variation in the urban occupational status. Further, the size-distance variable alone accounts for the highest percentage of variance² in the farm occupational status in addition to having the highest partial correlation coefficient³ (see Table 15).

Educational Status

The multiple R's for rural-farm and urban educational status are approximately identical. The relative contribution

¹The relative contribution of each independent variable to the multiple R is expressed by the beta weight for each variable.

²The percentage of predicted variance attributable to each independent variable is found by multiplying the beta weight of the variable by the first order correlation between that variable and the dependent variable.

³The partial correlation coefficients refer to the correlation that occurs between the dependent variable and one of the independent variables with the effect of the other two independent variables removed.

Table 15. Multiple correlation coefficients and related factors for the occupational status of the rural-farm and urban populations and distance, size-distance, and urbanity for the North Central region, 1960.

Multiple R		Related Factors	Distance		Size-Distance		Urbanity	
<u>Farm</u>	<u>Urban</u>		<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>
.57	.09	Beta Weights	-.055	.004	.455*	-.065	.141*	.084
		Predicted Variance in Percent	2.4	.004	16.4	.02	7.8	0.5
		Partial Correlation Coefficients	-.046	.003	.363	-.049	.148	.078

*p < .001.

of all variables to the variation of both farm and urban educational status is significant. Also, the size-distance variable individually accounts for the highest percentage of variance in the educational status of the farm and urban populations. In addition, size-distance exhibits the highest partial correlation coefficient for both populations (see Table 16).

Income Status

The income status of the urban populations exhibits a higher multiple R than the income status of the rural-farm. All variables contribute significantly to the variance of the urban, while size-distance and urbanity are the significant contributors to the rural-farm. Urbanity

Table 16. Multiple correlation coefficients and related factors for the educational status of the rural-farm and urban populations and distance, size-distance, and urbanity, for the North Central region, 1960.

Multiple R		Related Factors	Distance		Size-Distance		Urbanity	
<u>Farm</u>	<u>Urban</u>		<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>
.31	.30	Beta Weights	-.312*	-.193*	-.425*	-.294*	.109*	.208*
		Predicted Variance in Percent	1.9	1.5	6.8	3.2	0.8	4.0
		Partial Correlation Coefficients	-.221	-.148	-.299	-.228	.099	.197

*p < .001.

alone accounts for the highest percentage of variance and the highest partial correlation coefficients for both rural-farm and urban income status (see Table 17).

Table 17. Multiple correlation coefficients and related factors for the income status of the rural-farm and urban populations and distance, size-distance, and urbanity for the North Central region, 1960.

Multiple R		Related Factors	Distance		Size-Distance		Urbanity	
<u>Farm</u>	<u>Urban</u>		<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>
.46	.59	Beta Weights	.053	-.143*	.111*	.175*	.432*	.415*
		Predicted Variance in Percent	1.2	5.9	2.9	6.8	19.9	21.6
		Partial Correlation Coefficients	.041	-.130	.088	.162	.391	.428

*p < .001.

Status Consistency

The multiple R for the status consistency of the urban population exceeds that of the rural-farm. All three independent variables contribute significantly to the variation in the status consistency of both the farm and urban populations. Size-distance individually accounts for the highest percent of variance and highest partial correlation coefficient of the rural-farm. In the urban population urbanity accounts for the highest percent of variance and the highest partial correlation coefficient (see Table 18).

Table 18. Multiple correlation coefficients and related factors for the status consistency of the rural-farm and urban populations and distance, size-distance and urbanity for the North Central region, 1960.

Multiple R		Related Factors	Distance		Size-Distance		Urbanity	
<u>Farm</u>	<u>Urban</u>		<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>	<u>Farm</u>	<u>Urban</u>
.37	.58	Beta Weights	.124*	.138*	.418*	-.188*	.303*	-.401*
		Predicted Variance in Percent	0.4	5.7	8.4	7.5	6.1	20.5
		Partial Correlation Coefficients	.092	.125	.301	-.173	.273	-.413

*p < .001.

Analysis of Variance

The results of the analysis of variance between the occupational, educational, and income status, and status consistency of the rural-farm and urban populations are shown in Tables 19 through 22. For every variable the analysis shows a significant F test of differences between the two residence categories.

Table 19. Analysis of variance between the rural-farm and urban mean occupational status scores of counties in the North Central region, 1960.

Source	Sum of Squares	df	Mean Square	F
Between Categories	139,895	1	139,895	11,749*
Within Categories	21,122	1774	12	
Total	161,018	1775		

*p < .005.

Table 20. Analysis of variance between the rural-farm and urban mean educational status scores of counties in the North Central region, 1960.

Source	Sum of Squares	df	Mean Square	F
Between Categories	24,960	1	24,960	474*
Within Categories	93,475	1774	53	
Total	118,435	1775		

*p < .005.

Table 21. Analysis of variance between the rural-farm and urban mean income status scores of counties in the North Central region, 1960.

Source	Sum of Squares	df	Mean Square	F
Between Categories	113,505	1	113,506	1702*
Within Categories	118,325	1774	67	
Total	231,831	1775		

*p < .005.

Table 22. Analysis of variance between the rural-farm and urban status consistency scores of counties in the North Central region, 1960.

Source	Sum of Squares	df	Mean Square	F
Between Categories	8,296	1	8,296	175*
Within Categories	84,102	1774	47	
Total	92,398	1775		

*p < .005.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

Four unexpected results of the analysis merit discussion. These are: (1) the failure of the occupational status of the urban population to vary directly with dominance; (2) the failure of the educational status of both the rural-farm and urban populations to vary directly with dominance; (3) the failure of the status consistency of the rural-farm population to vary inversely with dominance; and (4) the failure of rural-farm status consistency to be higher than the urban for all degrees of dominance. Following this discussion the predictive value of the three indicators of dominance for the status structure and status consistency of the rural-farm and urban populations is considered. In addition, the importance of the analysis of variance and convergences and divergences of the mean scores for the dependent variables will be treated as a means of evaluating the utility of the rural-farm and urban residence categories for sociological research.

Unexpected Results

The occupational status of the urban population showed little or no relation with distance, urbanity, and size-distance. One explanation for this outcome is that

the categories of occupational status were not sufficiently detailed to depict differences in various segments of the urban distribution and a more refined and detailed scale is needed. However, if this is the case then the question arises, why was the occupational scale adequate for measuring the occupational status of the rural-farm population which showed a direct relation with dominance.¹ A probable answer to this question is that dominance simply makes little or no difference for the occupational status of the urban population. Perhaps mere urbanity on the part of county units results in a similarity of occupational status irrespective of size or proximity to other counties. This is supported when the standard deviation of the urban occupational status distribution is compared to the rural-farm (see Appendix Table 1).

Since these standard deviations are approximately equal, any notion is dismissed that there was insufficient variation in the urban occupational distribution initially to result in a relation with the dominance indicators. Consequently, it would seem logical to conclude that for data for the rural-farm and urban population at the county level of analysis the present occupational status scale

¹This result is accounted for by the fact that the farm population under highest dominance has access to the employment opportunities of the urban areas and hence hold non-farm type occupations, although categorized as rural-farm by residence. Conversely, the farm population under less dominance has less access to urban employment opportunities and thus hold farm type occupations.

is adequate and that dominance simply has little effect upon the urban occupational distribution.²

The educational status of the rural-farm and urban populations in general showed little or no relation with distance, urbanity, and size-distance. A probable explanation for this unexpected outcome relates to the population measured for educational status. The population included the following: (a) both male and females; sex is a significant variable in educational attainment particularly in the rural-farm population where females reach higher educational levels than males; (b) whites and nonwhites; race is significant primarily in the urban population where educational attainment of nonwhites is considerably lower than whites although nonwhite females generally reach higher levels than nonwhite males. Race plays a relatively unimportant role in the rural-farm population of the North Central region, since the proportion of nonwhites reaches less than 2% of the total farm population; and (c) the age-structure 25 years and older; the older portion of the age-structure, i.e., 65 years and over, will obviously have lower educational attainment than the younger, since their education was attained in periods when an education was not

²This conclusion is based on the available evidence and is not intended to rule out conjecture on the possibility that a more refined and extended occupational scale could extract the necessary differences from the urban occupational distribution and indicate a relation with dominance.

easily acquired and not as important for acquisition of employment.

The lack of control of these three factors results in a considerable loss of homogeneity in the population and increases the probability of sporadic variations in the distribution of educational status. This is evidenced particularly in the relation between the rural-farm educational status and size-distance. The inverse correlation found was very low though significant and was the opposite of what had been hypothesized. Also, in some of the lower size-distance value categories the farm educational status exceeded that of the urban. These two opposite and unexpected outcomes can be partially explained through the lack of control of the factors mentioned above. First, the inverse correlation with size-distance can be partially accounted for by the variation in the older segment of (65 and older) the farm age-structure.³ Inspection of the proportions of this age group for all size distance categories indicates a direct relation with size-distance (see Appendix Table 2). Hence, as the size-distance value decreases the proportions of persons 65 years and older decreases. Since the educational status of this age group is lower than the remaining population, it contributes to a

³This age-group comprises only about 10% of the total farm population but accounts for almost one-fifth of the total number of farm persons over 25 years of age. Hence, this age-group is sufficiently large to effect the outcome of the relation between educational status and size-distance.

reduction of the educational status in the higher size-distance categories, and to an increase of educational status in the lower size-distance categories.

Second, the low mean educational status scores of the urban population compared to that of the farm in the lower size-distance categories may be accounted for by race and the nature of the size-distance measure. As mentioned above, the nonwhite population tends to have considerably lower educational status than whites and is generally concentrated in the urban population of the SMSAs. If the proportion of nonwhites is high enough in the counties of a given size-distance category, then the overall educational status of the category may be reduced. Further it is possible for all of the size-distance categories to contain SMSAs. For example, an SMSA of 100,000 can be categorized a 4 or a 3 if it falls in the bands of an SMSA that has 300,000 population. Consequently, the combination of the smaller SMSAs and their nonwhite population in the lower size-distance categories may have the effect of slightly reducing the overall educational status of the urban population of that category. This could result in the mean educational status scores of the farm population being higher than the urban.

The status consistency of the rural-farm population does not conform to the expected relation with distance and size-distance. A probable explanation for both of these outcomes concerns the variable of education in the consistency

measure. First, in the case of distance, it is evident from an inspection of the mean scores that a fluctuation occurs from category to category at times alternating from high to low and low to high. It is possible that due to this inconsistent fluctuation the overall status consistency measure is in effect neutralized and shows no relation with distance. From this an obvious question arises. If this fluctuation can effect the status consistency of the farm population, why does it not affect the status consistency of the urban population? The answer is readily gleaned from further inspection and comparison of the mean scores for the farm and urban populations. It is evident that the range of scores and hence the range of possible variation of scores for the farm population is considerably higher than the urban. Hence, it can be postulated that the higher range of variation of the farm exerts a greater impact upon the relation between status consistency and distance than the lower range of the urban.

The size-distance variable did not conform to the expected inverse relation with farm status consistency. However, unlike distance, it showed a low, though significant, direct relation with farm status consistency. As mentioned above this outcome can be attributed to the education variable in the consistency measure. While both occupational and income status show significant direct relations with size distance, educational status shows a

significant inverse relation.⁴ Further, educational status reaches its highest values consistently in the lower size-distance categories even to the point of exceeding the scores for the urban population. If these scores are high enough, they could then have the effect of controlling the deviation from the mean of the combined scores for status consistency and create the rather low though significant direct relation with size-distance.

In sum, the failure of farm status consistency to vary in the expected direction with distance and size-distance may be due to the lack of controls for the education variable.

The status consistency of the farm population was lower than the status consistency of the urban population for all three dominance indicators. This unexpected outcome is due primarily to several categories of the occupational scale utilized in the study. The occupational categories representing the farm occupations (farmers and farm managers, farm laborers and foremen) are the third and fourth lowest categories in the scale preceded only by private household workers, and laborers excluding farm and mine. Since by definition the farm population will have higher proportions in the farm categories than the urban population the mean occupational status score of the

⁴It will be recalled that this was attributed to the pattern of variation of size-distance and the older age segment (65 years and older) of the farm population.

farm will be lower than the urban. Further, the deviation from the mean of occupational, educational, and income status scores produced by the farm occupational status score is higher than the deviation produced by the urban occupational status score. As a result the farm status consistency score falls below that of the urban. It is obvious that any further comparison between the farm and urban populations using the status consistency measure in its present form would result in a higher score for the urban population than for the farm. This finding generates important considerations that should be attended to if comparisons are to be made between rural-farm and urban status consistency. Ideally one alternative is to construct a new occupational scale which would take into account the variation that exists in the farmers and farm managers category. For example, factors such as type of farm, size, and value, as well as total farm output or produce, could be used to rank the occupation into various new categories. Unfortunately, the available data for county units do not contain the necessary information to construct such a scale.

A second alternative is to keep the present scale, and change the status consistency measure to a measure that would be minimally affected by the scores of the farm occupations and still provide a measure of relative correspondence for the population of a county on the three status variables. The procedures that could be used to

construct such a measure are as follows: compute the Pearson product moment correlations between the standardized status distributions for occupation and income, occupation and education, and education and income. Take the resulting three correlations and convert them to standard scores (Z scores) by means of Fishers r to Z transformation. Then compute the standard deviation of the three Z scores.⁵ The resulting figure represents the extent to which the intercorrelation (interrelationship) of the three status variables deviate from their mean total intercorrelation. Thus, the higher the status consistency of a population the lower its standard deviation score (approaches zero) and the lower the status consistency of a population the higher its standard deviation score (approaches a quantity of one or greater).

This new consistency measure is not intended to solve the problem of the variation in the farm occupational categories or the need for a new occupational scale. However, given the present state of available data it does provide a workable measure of a population's consistency and minimizes the impact of the farm occupational scores. This is done by taking account of the intercorrelation of the total occupational distribution with the

⁵The standard deviation of the Z scores is computed by the following formula:

$$S.D.z = \sqrt{\frac{\sum_{i=1}^3 (Z_i - \bar{Z})^2}{3}}$$

where Z_i for $i=1 \dots 3$ refers to the three status variables.

remaining status distributions instead of single means for each distribution.

Dominance as a Determinant of Status
Structure and Status Consistency

Dominance is evaluated as a determinant of status and status consistency in terms of the amount of variance that the combined effect of the three indicators can account for in each of the status variables of the rural-farm and urban populations. The three indicators attain their highest predictive value for urban income status and status consistency, and rural-farm occupational and income status. In all four instances the amount of variance accounted for reaches almost one-third of the total variation in each variable. The remaining variables, farm educational status and status consistency, and urban educational and occupational status posed individual problems which were discussed above. Hence, for these variables in their present form, dominance shows little predictive utility.

Of the four dependent variables predicted satisfactorily, the urbanity indicator individually predicted the highest amount of variance in rural-farm income status, and in urban income status and status consistency. In the remaining variable, farm occupational status, the size-distance indicator predicted the highest amount of variance.

The superiority of the urbanity indicator in predicting variance generates speculation concerning an

additional indicator for dominance. In terms of the theoretical framework discussed in Chapter I, the technological base of a population (the means used to acquire sustenance) affects the structure of the social organization of a population. Technology in the present analysis is included in the size measures for SMSA and non-SMSA counties upon which all three dominance indicators are based. Further, it is viewed as directly related to the size of a population. If a measure of technology could be extracted from the size measures to control the possible technological variation that may occur within the size categories, then a contribution to the predictive value of dominance may be made. One such measure of technology that could be utilized is based on the functional specificity or economic function of an area and operationalized in terms of the percent of the population employed in different type industries. If a scale of this type could be constructed and included in the regression equation for farm and urban status structure, the predictive utility of dominance may be further increased.

In sum, the dominance indicators adequately predict variation in four of the eight status variables. It is speculated that with refinement in the education data of the rural-farm and urban populations and improvement of the status consistency measure that the predictive value of the indicators could be increased. Further, the inclusion of an operational measure of technology might well increase the predictive utility of dominance.

The Utility of the Rural-Farm and
Urban Residence Categories for
Sociological Research

The analysis of variance performed between the rural-farm and urban populations on occupational, educational, and income status and status consistency indicated that the rural-farm and urban residence categories are significantly different from each other. Hence, the two residence categories are mutually exclusive for the entire distribution of counties for the North Central region. However, inspection of the differences between mean scores under the influence of the three dominance indicators reveals that there are convergences between rural-farm and urban for occupational status and status consistency in addition to somewhat lesser convergences for educational status. These all take place in the dominance categories representing highest influence while in the categories representing lowest influence, the mean scores diverge and greater differences appear. Thus, even though the rural-farm and urban residence categories can be viewed as mutually exclusive⁶ for the region as a whole, in counties under extreme

⁶Ideally, to reach a solution to the problem of mutual exclusiveness an analysis of variance would have to be performed between the rural-farm and urban residence categories for occupational, educational, and income status and status consistency. The question arises then, why wasn't this done? The answer is simply that to perform such a task would require approximately 144 separate analysis of variance runs on the computer. It is obvious that this would be extremely time consuming as well as too costly.

dominance the exclusivity is diminished and differences become more difficult to find. Consequently, sociological research dealing with rural-farm and urban differentials must necessarily take account or control such factors as size of place and distance from SMSA to make valid comparisons and generalizations.

Summary

Four unexpected outcomes of the analysis were discussed. These were the following:

(1) The failure of the occupational status of the urban population to vary directly with dominance. It was concluded that for the rural-farm and urban populations at the county level of analysis the present occupational status scale is adequate and that dominance simply exerts little influence upon the urban occupational distribution.

(2) The failure of the educational status of both the rural-farm and urban populations to vary directly with dominance. It was concluded that uncontrolled factors in the educational data such as sex, race, and age resulted in a loss of homogeneity in the rural-farm and urban populations and may have produced sporadic variations in the educational status distribution.

(3) The failure of the status consistency of the rural-farm population to vary inversely with dominance. It was concluded that the lack of controls for educational status may have produced enough of a deviation in the variable

to affect the total status consistency measure.

(4) The failure of rural-farm status consistency to be higher than the urban for all degrees of dominance. It was concluded that the extremely low status score for the rural-farm occupational categories reduced the occupational status scores for this population. These low scores, when used to compute the status consistency measure, had the effect of reducing the total measure. A new measure of status consistency was proposed that could be used on current data and would take account of the deviation of each of the status distributions from their total inter-correlation. This minimizes the impact of the low rural-farm occupational scores.

In addition to the discussion of these four unexpected results two related issues were discussed. These were the following:

(1) The predictive value of the dominance indicators for the status structure and status consistency of the rural-farm and urban populations. It was concluded from the multiple R analysis that dominance was an adequate predictor for urban income status and status consistency, and rural-farm occupational and income status. The variable of functional specificity was proposed as an additional indicator that may add to the predictive utility of distance, urbanity, and size-distance.

(2) The utility of the rural-farm and urban residence categories for sociological research. It was concluded

from the analysis of variance between the rural-farm and urban categories for the status variables that for the North Central region as a whole the residence categories are mutually exclusive. However, inspection of mean status scores under occupational and educational status, and status consistency indicated close convergences between the residence categories at the highest degrees of dominance. Hence, sociological research dealing with rural-farm and urban status differentials must necessarily control such factors as size of place and distance from the SMSA if valid comparisons and generalizations are to be made.

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APPENDIX

Table 1. Standard deviations for the rural-farm and urban occupational status distributions for the North Central region, 1960.

Occupation	
Rural-Farm	3.2
Urban	3.8

Table 2. Proportions of rural-farm persons 65 years and older of the age group 25 years and above by size-distance for the North Central region, 1960.

Size-Distance	Percent 65 years and older	Size-Distance	Percent 65 years and older
20	20.2	9	14.5
19	19.0	8	17.6
18	20.5	7	13.7
17	19.0	6	17.9
16	19.8	5	13.1
15	18.0	4	16.2
14	19.4	3	13.6
13	16.7	2	15.5
12	18.8	1	11.5
11	15.6	0	12.6
10	18.4		

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