PERCENT NONWHITE AND RACIAL DISPARITY
IN NONMETROPOLITAN CITIES OF THE SOUTH

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ABSTRACT

This is an investigation of the association between (a) differences in occupation and family income between white and nonwhite populations, and (b) the proportion of the population that is nonwhite in cities of the nonmetropolitan South. At the zero order level, the association between percent nonwhite and measures of racial disparity is positive, as expected from previous research. Through path analysis, however, this direct relationship is decomposed into separate components for the white and nonwhite level of the occupation or income measures, posited to intervene between the independent and dependent variables. A major finding is that the structure of the relationship between percent nonwhite and racial disparity is different for occupation than for income. For income the indirect effect of percent nonwhite through either racial component tends to increase the basic relationship. This is due to a positive association between percent nonwhite and white income level, and a negative association with black income level. For occupation, on the other hand, the path through the black component tends to diminish the basic relationship, for although white occupation levels are positively associated with percent nonwhite, so are black occupation levels.
PERCENT NONWHITE AND RACIAL DISPARITY IN NONMETROPOLITAN CITIES OF THE SOUTH ²

Introduction

The study of American race relations is intimately concerned with differences between whites and nonwhites in socioeconomic status. Such differences are at the very root of the pattern of race relations as they exist in modern America. The research reported here concerns differentials in occupation and family income between white and nonwhite populations of cities in the nonmetropolitan South.

There is no dearth of literature dealing with the mechanisms of socioeconomic inequality. More specifically in comparing different population units, such as cities and counties, there has been much consideration of possible relationships between the absolute and relative size of the minority population and socioeconomic inequality.

As early as 1947, Robin Williams stated that the migration of a visibly different group into a given area increased the likelihood of conflict. He postulated that the potential for conflict was positively related to the relative size of the incoming minority group and to the rapidity of its influx. ³ Several years later, in 1954, Gordon Allport published his comprehensive study, The Nature of Prejudice. It was Allport's contention that regardless of the behavioral mechanisms, there is reason to expect that size of a minority group is related to its social position. ⁴

Empirical investigations have been made by Ralph Turner, David Heer, and Hubert Blalock. Turner demonstrated, using 1940 census data, that among 90 non-Southern cities Negro-white differentials in occupation varied directly with percent nonwhite. ⁵
David Heer used 1950 census data for 43 Southern SMA's and found that differential economic gain was associated with percent nonwhite. He reported a negative correlation of -.71 between the proportion of the population in the SMA which was black and the ratio of its median income to the median income of the white population.\(^6\)

Blalock (1956) investigated the relationship between percent nonwhite, rate of nonwhite increase, and indicators of racial disparity for 88 non-Southern SMA's of 100,000 population or more in 1950. He found a positive correlation +.42 between percent nonwhite and the difference between Negro and white median income. This correlation, however, was reduced below the .05 level of statistical significance by controlling for four additional variables: subregion, white median income, size of SMA, and percent of employed males in manufacturing. For Southern SMA's, in contrast, the correlation was +.50 and was raised rather than lowered when certain control variables were included. He reported that a difference measure based on the proportion of whites and Negroes in unskilled occupations was highly correlated with this income measure and "behaved almost identically."\(^7\)

In his 1957 study, Blalock investigated a random sample of 151 Southern counties and found a statistically significant positive relationship between percent nonwhite and white-nonwhite differentials in five separate measures: home ownership, crowding, rent, educational attainment, family income, but not occupation. The associations found were sustained, moreover, controlling for white median income, subregion, and percent employed in manufacturing.\(^8\)

In this study we examine the relationship between percent nonwhite and measures of racial disparity for yet another universe, the cities and
towns in the nonmetropolitan sector of the census South. In earlier work these smaller, more rural places have been relatively neglected. Further, the structure of this relationship is considered here in more detail than in previous research, by introducing white and nonwhite levels of the socioeconomic measures as intervening variables in a path analysis.

Unlike some previous work we make no attempt to infer social psychological processes from this aggregate census data. We lack data to throw light on possible underlying mechanisms, and believe moreover, that investigating the association of these aggregated racial differentials with a community characteristic such as percent nonwhite has an intrinsic importance in understanding the structure of race relations in the United States.

DATA AND METHODS

The unit of analysis in this study is the urban incorporated place in the nonmetropolitan South as of 1960. Detailed census data were transcribed from unpublished 1960 Census tabulation PH-5 available on microfilm. These data were available only for places with more than 200 nonwhites, a total of 878 places outside SMSA's in the census South. Centers in the universe range in size from 2500 up to 50,000, with a mean population of 9,373. A major reason for not including other regions in this analysis is that only 133 nonmetropolitan urban places outside the South had more than 200 nonwhites in 1960.

The dependent variables are indicators of socioeconomic inequality based on occupation and family income. White and nonwhite percentage distributions of occupation and family income were obtained from the 1960 census, and divided by means of several cutting points. Difference scores were then obtained for each community by subtracting the nonwhite from the
corresponding white percentage for a given occupation or income dichotomy.

**PATH ANALYSIS**

The object of this application of path analysis is to decompose the correlation between the independent variable, percent nonwhite, and a given set of difference scores. In a similar problem in which there is a deterministic relation among variables, Winsborough (1962) partitioned a correlation into components. Following his development, if we let $W$ equal a difference score, $X$ be the white status level, and $Y$ the non-white status level used to determine the score, then

$$W = X - Y$$

For some other variable $V$ (say, percent nonwhite)

$$\Sigma(V - \overline{V})(W - \overline{W}) = \Sigma w =$$

$$\Sigma w - \frac{\Sigma x w}{N} = \Sigma (X - \overline{X}) - \frac{\Sigma v (X - \overline{X})}{N}$$

thus

$$\Sigma w = \Sigma v - \Sigma y$$

The correlation between $V$ and $W$ is given by

$$r_{VW} = \frac{\Sigma w}{\sqrt{\Sigma v \Sigma y}} = \frac{\Sigma v - \Sigma y}{\sqrt{\Sigma v \Sigma y}}$$

$$= \left[ \frac{\Sigma v}{N \sigma_v \sigma_y} \right] \left[ \frac{\sigma_V \sigma_X}{\sigma_X \sigma_W} \right] - \left[ \frac{\Sigma v}{N \sigma_v \sigma_y} \right] \left[ \frac{\sigma_V \sigma_Y}{\sigma_Y \sigma_W} \right]$$

Which reduces to

$$r_{VW} = \frac{r_{VW}}{\sigma_X} - \frac{r_{VY}}{\sigma_Y}$$

Now if we define

$$P_{XW} = \frac{\sigma_X}{\sigma_W}$$

(2)

(3)
Figure 1: Schematic Path Diagram Showing Decomposition of the Association Between Percent Nonwhite and Difference Score. \( r_{14} = r_{12} p_{42} + r_{13} p_{43} \).
\[ p_{WY} = - \frac{\sigma_v}{\sigma_w} \quad (4) \]

We have partitioned the correlation according to the basic theorem of path analysis.\(^1\)

\[ r_{VW} = r_{VX}p_{WX} + r_{VY}p_{WY} \quad (5) \]

In path analytic terms this decomposition is equivalent to positing that white and nonwhite absolute levels are intervening variables between the independent variable (in this case percent nonwhite) and the difference score formed by subtracting the nonwhite absolute level from the white. The correlation between percent nonwhite and the difference score is therefore the algebraic sum of two compound paths, one through the white level and the other through the nonwhite level. This is illustrated, using a more general notation, in the path diagram in Figure 1, and the additive components are presented in the findings in Table 2.

[Figure 1 about here]

In an alternative derivation, one may take the structural equations for the model implied by the path diagram, and show that the path coefficients are equal to the values given by (3) and (4), provided (1) holds.

This approach indicates that variation in the status measure for a racial group helps determine the correlation between percent nonwhite and a difference score, since the standard deviation of a status measure is an element in the coefficient for its path to the difference score. The size of this variation, however, may be dependent upon the average proportion of that race achieving a specific level of income or occupation, for as the mean of a proportion deviates from 0.5 the variation
is generally reduced. Thus the results may be influenced, at least in part, by where the breaks are made in delineating the dependent variables. The standard deviations of the component variables are displayed in Table 1, and show this expected association with the mean proportions. Consequently, the analysis which follows is carried out separately for each of four cutting points for income, and four cutting points for occupation.

[Table 1 about here]

FINDINGS

Column 7 of Table 2 gives the zero order correlations between percent nonwhite and the occupation and family income measures of racial disparity. These correlations all indicate a low positive relationship between percent nonwhite and differentials between the races, consistent with most of the previous research reviewed in the Introduction.

[Table 2 about here]

Columns 1 and 4 of Table 2 show the correlation coefficients between percent nonwhite and the white and nonwhite levels for each of the status dichotomies. With respect to occupational differences, for each cutting point the direction of the correlations is positive for both races, and the correlations are always larger for the white component.

The results for income are in contrast to those for occupation. Thus the direction of the correlations for percent nonwhite is positive with the white income categories, but negative with the black income categories.

As displayed in column 2 and 5 of Table 2 $P_{42}$ and $P_{43}$ are the path coefficients from the white and nonwhite status components to their difference scores. These coefficients indicate the effect on
Table 1. Mean, Deviation of Mean from 0.5, Standard Deviation of Component Variables and Difference Scores.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>WHITE COMPONENT</th>
<th></th>
<th></th>
<th></th>
<th>BLACK COMPONENT</th>
<th></th>
<th></th>
<th></th>
<th>DIFFERENCE SCORE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X-0.5</td>
<td>SD</td>
<td></td>
<td>X</td>
<td>X-0.5</td>
<td>SD</td>
<td></td>
<td>X</td>
<td>SD</td>
<td></td>
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<tr>
<td>PERCENT OF EMPLOYED LABOR FORCE:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional, technical, managers; proprietors</td>
<td>.257 (-) .243</td>
<td>.0612</td>
<td></td>
<td></td>
<td>.079 (-) .421</td>
<td>.0476</td>
<td>.177</td>
<td>.0699</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The above plus clerical and sales</td>
<td>.491 (-) .009</td>
<td>.0937</td>
<td></td>
<td></td>
<td>.101 (-) .399</td>
<td>.0576</td>
<td>.389</td>
<td>.1005</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The above plus craftsmen</td>
<td>.631 (+) .131</td>
<td>.0893</td>
<td></td>
<td></td>
<td>.159 (-) .341</td>
<td>.0674</td>
<td>.471</td>
<td>.1027</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The above plus operatives</td>
<td>.874 (+) .374</td>
<td>.0453</td>
<td></td>
<td></td>
<td>.371 (-) .129</td>
<td>.0968</td>
<td>.487</td>
<td>.0950</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERCENT OF FAMILIES WITH INCOME:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>$6,000+</td>
<td>.367 (-) .133</td>
<td>.0903</td>
<td></td>
<td></td>
<td>.057 (-) .433</td>
<td>.0459</td>
<td>.309</td>
<td>.0894</td>
<td></td>
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</tr>
<tr>
<td>$5,000+</td>
<td>.493 (-) .007</td>
<td>.0976</td>
<td></td>
<td></td>
<td>.098 (-) .402</td>
<td>.0666</td>
<td>.395</td>
<td>.1018</td>
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<tr>
<td>$4,000+</td>
<td>.619 (+) .119</td>
<td>.0963</td>
<td></td>
<td></td>
<td>.175 (-) .325</td>
<td>.1000</td>
<td>.445</td>
<td>.1150</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>$3,000+</td>
<td>.856 (+) .356</td>
<td>.0567</td>
<td></td>
<td></td>
<td>.528 (+) .028</td>
<td>.1307</td>
<td>.672</td>
<td>.1244</td>
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</tr>
</tbody>
</table>
Note: The farmers and farm manager category is not included.

VARIABLES: 1 = Percent nonwhite, 2 = White, 3 = Status, 4 = Black Status, 5 = Difference Score.

<table>
<thead>
<tr>
<th>(7)</th>
<th>(6)</th>
<th>(5)</th>
<th>(4)</th>
<th>(3)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T_7</td>
<td>T_6</td>
<td>T_5</td>
<td>T_4</td>
<td>T_3</td>
<td>T_2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROPORTION EMPLOYED</th>
<th>OCCUPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td>Black Component</td>
</tr>
</tbody>
</table>

Table 2a. Compound Paths Between Percent Nonwhite and Difference Scores via Component Variables—Occupation.
<table>
<thead>
<tr>
<th>Variables: T = percent nonwhite, Z = white status level, J = black status level, d = difference score.</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 + ( )   300.206  906.906  396.956  322.922  322.922  600.260</td>
</tr>
<tr>
<td>59.295  325.232  695.969  245.745  245.745  912.124  600.260</td>
</tr>
<tr>
<td>57.260  317.231  251.081  115.011  51.051  51.051  600.260</td>
</tr>
</tbody>
</table>

Families with Income:

<table>
<thead>
<tr>
<th>Income</th>
<th>BLACK COMPONENT</th>
<th>WHITE COMPONENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td>Correlation</td>
<td>Correlation</td>
</tr>
<tr>
<td>Product</td>
<td>Product</td>
<td>Product</td>
</tr>
<tr>
<td>Path</td>
<td>Path</td>
<td>Path</td>
</tr>
</tbody>
</table>

Table 2: Compounded Paths between Percent Nonwhite and Difference Scores via Component Variables--Family Income.
the difference score of a standard deviation unit change of either racial component. When interpreting these coefficients one should keep in mind the preceding derivation and the discussion regarding construction of cutting points and component variables. According to the derivation, these path coefficients are the ratios, respectively of $\sigma_X$ and $\sigma_Y$ with $\sigma_W$. Thus their magnitudes, relative to each other are a function of $\sigma_X$ and $\sigma_Y$, seen in Table 1 to be associated for various cutting points with the deviation of the white or nonwhite mean from 0.5 respectively. White paths are larger than corresponding black paths for five out of eight cutting points, and in each of these cases, (along with one other of the eight), the white mean proportion is nearer 0.5 than the black in Table 1. Black paths are greater than white paths for only the very low cutting points. Two out of three of these cases are the only instances when the black mean proportions are nearer 0.5 than the white mean proportions.

Decomposition of the Association Between Percent Nonwhite and the Difference Scores

In terms of our model we can decompose the direct relationship between percent nonwhite and the dependent variables into two compound paths (a) the one which operates via the white component, given in column 3 of Table 2, and (b) the one which operates via the black component, given in column 6. Through this we can ascertain the algebraic contribution of either compound path to the total direct relationship, since the sum of a value in column 3 and column 6 equals the corresponding value in column 7. This indicates the importance of each race's status position, as influenced by percent nonwhite, in determining the difference between the races. 12

This decomposition shows that the structure of the association be-
between percent nonwhite and the difference scores is different for occupation and income. The low positive zero order associations between percent nonwhite and the occupational difference scores are brought about with the components operating in two directions. The positive paths through the white components tend to increase the direct correlations whereas the negative paths through the black components tend to diminish them.

For family income, on the other hand, the moderate positive zero order correlations between percent nonwhite and the difference scores are the sum of positive compound paths for both white and black components. Thus both paths contribute positively to the magnitude of the association between percent nonwhite and white-nonwhite income differences.

No meaningful conclusions can be drawn about the relative strength of the white and nonwhite compound paths, since the path coefficients (columns 2 and 4) are an element in their computation, and the relative size of the latter measures appear to be influenced by the location of the cutting point. Within both the occupation and income distributions, however, for each of the four dichotomies the direction of the compound paths, and thus, the structure of the relationship between percent nonwhite and the difference score, remains the same. Thus, the important distinction found in this research is between the structure for occupation and income. For income the indirect effect of percent nonwhite through either racial component tends to increase the basic relationship between percent nonwhite and white-nonwhite differences, whereas for occupation the compound path through the black component tends to diminish this relationship.
DISCUSSION

The association between percent nonwhite and the measures of racial disparity is positive, as expected from much previous research. We found, however, that the structure of this relationship is different for occupation than for income. For income the indirect effects through both components tend to increase the correlation between percent nonwhite and the difference scores, whereas for occupation the black compound path tends to diminish it.

The finding for income is consistent with the structure one might simply assume from the finding that percent nonwhite is positively associated with white-nonwhite differences. The higher the percent nonwhite, for the communities studied, the higher the proportion of whites, and the lower proportion of nonwhites in the high income category—hence the effect for both whites and nonwhites is to make the white-nonwhite differences larger, and so it is appropriate that both white and nonwhite compound paths be positive.

The structure of the relationship for occupation is different, however. Unlike the situation with income, the greater the percent nonwhite, the greater the proportion of nonwhites in higher status occupational categories; therefore, the effect for nonwhites is to make white-nonwhite differences smaller. The association between percent nonwhite and the difference score is lower for occupation than for income, and indeed the association is positive only because the product of correlations and path coefficients for the white component are greater than those for the black component.

In his 1957 study, Blalock found an association between percent nonwhite and racial differences in income, but not occupation. In seeking to explain the lack of an association for occupation, he specu-
lated that a large percentage of nonwhites might tend to produce an over-
flow of the minority group into semi-skilled (i.e., higher status) oc-
cupations. In other words he postulated a positive association, such as
we found, between percent nonwhite and the proportion of blacks in higher
status occupations. Our analysis suggests that such a positive association,
given different relative magnitudes of path coefficients than we obtained,
is consistent with the negligible association he found between percent
nonwhite and his measures of occupational differences.

A positive association was reported by Norval Glenn in a study of
percent nonwhite and the absolute level of Negro occupational status. The
zero order correlation between percent nonwhite and an index of oc-
cupational status for Negroes in 30 Southern SMA's of 100,000 population
or more in 1950 was +.520. The correlation was not changed appreciably
by holding constant any one of the control variables. Glenn concluded
that Negroes, in the metropolitan South benefit occupationally from be-
ing a large percent of the total population. He suggested that where the
relative number of Negroes is large, Negroes tend to "overflow" from
lower manual into upper manual occupations. He also pointed out that
higher occupational status for blacks in the metropolitan South is not
associated with higher income, the correlation between percent nonwhite
and median income being -.528.

Seymour Spilerman has also investigated the "overflow" hypothesis.
He reports that in places with higher percent nonwhite, black workers
tend to overflow across industry lines into less "caste-like" indus-
tries, and subsequently into higher status occupations.

Caution should be exercised in inferring the overflow hypothesis
as explanation for the present findings. This hypothesis was developed
from research on larger communities, such as metropolitan areas, and for places with large Negro populations. Complex metropolitan industry structures are not characteristic of smaller nonmetropolitan places.

Another explanation for the present findings is that larger non-white populations tend to afford greater opportunities for Negro professionals, businessmen, and other classes of black workers to be employed in a semi-separate black economy. Several activities, generally provided by whites, could be supported by the black population. This is not to say, however, that large nonwhite populations are not also beneficial to whites, since these populations provide additional customers, tenants, and clients for white businessmen and professionals.

The later explanation tends to be supported by Table 2 in which percent in high status occupations for either race is positively associated with percent nonwhite. In addition, an earlier analysis of the same data has indicated that these relationships hold for the absolute size of the nonwhite population as well as for percent nonwhite.16

Although blacks show occupational benefits, the coefficients indicate no concomitant increases in family income with increased minority percentage. The seeming paradox between income and occupation is perhaps a function of the type of "high status" jobs Negroes perform and of the sector of the community from which they receive their wages. Occupational distributions by race indicate that the majority of white-collar Negroes in the urban nonmetropolitan South are concentrated in the professional technical and kindred rank (6.5 percent out of 10.7 percent).17 Race relations literature indicates that the majority of black professionals are teachers, clergy, and in Negro-owned business.18
No doubt Negro churches would tend to pay their professionals poorly as did segregated school systems. An interesting 1955 study of white and Negro schools in the South indicated not only a substantial disparity in teachers' salaries between the races but a generally low wage for all Southern teachers.\(^{19}\)

Further support for this explanation is found in the 1960 Census. The special report on teachers' earnings reveals that the median yearly earnings of black teachers, below college level, in the South was $3857. This compares to $4001 for all Southern teachers and $4774 for all teachers in the U.S.\(^{20}\) It seems plausible then, that white-collar Negroes are located in relatively low paying jobs, and that this helps to explain the differences in the finding for income and occupation here.

To better understand the differing structures we found between percent nonwhite and occupational and income racial disparities, further research should be carried out using more recent data, and an effort made to test the "overflow" and the "separate economy" arguments. In any replication of this work more detailed occupational and income distributions should be used if possible, and the arbitrary effect of the cutting points suggests turning to a composite difference measure.
This research is part of a larger project on population changes in small towns. It has been supported in part by Research Grant No. NSF-GS-1717 from the Division of Social Sciences of the National Science Foundation, and by the Wisconsin Agricultural Experiment Station as a collaborator in North Central Region Cooperative Research Projects NC-80 and NC-97. David Brown is a trainee of the Wisconsin Center for Demography and Ecology through Public Health Service Grant No. GM 1190. Glenn Fuguit is professor of Rural Sociology. The suggestions of Hal H. Winsborough are gratefully acknowledged. Mark J. Van Cleave provided valuable programming and computing assistance.


12 A similar method is used by Blalock in his paper "Urbanization and Discrimination in the South". In this study of 150 Southern counties he analyzed the partial correlations of percent urban, controlling for percent nonwhite, on white and nonwhite levels of living (home ownership, overcrowding, income, education) as well as on differentials in these indices. He pointed out that urbanization would not necessarily reduce racial differentials even though the absolute levels of both races had indeed been raised. Although this is not the substantive point to be made in this paper, the method is similar. Path analysis, however, allows one to be more explicit by empirically indicating the effect of either race's status position on the differential between the races.

Hubert M. Blalock, "Urbanization and Discrimination in the South," Social Problems, 7 (Fall, 1959), pp. 148-149.


