

NEIGHBORHOOD AND COMMUNITY CONTEXTUAL EFFECTS ON INDIVIDUAL-LEVEL VOTER TURNOUT: A CASE STUDY OF PHILADELPHIA, PENNSYLVANIA

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Contextual models examine the role that both individual-level and social factors play in political behavior. In other words, "how people are influenced by their social surroundings" (Burbank, 1995).

Studies have demonstrated the impact of social context on a number of different facets of voting behavior including strength of partisan identification, the direction of the vote, and voter turnout.

Adding to the renewed interest in studying contextual effects is the overlap in contemporary American society between geography and race. The close convergence which currently exists between geography and race, particularly within urban settings, has even given rise to a new term: "hypersegregation." This refers to the extreme concentration of minority groups, mainly blacks and Hispanics, living within compact spatial areas in American cities.

Massey and Denton (1989, 1993) describe the impact of hypersegregation on urban blacks in America in the following terms:

This extreme level of residential segregation across multiple dimensions is important because of the social isolation it implies. For blacks in large ghettos of the north, this isolation must be extreme.... Indicators of the accompanying social isolation are not hard to find..... Our results suggest that the extremity of black residential segregation and its unique multidimensional character may help explain the growing social and economic gap between the black underclass and the rest of American society.

One would hypothesize that the local context created by the extreme residential segregation of minorities also would have a powerful independent effect on their political attitudes and behavior. Minorities living within these residentially segregated enclaves would have a uniformly lower level of political participation. If, as Massey and Denton argue, hypersegregation leads to a

general withdrawal from the institutional arrangements of the dominant society, then one would certainly expect political demobilization to occur as well.

While the empirical evidence furnished by Massey and Denton is overwhelming concerning the extent of residential segregation in urban areas in America, an alternative hypothesis would be that the spatial isolation of minorities living in the cities may lead to greater political involvement. Underlying this alternative hypothesis is the notion that segregated living would foster an identity of interests which, in turn, could serve as the basis for political mobilization. Also, the concentration of minority members within a compact spatial area would facilitate the growth of political organizations and the ability of political leaders to mobilize the local community.

Philadelphia, Pennsylvania

The data for this analysis consists of all of the registered voters in 1996 as well as census data for the 1,801 block groups in the City of Philadelphia, Pennsylvania. In 1990, the city's population of 1,585,577 was 52.2% non-Hispanic white, 39.5% non-Hispanic black, and 5.3% Hispanic origin.

Philadelphia is one of the large American cities classified by Massey and Denton as "hypersegregated". The authors use five measures of residential racial separateness: evenness, exposure, clustering, centralization, and concentration. Exposure "reflects the extent to which groups are exposed to one another by virtue of sharing neighborhoods in common" (Massey & Denton, 1989: 374). Clustering measures the extent to which segregated residential neighborhoods adjoin one another in space and form a large contiguous ghetto. On these two dimensions of hypersegregation, Philadelphia is ranked among the highest metropolitan regions in the country on these two dimensions of hypersegregation.

Data and Method

A voter file was obtained in 1997 with 936,912 registered voters. The data for each voter included: address, age, sex (optional), race (optional), date of birth, date of registration, party registration, and voter history. The

voter history included the 1992, 1994, and 1996 national elections and the 1993, and 1995 local elections.

A Geographical Information System (GIS) was employed to assign each registered voter's address to its census block group. The GIS system matches an address record (house number and street name) against a master address file and when the number and street are found, the record is "geocoded". A geocoded address record can then be located within any unit of census geography including census blocks, block groups, census tracts, and counties.

In this study, the geocoded records were aggregated up to the census block group level. For each block group, the following variables were calculated: the total number of registered voters, the proportion who voted in the 1992, 1994, and 1996 general elections, and the proportion of voters on each block who indicated their race as black, white, other, or who did not indicate any race when registering to vote.

At the next step in the process, 1990 census block group data was merged with the aggregated block group level voting data. The census block group variables which were selected for merging consisted of the racial composition of residents 18 years of age and over (non-Hispanic white, non-Hispanic black, Hispanic origin) and the average family income.

Racial Identification

The voter registration form used by the City of Philadelphia includes an optional box where the person can indicate their race. There has been considerable turnover in registered voters from 1990 through 1996. Over seventy-five percent (76.8%) of all current voters registered between 1990 and 1996. This means a large numbers of voters have been faced with a question of racial identification when completing their voter registration forms. Of the 931,959 registered voters, 28.9% chose to register and not indicate their race.

From 1990 to 1995, the proportion of people registering and choosing not to indicate their race increased significantly - from 22.4% in 1990 to more than half of those who registered in 1995 (Table 1).

One interpretation in the decline in the number of voters who chose not to identify themselves by race could be that race is not part of their own self identification. On the other hand, the choice to identify oneself by race could be shaped by the type of neighborhood in which the individual lives. Hypersegregation could influence both blacks and whites living in either all-black or all-white

neighborhoods to have a heightened racial consciousness and in turn to indicate their race when registering. This would hold especially for blacks, if the process of registering and voting increases their sense of "empowerment" - the belief that participation in the political process will lead to substantive change in the social conditions of their neighborhoods and in their lives. Bobo and Gillman (1990, p. 377) report that in the 1970s studies of black political behavior reached a consensus that "a strong sense of 'ethnic community,' or group consciousness, was the stimulus to heightened black [political] participation." Their own research on black empowerment found that it serves as a contextual factor stimulating higher levels of political awareness and participation.

At the block group level there are very strong correlations between the percent of voters who identified their race as black and the percent black (18+) from the 1990 census (.973) and the percent who indicated their race as white and the percent white (18+) from the census (.958). On the other hand, the correlations between the percent of registrants who did not indicate race and the percent white or black from the 1990 census are comparatively weak.

A step-wise multiple regression model was run with the percent "no race" for each block group as the dependent variable. The first step introduced median household income to control for the socio-economic status of the block group. At the next stage the percent black 18 years and over was added followed by the square of the percent black (18+). All three terms are highly significant and the model explains 26.4% of the variance (Table 2). The regression equation was used to produce a series of estimated percent for "no race" with various levels of percent black. Graph 1 shows that if block groups have either a high proportion of black registered voters or a low proportion, the proportion of registered voters who have not indicated their race declines. For mixed race block groups, the percentage of "no race" registered voters increases. Map 1 shows that many of the block groups with a high proportion of voters who did not indicate their race when registering are located in the center of Philadelphia in areas that are not "hypersegregated".

The data from the regression model support the "empowerment" thesis. In spatial areas in Philadelphia where one race is concentrated a sense of "ethnic community" develops which is reflected behaviorally when people register to vote. If they live in the parts of the city which are racially homogeneous, either white or black, they are significantly more likely to indicate their

race when registering to vote. A contextual effect of hypersegregation in Philadelphia is to heighten racial consciousness.

Racial Identification and Political Participation

At the macro level, there was a direct relationship between racial self-identification and voting in the 1996 Presidential election. Overall in Philadelphia in 1996, 57.2% of the registered voters voted. However, among those voters who had registered and indicated their race as either black or white, turnout was over 60%. Conversely less than half of those who indicated some other race voted in 1996 and among those voters who did not indicate any race, turnout was slightly less than 50% -- over 10% lower than among voters who indicated their race.

Variability in Political Participation Rates of Block Groups Situated in Areas with Differing Racial Compositions

There is a moderate relationship between the socio-economic status of the block group, measured by average household income, and turnout in 1996 (.438). There is a weak relationship between the racial composition of the block group and political participation; the correlation between the proportion white and turnout in 1996 is .159 and between the proportion black, -.210. These correlations would suggest higher voter turnout in the affluent, white areas and lower turnout in the minority areas. The data lend support to the demobilization thesis implicit in Massey & Denton — that residential segregation leads to lower political participation. However, the relationships observed between voter turnout and race could be attributable to the difference in class standing of the two racial groups in Philadelphia. Also, validation of this hypothesis would require that block groups populated mainly by minority members would have lower turnout if situated in predominately minority surrounding areas than if these block groups were located within surrounding areas that are white. In other words, the “clustering” that Massey & Denton document would have an additional, independent effect on turnout; further lowering the political participation of blacks who live in large contiguous ghetto areas.

To examine the local contextual influence of race on block group level electoral participation, a two step procedure was carried out. First, a specially designed, computer-based radius program was used to measure both the racial composition and the income level of geographic areas surrounding each block group. This

program draws a geographic radius of a specified distance around each block group and incorporates any block group whose centroid falls within the designated radius. Once the radial distance has been established, the program aggregates the values of selected variables for all of the block groups falling within its radius -- excluding the block group at the center.

In this instance, the program was used to draw a .33 mile radius around each of the 1,801 block groups in the City of Philadelphia (Map 2). The distance of .33 miles was chosen because its geographic coverage obviously extends beyond the block group and captures a sense of the larger “community” in which a block group is situated. The radius program also enables the effect of “clustering” to be measured. In areas of Philadelphia where contiguous block groups form a ghetto, the surrounding community for each of these block groups consists of other block groups with similar racial and socio-economic characteristics.

The block group level variables which were aggregated up to the .33 mile radius area included: (1) the percent of residents 18 years of age and over who were black and (2) the average family income at the .33 mile radius area.

Once the racial composition and income measures were derived at both the block group and surrounding area levels, a hierarchical multiple regression analysis modeling the influence of these effects on voter turnout was carried out. The dependent variable was the proportion of registered voters who voted in 1996 on a given block group. The independent variables were: (1) the average family income at the block group level, (2) the percent black 18 and over at the block group level, (3) the average family income at the .33 mile radius area, (4) the percent of black at the .33 mile radius area, (5) a term measuring the interaction of the block group level with the .33 mile radius level of average family income, and (6) a term measuring the interaction of the block group level with the .33 mile radius area level of percent black.

The final model explains approximately 41 percent of the variance in the voter turnout in 1996 among block groups in Philadelphia. The results of this analysis indicate that the percent black at both the block group level and the .33 mile radius area level make an independent contribution to the proportion of variance explained in voter turnout. Both terms show that as the percent of black increases, voter turnout declines -- once the effect of socio-economic class is controlled. What is most intriguing, though, is that the interaction term between the block group and the .33 mile radius area for the

percent black is also statistically significant and in the positive direction. This indicates that the effect of the percent black at the block group level on turnout varies according to the racial composition of the surrounding area in which the block group is situated.

The nature of the relationship between race and turnout becomes clearer if we plot specific turnout values of block groups with differing racial profiles (Graph 2). As the surrounding area's percentage black population increases, the predicted turnout values of predominately white block groups declines (from 53% to 47%) whereas the corresponding turnout values of the predominately black block groups moves upwards (from 51% to 57%).

Discussion

This study has found a strong convergence between race and geography in Philadelphia, the results of this study, based upon an examination of voter turnout in all of the census block groups in the city does not support the notion that ghetto residents are more politically inactive. The results reveal that once a control for the economic class standing of block groups is introduced, the turnout rate of black block groups situated in predominately black surrounding areas is appreciably greater than the corresponding turnout rate of minority block groups situated in or adjacent to predominately white areas. The greater the correspondence between the racial composition of black block groups and their surrounding community, the higher the level of voter turnout. Brace et al. Found a similar effect in their study of turnout in election precincts in Florida (1995). They used the terms "embedded" and "nesting" to describe the contextual effect of black-majority surrounding districts on increased turnout in black precincts.

For white block groups situated in predominately white surrounding areas, turnout is also higher than for white block groups in predominately black or mixed race areas. The "clustering" of population by race in Philadelphia, which Massey and Denton use as one of their indicators of hypersegregation, has a positive contextual effect on voter turnout.

The results presented here are consistent with survey research findings showing that minority members who identify strongly with their racial group are more apt to participate in the political arena than individuals whose level of group consciousness is not as intense. To determine, though, whether feelings of racial solidarity are responsible in the main, or in part, for the findings presented in this study, future research needs to be

carried out documenting the nature of the relationship between the emergence of such feelings and the physical location of individuals who possess them. Are minority members who feel themselves a part of an "ethnic community" more likely to be found in residentially segregated areas or are they just as likely to be found in more integrated areas?

From a methodological point of view, this study also illustrates the utility of using a GIS technique to examine social science data. GIS serves as a mechanism which can link census data with other types of data based upon a relatively small unit of analysis such as the census block group. The advantage of utilizing smaller units of analysis such as the census block group as opposed to the census tract, of course, is that the probability of committing the ecological fallacy is considerably reduced. The digitized maps created by GIS and thematically shaded by the key variables are more than mere illustrations. In this study, the thematic maps serve an analytical purpose -- documenting the effect of racial clustering on both self identification and voting.

References

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Table 1

Philadelphia: Voter Registration by Race 1990 - 1996

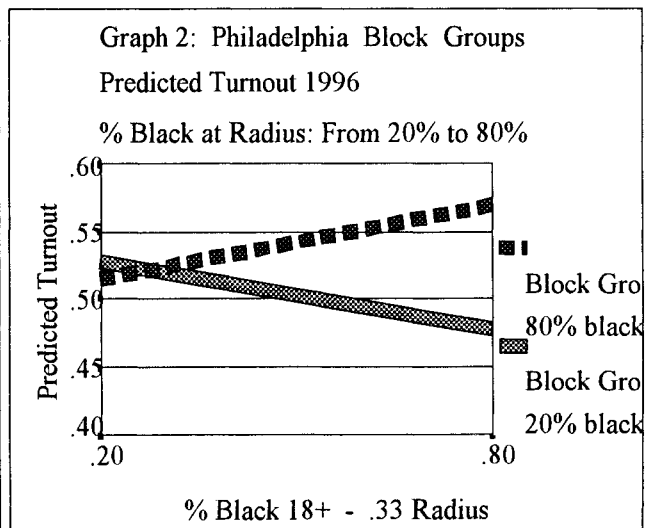
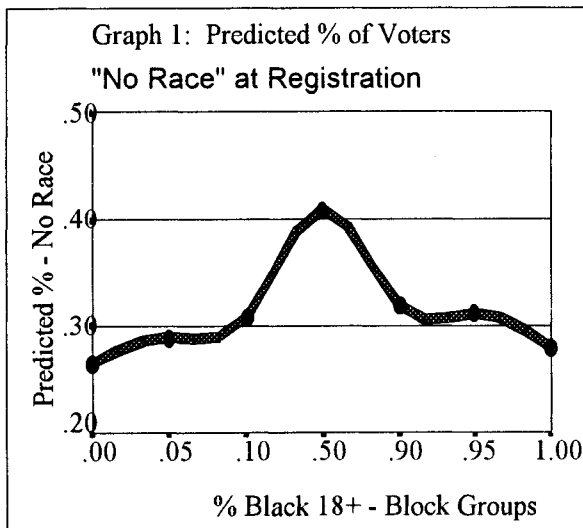
Year of Registration:	90	91	92	93	94	95	96
Race Indicated at Registration							
black	17.4	23.7	24.0	27.7	28.7	24.5	31.3
white	57.7	41.6	34.8	36.2	24.8	20.6	18.9
other	2.5	1.8	2.0	2.1	4.0	1.5	6.9
no race	22.4	32.8	39.2	33.9	42.5	53.4	42.9

Table 2

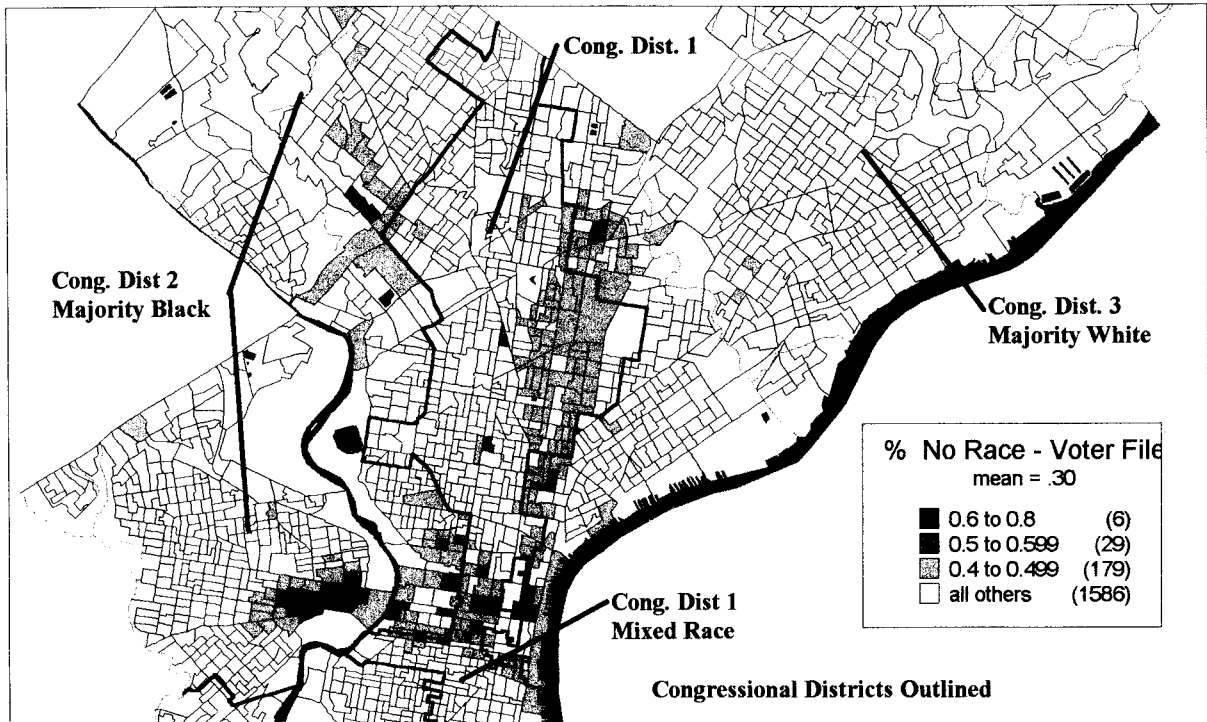
Regression Model: Effects of Socio-Economic Status and Racial Composition of Block Group on Percent "No Race"

$$\% \text{ No Race} = b_1 (\text{average income}) + b_2 (\% \text{ black } 18+) + b_3 (\% \text{ black } 18+)^2 + a \quad R^2 = .264$$

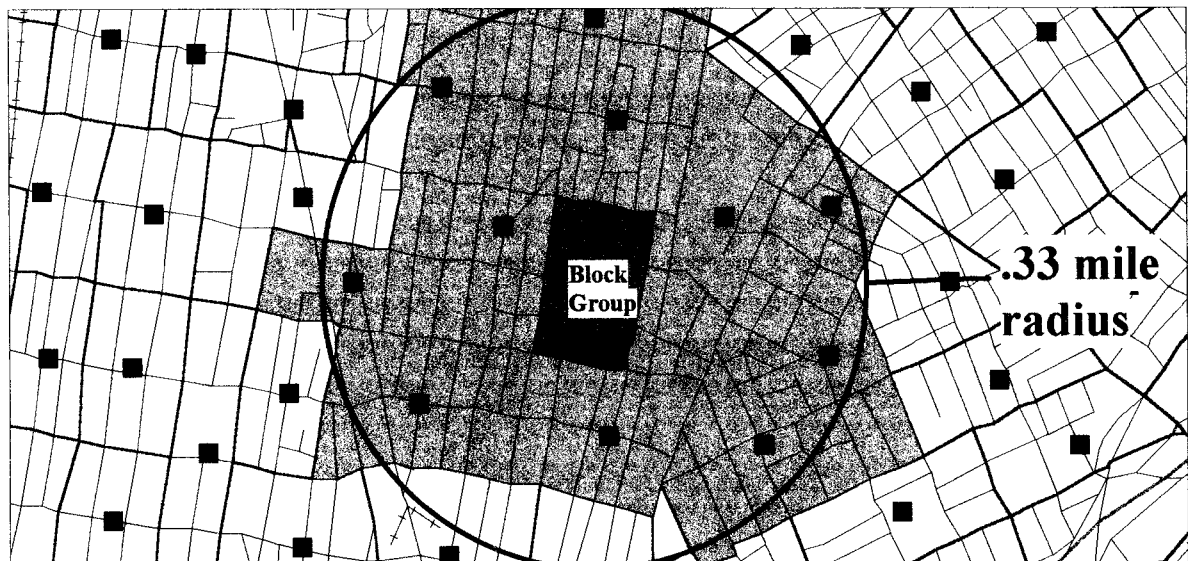
Terms:	Beta Weight	Coefficient	Significance
average income	- .085	.000000484	.0001
% black 18+	2.623	.5099	.0000
% black 18+ ²	- 2.521	-.4958	.0000



Map 1: Philadelphia - Block Groups Shaded by % No Race - Voter File



Map 2: Selected Block Group & Surrounding Community



■ - Block Group Centroids

Block groups in surrounding community - shaded