

Racial/Ethnic Homogeneity Of Neighborhoods And Variation In Census Coverage Of African Americans

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INTRODUCTION

Contributors to Census omission rates include both individual and environmental factors which are associated with high rates of poverty. One related factor, racial/ethnic group affiliation, has been linked to behavioral causes of undercount. Moreover, geographic concentration of racial/ethnic groups, in either urban or rural settings, has been linked to the quality of census coverage overall. (Brownrigg and de la Puente, 1992; Fein, 1990). A number of researchers have suggested that group concentration may indeed exert independent effects upon census omission and census coverage. Similarly, it is widely held that poverty status contributes to behavioral causes of undercount, and that geographic concentrations of poverty are linked to problems in census coverage. Analysis of the separate contributions of poverty status and race/ethnicity to the quality of coverage and the extent of undercount is complicated by the observation that geographic concentration of racial/ethnic groups often overlap with geographic concentrations of poverty. Where racial/ethnic characteristics overlap with poverty factors, overall omission rates may tend to increase.

This research examines variation in racial/ethnic heterogeneity of neighborhoods, and census omission. More specifically, the research examines variation in Census omissions for small areas while controlling for percentage composition of persons who self-identified as black. The research utilizes data from the 1990 Decennial Census, and data from the 1990 Ethnographic Census. The Ethnographic Census is designed to overrepresent pockets of poverty and targets underrepresented groups. It therefore serves as an independent sample for both poverty and race/ethnic concentration.

BACKGROUND

Some of the factors which have been associated with high concentrations of persons in poverty are:

1. multi-unit housing arrangements,
2. the presence of homeless and indigent persons,
3. and irregular, incomplete or nonexistent addresses.

An individual household characteristic associated with both poverty and race/ethnicity is "irregular living arrangements" (irregular household composition). It has been hypothesized that multiple-unit dwellings may lead to omission of whole households within a unit, and that irregularity in household composition may lead to omissions within households. Results from ethnographic data indicate that indeed these were significant factors in many documented cases of census omission. Some of the related factors include more than one generation in the household, absent parents, children of absent parents, and confusion about normal residence. In places where these characteristics are more prevalent (or concentrated) noticeably higher rates of omission may be observed.

When behavioral causes of undercount are being examined, often the goal is to discover whether there exist a set of factors which result from, and are shaped by, the experience of minority status and which contribute to nonresponse. An example of this is in the observation that many minority and/or poor persons fear reporting of information to government agencies and will not respond to the census.

The behavioral and environmental factors cited above occasionally find their intersection in geographical areas with a high concentration blacks and/or hispanics. Differential concentrations of blacks in geographic areas has been identified as having an effect on enumerability which is independent of individual race/ethnicity (Fein, 1990). That is, blacks in racially integrated areas may show different patterns of omission from those in racially segregated areas.

PROCEDURE

This analysis is based upon data extracted from two primary sources and a third source which was derived from the two primary sources. These are the Alternative Enumeration (AE), the 1990 Decennial Census (Census), and the resolution data. The resolution data compare and record the similarities and differences between the two primary sources. This study also makes use of descriptive and ethnographic data gathered by researchers in the field.

The Alternative Enumeration is a product of a special project entitled The Ethnographic Evaluation of the Behavioral Causes of Undercount (Brownrigg, and de la Puente). The data set is the combined result of independent enumerations conducted in 29 different research sites across the country. The independent researchers identified an area with which they were very familiar and which contained approximately 100 contiguous housing units. The areas or neighborhoods were chosen to tap special populations with characteristics which have been shown to be associated with undercount or coverage problems. The researchers developed and submitted a complete enumeration of housing units and persons living in the sample area. The enumerations were supplemented with ethnographic information relating to behavioral and environmental factors associated with the enumeration process. Ethnographic data includes observations on aspects of the neighborhood, on characteristics of households, and on individual and group behavior.

The results of the alternative enumeration were matched to the official Census Day enumeration as reported on the Census forms. Comparison between the two enumerations resulted in a data set containing resolution codes indicating, for housing units and for persons, matches between the two, and omissions and errors for both Census and AE. This research compares the distribution of the population of persons correctly censused with the distribution of persons omitted by the Census but correctly enumerated by the AE. Also, the distribution of those omitted is examined for whole and for partial household omissions. The relevant categories of analysis are listed and defined below.

Correctly enumerated: These are all persons, housing units, and household records which appear on census and AE, and which were correctly enumerated.

Census omissions: These are persons, housing units, and households which appeared on the alternative enumeration and were correctly enumerated, but did not appear on the census records. Excluded from this category are any omissions which were attributable to mobility between census day and the alternative enumeration.

Resolved population: These are persons correctly enumerated by Census and/or AE, and were determined to be present in the site on Census Day. It combines all correct Census day enumerations for both data sets. It is the best enumeration of the site which can be extracted from the combined sources. It includes those persons and households which were matched from AE and Census, as well as those which were correct from both sources, but did not match.

Mobility: These include all persons and households who moved into the research site after Census Day and before the alternative enumeration. These persons would appear on the alternative enumeration, but not on the census record. Conversely, it includes all persons who moved out of the research site after Census day and would appear on census records but not on the alternative enumeration.

House hold unit link: This category refers to the those instances in which housing units on the AE could be matched to a housing unit on the Census record, and vice versa. Housing units for the AE were identified visually by the researcher. This variable serves as a proxy for the extent to which Census was able to locate units.

From the total sample of approximately 3,367 housing units, 8,718 persons, and 110 census blocks, all persons reporting black race were extracted from the Alternative Enumeration (Brownrigg and de la Puente, 1992). For six of the 29 sites there were no persons reporting black race. One of research sites was eliminated from this analysis, leaving 28 sites total. For the remaining 22, the majority of all persons reporting black race occur in 10 sites on the AE. The aggregate sample was then divided into four neighborhood types depending upon racial composition. These four types of neighborhoods are listed and described below in table 1.

Table 1
Racial Characteristics of Neighborhood

Concentrated Black(Black)	80% Black	Urban & Suburban & Rural
Predominantly Black(Black/White)	30-60% Black	few nonwhites
MultiRacial(Multi/Black)	> 30% Black	< 20% white
Other/Black	< 30% Black	Urban & Suburban & Rural

NEIGHBORHOOD CHARACTERISTICS

Each of the 28 research sites were categorized based upon racial/ethnic composition. More specifically the sites were examined for the percentage of persons reporting black race. The purpose of this categorization is to allow for the examination of research sites based upon the degree on concentration of blacks. Urban and rural concentrated areas are not examined separately. Although urban and rural areas differ significantly in patterns of undercount, they were combined in the interest of examining only those factors which relate to concentrations. Other areas are combinations of percentage black and other racial/ethnic groups. The neighborhood categories have the following characteristics:

Concentrated Urban: These are research sites which are located in urban or rural areas and which are at least 80 percent black. There are five sites in this category.

Predominantly Black (white): All of these sites have a strong black presence. These are research sites which are at least 30 percent black, but range between 30 and 60 percent black. These are areas which are largely composed of black and white, with few persons of other race/ethnic identification. They are urban and suburban. There are two sites in this category.

Other race/ethnic and very few blacks: These are sites in which most residents are not black. These are less than 30 percent black with most being less than 10 percent black. In some instances the majority of persons may be persons of other undercounted groups, but very few are black. These areas are urban and suburban. There are 12 sites in this category.

Multiracial (black): These are neighborhoods which contain mostly blacks, asians, and hispanics. Less than 20 percent of the persons were identified as white, but at least 30 percent black. These areas are urban and suburban. There are three sites in this category.

WHOLE AND WITHIN HOUSEHOLD VARIABLES

The research examines variation for neighborhoods on several variables. As previously stated, the research emphasizes the population of those persons omitted by the Census. One of these variables is type of omission. The data allows for the identification of those persons who were missed within a household, while other members of the household were correctly enumerated. Also, it allows for the identification of those persons who were omitted as a part of an entire household omission. Whole and partial household omissions serve as indicators of different types of problems in population coverage. Ethnographic data indicates that whole household omissions generally occur in situations where there are problems locating and identifying the housing units, or in situations involving mobility. Partial household omissions tend to occur in situations involving problems in identifying household members.

FINDINGS

Table 2 shows the composition of the two (Census and AE) samples for all persons who self-identified as black. The black subsample shows a total of 1,616 persons enumerated by the Census, and 1,752 enumerated by AE. In both instances, as would be expected, the majority of persons are to be found in concentrated (black) areas. The total number of cases resolved to be correct from both sources is 1,657. The neighborhood category in which Census found more persons than did AE is in places which are multiracial.

Table 2**Frequency Distributions for Both Samples by Neighborhood Type**

	<u>Census</u>	<u>AE</u>	<u>Resolved</u>
Black	664 (41.71)	760 (43.80)	663 (40.01)
Black/White	195 (12.07)	228 (13.01)	226 (13.64)
Multi/Black	517 (31.99)	428 (24.43)	468 (28.24)
Other/Black	240 (14.85)	336 (19.18)	300 (18.11)
Totals	16 (100)	1752 (100)	1657 (100)

Sex ratios in Table 3 indicate that males are counted in fewer numbers than are females, but that there is variation across types of neighborhoods. Overall, Census found fewer males than did AE with sex ratios of .89 and .91, respectively. These ratios were calculated on all age groups and does not separate those over the age of 18. The ratios for Census and AE are most similar in neighborhoods with the highest percentages of blacks. This may indicate that there are, indeed, fewer males residing in these areas, or it may indicate that the factors operating to produce census omissions of males are the same for AE in places where blacks are the vast majority. Clearly, the enumeration carried out by the community researcher found males in higher numbers than did Census. In areas where blacks reside with other racial/ethnic groups which also tend to be undercounted, the two samples differ significantly.

Table 3
Distribution by Sex and Sex Ratio

	<u>Census</u>		<u>Ratio</u>		<u>AE</u>	<u>Ratio</u>
	<u>Male</u>	<u>Female</u>		<u>Male</u>	<u>Female</u>	
Black	47.26	52.74	.90	47.70	52.30	.91
Black/White	44.62	55.38	.81	46.05	53.95	.85
Multi/Black	47.36	52.72	.90	46.30	53.70	.86
Other/Black	47.44	52.56	.90	50.76	49.24	1.03
% of Total	46.97	53.03	.89	47.73	52.27	.91

It is interesting to note that the sex ratio is lowest for blacks in the area where they reside with whites. This is true for both samples. Table 4 shows percentages for correctly enumerated, omitted, and mobility, by neighborhood type. In each category, the total frequency for that category is divided by the total number of

cases which were resolved for that category. For example, 538 is 81.15 percent of all resolved cases in the sites where blacks are concentrated. Since these are separate distributions for the subsample, the total number of cases resolved was used in the denominator to create a consistent base for evaluation. Similarly 9.20 percent of all resolved cases were omitted by Census in the concentrated black sites. What has been termed undercount ratio takes the number correctly censused and divides by the number resolved. The percent of mobility includes all recorded movement in or out of the site during the time of the study.

Table 4
Subsample Distributions for Correctly Censused and Omitted and Percent of Mobility

	<u>Correctly Censused</u>	<u>Omitted</u>	<u>Percent of Mobility</u>	<u>Undercount Ratio**</u>
Black	538 (81.15)*	61 (9.20)	173 (26.10)	-.18
Black/White	167 (73.89)	29 (12.83)	35 (15.48)	-.26
Multi/Black	362 (77.35)	98 (20.94)	60 (12.82)	-.23
Other/Black	231 (77.00)	58 (19.33)	58 (19.33)	-.20
Total	1298 (78.33)	246 (14.85)	326 (19.67)	-.22

* Percent of this category based upon percent resolved and does not add to 100.

** Ratio = (correctly censused/resolved) - 1

The data indicate that the undercount ratio (-.18) is lowest in the places which were nearly all black and highest (-.26) in neighborhoods which were integrated with black and white. One of the sites in the Black/White category is located in the vicinity of a university, which may account for the high rate of mobility (15.48) in that instance. It is important to note that in those areas with the highest concentrations of blacks, the degree of mobility (26.10%) is also highest. Mobile persons do not show up on Census records, or they do not show up on AE records, because of movement in or out of the site during the period of data collection. So that even though the coverage rate for the Black sites (-.18) is lowest, the number of persons actually omitted may be greater because of mobility. These data tend to indicate that mobility is a significant factor in total count for areas of this type, since for the non-mobile population the percentage correctly censused is higher than in other areas.

The highest percentage of persons omitted is in the multiracial neighborhoods where the least amount of mobility is observed. Racial/ethnic heterogeneity in neighborhoods appears, from ratios, to decrease the likelihood of blacks being counted even if there is less mobility in the area. This may be due, in part, to race/ethnic categorization differences between AE and Census. For one of the multiracial sites, 22% of Census records list race as missing. The likelihood of ambiguity with regards to race/ethnicity may be greater in a heterogeneous situation or where race may have been imputed by an enumerator. It may also be due, in part, to differences in the reporting of race by respondents. For example, one research reported that "Some Haitians inferably chose not to identify with a racial category. They chose "O" for other, or did not respond to the category at all" (Wingerd, 1992).

Table 5
Whole Household & Partial Household Omissions*

	<u>Type Of Omission</u>	
	Partial	Whole
Black	40.74	59.26
Black/White	58.14	41.86
Multi/Black	26.92	73.08
Other/Black	28.81	71.19
%observation AE	45.16	61.54
%one family unit	53.68	28.02
Total	35.38	64.62

*Percentaged within category

Table 5 shows percentages for type of omission by whole and partial household. Of all within household and whole household omissions by Census, 45.16% and 61.54%, respectively, were detected by observation during the Alternative Enumeration. This information was not provided by other persons in site, and was not provided by the individual being enumerated. This finding emphasizes the need for neighborhood-level involvement in enumeration. Also, 53.68% and 28.02% of all within household and whole household omissions, respectively, are for persons living in one-family detached houses. The remaining percentages, which are not presented here, are distributed across categories of multiple unit housing. Overall, most omissions were whole household omissions, and these occurred largely in multiple unit housing situations. This emphasizes the problem of irregular housing units for censusing. In all instances, except for black/white sites, the majority of omissions are whole household omissions. The black/white area also has the lowest percentage of blacks correctly enumerated by Census, and the highest undercount ratio. The multiracial areas show the highest percentage of whole household omissions but the lowest percentage of mobility.

TENTATIVE CONCLUSIONS

The data show variation in census omission rates for racial composition of the neighborhoods. This does suggest that the omission rate for blacks is not uniform, but is related to the characteristics of place. It would appear from these data that sites vary significantly in the extent of residential turnover, as indicated by mobility. This may be, in part, the reason why whole household omissions are more typical of the sample. Given these observations, omission rates might be lowered by:

1. Extending the residence rule from one day to one month. Individual characteristics which are changeable (age, marital status, etc.) might be restricted to a particular day. In this manner evidence may be given on families by neighbors and others allowing for at least a partial enumeration of recent outmovers, and a full enumeration of recent in-movers.

2. Partial household omissions might be reduced by allowing for reports by proxy for individual family members who are transient. In the concentrated black areas, much of the undercount ratio is reduced by eliminating mobile individuals as omissions. The AE was able to enumerate these individuals by observation. The same observation report might be easier to solicit from stable household and stable residents if the amount of information requested is limited to that which the informant feels comfortable in giving. (This is consistent with a suggestion made by the researcher at a workshop during this conference.)
3. In geographical areas which are multiracial, and where the information soliciting racial identification is missing on the Census form, allocate race for the total number of such instances based upon the percentage composition, by race, for the defined geographical area.

REFERENCES

- Brownrigg, Leslie A. 1990. 1990 Guidelines for the Alternative Enumeration Part One: Geography and Physical Space. Center For Survey Methods Research, Bureau of The Census, Washington, D.C.
- Brownrigg, Leslie A. and Elizabeth Martin. 1989. Proposed Study Plan for Ethnographic Evaluation of Behavioral Causes of Undercount. Center For Survey Methods Research, Bureau of The Census, Washington, D.C.
- de la Puente, Manuel. 1991. "In Search of The Causes of the Differential Census Undercount of Racial and Ethnic Minorities: Overview of Ethnographic Studies of Census Enumeration". Paper presented at the 86th Annual Meeting of the American Sociological Association, Cincinnati, Ohio.
- Fein, David J. 1990. "Racial and Ethnic Differences in U.S. Census Omission Rates." Demography, vol 27, no. 2.
- Wingerd, Judith. 1992. Concentrated Urban Haitians: Documented/Undocumented. Ethnographic Evaluation of the 1990 Decennial Census Report #7. Prepared under Joint Statistical Agreement # 90-10. Bureau of the Census, Washington, D.C.