

## Ghettoizing Outdoor Advertising: Disadvantage and Ad Panel Density in Black Neighborhoods

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**ABSTRACT** *This study investigated correlates of outdoor advertising panel density in predominantly African American neighborhoods in New York City. Research shows that black neighborhoods have more outdoor advertising space than white neighborhoods, and these spaces disproportionately market alcohol and tobacco advertisements. Thus, understanding the factors associated with outdoor advertising panel density has important implications for public health. We linked 2000 census data with property data at the census block group level to investigate two neighborhood-level determinants of ad density: income level and physical decay. Results showed that block groups were exposed to an average of four ad spaces per 1,000 residents and that vacant lot square footage was a significant positive predictor of ad density. An inverse relationship between median household income and ad density did not reach significance, suggesting that relative affluence did not protect black neighborhoods from being targeted for outdoor advertisements.*

**KEYWORDS** *African American/black, Neighborhoods, Outdoor advertising, Disorder.*

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Public health literature corroborates what residents and activists in black neighborhoods have long argued: alcohol and tobacco are pervasive in these communities, both in retail outlets<sup>1,2</sup> and advertising.<sup>3-5</sup> Outdoor tobacco advertising was only recently eliminated after the 1998 Master Settlement Agreement, wherein the tobacco industry agreed to various restrictions as part of its settlement with states.<sup>6</sup> In addition to differential rates in the marketing of “vice products”, as alcohol and tobacco products have been called,<sup>7</sup> research also shows that black neighborhoods have more *total* billboards (regardless of content) than white neighborhoods. Two studies conducted in Chicago revealed that predominantly black and minority wards contained a disproportionate number of billboards—in some cases almost twice the number as white majority wards.<sup>3,4</sup> Research conducted in San Francisco found 2.2 billboards per 1,000 residents in black communities versus 1.1 in white and other communities,<sup>8</sup> and an investigation of New Jersey cities also showed higher numbers of total billboards in black neighborhoods.<sup>5</sup>

We argue that these findings are meaningful from a public health perspective. While some outdoor marketers contend that “outdoor [advertising] has gotten away from the old tobacco/liquor advertising syndrome”,<sup>9</sup> alcohol advertisements clearly continue to be a mainstay in outdoor advertising.<sup>10</sup> Research suggests that

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most of these advertising dollars find their way to black communities. For this reason, the correlates of total outdoor advertising space density in these neighborhoods warrant careful study. Although we know that black neighborhoods across the United States have been disproportionately targeted compared to white neighborhoods, we know little about heterogeneity *within* black communities. Are these neighborhoods uniformly populated with billboards and other advertising spaces, or are there factors that induce higher or lower levels of advertising density?

In this paper we examine the influence of area-based indicators of income and physical decay as determinants of ad space density in predominantly black neighborhoods in New York City. With regard to income, it is logical to expect that more affluent areas would be less densely populated with outdoor advertising, particularly because outdoor marketers use certain ad formats (e.g., the 8-sheet poster) primarily to target low income consumers.<sup>11,12</sup> Indeed, research shows that neighborhoods with high percentages of families below the poverty level and with less than 12 years of education have been shown to have higher concentrations of total billboards.<sup>4</sup> Because individuals in predominantly black neighborhoods with higher socioeconomic levels would be expected to have greater exposure to a variety of media (e.g., newspapers, magazines, television, Internet), outdoor advertising should be less dense in these areas.

However, it is also possible that outdoor advertisers simply target African American communities regardless of area income status. To the extent that predominantly black areas are generally seen as “the ghetto” by advertisers, placement of ad spaces may show little variability between high or low-income neighborhoods. Spatially segregated areas of black residents are often seen as culturally inferior, thereby facing the same institutional insults as poorer communities.<sup>13</sup> In addition, African Americans with higher incomes are often not spatially distinct from those with lower incomes,<sup>13–15</sup> making it possible that relatively affluent African American neighborhoods will not be protected from “spillover” of advertising from lower income areas.

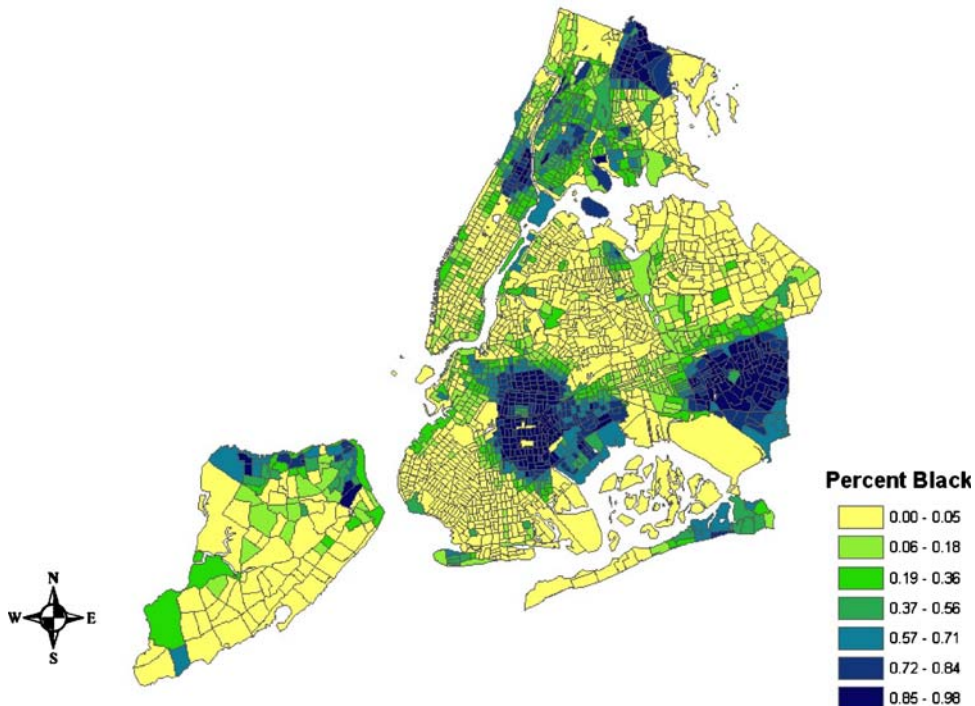
With regard to physical decay, the structural nature of the neighborhood is also likely to determine the advertising landscape. One reason poor neighborhoods and predominantly African American and Latino neighborhoods contain more billboards is because white neighborhoods are generally more affluent and better able to control their environment.<sup>3</sup> In this vein, physical disorder (e.g., litter, graffiti) is a salient visual signal that communicates how effective residents are at seeking neighborhood improvement and triggers attributions and predictions in residents and outsiders of a community.<sup>16</sup> Physical decay (e.g., burned-out and deteriorated housing) is a closely related construct.<sup>17</sup> We were particularly interested in the presence of vacant lots as a form of physical decay because this form of physical decay is one of the most visible and demoralizing signs of inner city decline, particularly in northeast cities.<sup>18</sup> In addition to negatively affecting the visual character of neighborhoods, vacant lots are often used for illicit activities such as drug sales or prostitution.<sup>19</sup> Thus, vacant lots in African American neighborhoods may serve to attract more outdoor advertisements because: (a) deteriorated space may be perceived by advertisers as markers of a community that may not be as well able to fend off unwanted outdoor ads, and/or one in which municipal regulations are minimally enforced; (b) landlords may be more inclined towards the financial rewards conferred by installing billboards on their buildings; and (c) deteriorated spaces simply create more available space within which ads may be placed, compared to neighborhoods that are more fully built up.

In the present study, we examine the relative influence of area socioeconomic status (median household income) and physical decay (square footage of vacant lots) on the density of outdoor media controlled ads (defined below) in predominantly black New York City neighborhoods. We hypothesized that median household income would be negatively related to the number of ad spaces per 1,000 residents at the census block group level. We also hypothesized that the total square footage of vacant lots would be positively related to the number of ad spaces per 1,000 residents at the census block group level.

## MATERIALS AND METHOD

### Study Geography

New York City remains a highly segregated city. The dissimilarity index is a commonly used measure of segregation<sup>20</sup> and refers to the distribution of populations across an urban area. Ranging from 0 to 100, 0 indicates no segregation and 100 indicates total segregation. For example, an index of 42 indicates that 42% of black residents would have to move in order to achieve equal distribution of blacks and whites; values above 60 are thought to indicate very high segregation.<sup>21</sup> Based on 2000 census data, the black–white dissimilarity index was 85.3,<sup>22</sup> compared to 81.0 in 1970.<sup>15</sup> As can be seen in Figure 1, the largest black populations are spatially contained in the Northeast Bronx, Upper Manhattan, Southeast Queens, and Central Brooklyn. For the purposes of the present study, we



**FIGURE 1.** Percent black at the block group level (year 2000) across New York City's five boroughs. (Map created with ArcGIS 9).

sought to identify neighborhoods from these areas that were matched on key population and land use characteristics, but which differed in income levels. Using neighborhoods boundaries commonly recognized by both residents and the NYC Department of Planning, we selected Central Harlem (Manhattan), Fort Greene, and Clinton Hill (Brooklyn).

We chose these neighborhoods because all three have moderate to high population density and, though historically black, have seen increased numbers of white residents and gentrification in recent years. These neighborhoods also share similar historical experiences with regard to such policies as urban renewal and the building of public housing. Land use is characterized by residential and mixed-use streets, and housing structures are brownstones and multifamily apartment buildings. In 2000, Central Harlem's median household income was \$19,924, while Fort Greene was approximately \$33,000 and Clinton Hill was approximately \$39,000.<sup>23</sup> Black neighborhoods with higher median household incomes are also located in Queens, but because these are more suburban in nature, with lower population densities and a preponderance of detached single-family housing, they were not included in this study.

Our investigation focused on residential census block groups (zoned R6 or R7, which includes mixed-use, but not general commercial districts) that were at least 60% black. We also restricted our analysis to block groups where the total population and the total number of housing units totaled 100 or more. Taken together, these parameters allowed us to examine predictors of ad space density in areas that were all predominantly black, matched on land use and population characteristics, but varied in area income.

### **Data Sources**

Our analysis is based on outdoor advertising spaces that were permanently affixed to the built environment and managed by outdoor marketing companies. Outdoor advertising takes a variety of forms in New York City. "Billboards" is a generic term that actually encompasses several formats. These include large bulletins, wallscapes, and smaller formats that are placed on buildings (e.g., 30-sheets, 8-sheets). Advertisements also appear on "street furniture" (phone kiosks, bus shelters), and subway entrances. Although outdoor advertising spaces generally must be registered with the New York City Department of Buildings, there is no comprehensive database with listings of all advertising spaces. To obtain this information, each individual building address must be queried to determine if an advertisement is mounted there. Thus, as described below, we counted these spaces through systematic observation at the street level. This method also allowed us to count ad spaces which may have been unlicensed.

Data on vacant lots were obtained from PropertyShark,<sup>24</sup> a website that provides consolidated New York City property records gleaned from a variety of local government sources, and in this case, the Department of Buildings. The site contains a clickable map feature with which one can quickly find and explore neighborhoods at the tax lot level, with color coding used to demarcate building class. Vacant lots were thus easily identified on each street in the study area. Clicking on a lot yielded a report detailing the lot dimensions in feet as well as the total square footage. Because there were some discrepancies between the lot dimensions and the reported square footage, we re-calculated square footage in our database using the reported dimensions.

### Procedure

We conducted a census of all the locations where outdoor advertising appeared by walking up and down all streets within neighborhood boundaries, recording the presence of ad spaces by type. Some ad formats presented multiple spaces per location. For example, bus shelters are fitted with one or more glass panes which allow two ads to be placed inside, back to back. Thus, each side was counted as an ad space. The same was true for phone kiosks, which contained between two and four available ad spaces. Face blocks from both sides of north–south running avenues and east–west running major streets were studied in their entirety, but approximately the first hundred feet of east–west running residential streets were studied, as advertising is generally absent from buildings in the center of residential blocks.

The presence of ad spaces was recorded on a tally sheet, with approximate address location. That is, ad spaces which were adjacent to buildings with visible addresses were recorded with the same address. Those that were located in areas without visible addresses nearby were initially coded with general directional information (e.g., north side of 115th between 5th Avenue and Lenox) and later coded with approximate addresses based on online address locators from the NYC Department of City Planning. All geocoding and spatial analyses we conducted with ArcInfo geographic information systems software (ArcGIS 9). Census data from the 2000 census summary files 1 and 3 were merged with the selected census tract files in ArcGIS in order to examine demographic information.

### ANALYTIC PLAN

A total of 90 block groups were included in the analyses. The dependent variable in the study was ad density, defined as the number of ad spaces per 1,000 residents. Initial inspection of the data revealed moderate positive skew for ad density, and square root transformations were used for the dependent variable in the regression analysis.

To test the influence of area income and physical decay on ad space density at the census block group level, we conducted an ordinary least squares regression with primary independent variables of median household income and total vacant lot square footage. We also adjusted for percent black, because although the included block groups were all predominantly black, a block group that is 60% black may differ from one that is 90% black. Our initial model assessed possible covariates, but none emerged as significant. These included percent unemployed, percent with a college degree, percent of residents aged 21 years or younger, and average feet of bus routes per acre. Thus, linear regression was completed with the three independent variables entered simultaneously; data were analyzed using SPSS 13.0.

### RESULTS

We counted a total of 475 advertising spaces, listed by category in Table 1. As can be seen, the majority of advertising spaces were located on “street furniture” ( $n=374$ ; 79%), which were predominantly phone kiosks, followed by bus shelters and subway entrances. Billboards ( $n=101$ ) comprised 21% of all ads, with 8-sheet posters representing the most common type.

**TABLE 1. Descriptive statistics by ad format**

	Frequency of ad spaces by subtype ( <i>n</i> )	Percentage frequency of ad spaces by subtype (%)
Billboard subtypes		
8-sheet	84	18
Wallscape	9	2
Billboards	4	1
30-sheet	4	1
Subtotal	101	21
"Street furniture" subtypes		
Phone kiosk	201	42
Bus shelter	107	23
Subway entrance	66	14
Subtotal	374	79
Total ( <i>N</i> )	475	100

Table 2 shows block group descriptive statistics. As can be seen, block groups had on average approximately 4 ad spaces per 1,000 residents, ranging as high as almost 29 ads. These higher densities generally reflect the presence of several ad formats with multiple spaces (e.g., a block group might contain several phone kiosks and bus shelters, each with multiple spaces, in addition to billboards). Vacant lots were common throughout the study area, and the total square footage was higher in areas with lower median household incomes. Median household income ( $r=-0.234$ ,  $p=0.03$ ) and vacant lots ( $r=0.321$ ,  $p=0.002$ ) were significantly correlated with ad density, and percent black was just outside the range of significance ( $r=0.202$ ,  $p=0.056$ ).

The regression analysis (shown in Table 3) yielded adjusted  $r^2=0.21$ ,  $F(3, 86)=7.50$ ,  $p=0.000$ . Vacant lot square footage emerged as a significant predictor of ad density, but our hypothesis regarding income was not supported. After accounting for vacant lots, median household income was not significant.

## DISCUSSION

This study sought to examine determinants of outdoor ad space density in predominantly black New York City neighborhoods. Overall, we found advertising panel density at a rate of approximately 4 spaces per 1,000 residents, which is higher than in some reports.<sup>6</sup> The higher densities we found may be due to changes in the formats used to advertise (e.g., multi-face phone kiosks), changes over time in outdoor marketing strategies, or simply idiosyncrasies in New York City.

**TABLE 2. Descriptive statistics for the study area block group**

	Mean	SD	Min	Max	Number of Block Groups
Ad density (ads per 1,000)	4.4	6.09	0	28.69	90
Vacant lot square footage (feet)	15,651.47	18,048.02	0	81,071	90
Median household income (dollar)	26,048.06	13,113.38	7,159	71,779	90
Percent black	0.8	0.097	0.6	1	90

**TABLE 3. Regression model**

Model	$\beta$	T	Sig.
(Constant)		0.291	0.772
Percent black	0.119	1.15	0.252
Vacant lot square footage	0.302	2.99	0.004
Median household income	-0.193	-1.85	0.067

$r=0.455$

$r^2=0.207$

Adjusted  $r^2=0.180$

Standard error=1.27

We asked whether area-based income level and physical decay predicted the density of ad spaces in residential census block groups that were at least 60% black. We hypothesized that areas with higher median household income would have fewer ad spaces, and that areas with high total square feet of vacant lots would have more ad spaces. Only the latter hypothesis was supported by the data. As noted earlier, vacant lots are likely to result in more ad spaces not only because it is a highly visible sign of disorder in a community, but because it allows for the installation of ads in a manner that would not be possible without them. For example, we observed several decrepit and unoccupied buildings that had ad panels installed over bricked-up windows. We also frequently observed standard outdoor ad panels mounted on posts in vacant lots, or affixed to buildings with walls adjacent to vacant lots. One lot in Central Harlem, which was abutted by buildings on two sides, and by sidewalks on the other two, contained eight total ad faces: one double-sided 8-sheet on a free-standing post, another five attached to the buildings, and a wallscape on one building (see Figure 2). These installations are pointed illustrations of the manner in which structural blight acts as a magnet for outdoor advertising.

In general, outdoor advertising reflects tensions between the accrual of revenue for cities and the aesthetic and public health imperatives of neighborhoods. This is particularly true for segregated black neighborhoods, because geographic isolation inhibits the ability to form political coalitions and enact desired public policies.<sup>15</sup> As a result, political leaders have often cut services in these neighborhoods, leading to a decline in infrastructure.<sup>21,25</sup> In our study, physical decline in the form of vacant lots was positively associated with ad density. Thus, it would appear that developing the land would be beneficial for neighborhoods on multiple levels. And yet, longtime community members may not fully reap these benefits. For example, in the late 1980s one city block in East Harlem was called “Little Beirut”; it contained only 13 buildings on 27 tax lots and was devoid of residents.<sup>26</sup> Today, four blocks from this location, new condominiums are being built, one of which features “12 exquisite homes which exhibit a classic feel fused with modern luxury.”<sup>27</sup> These apartments start at \$395,000 for a 726 sq. ft. one BR, in a census tract where the median household income is \$25,941, and the unemployment rate is 25.1%.<sup>23</sup> If such housing development continues, it is likely that outdoor advertising would decline, due to less available space for installations. However, it remains to be seen whether current residents would be able to afford living in the revitalized neighborhood.

We found that area income level was not significantly related to ad density after controlling for vacant lots. This suggests that the most economically vulnerable



**FIGURE 2.** A vacant lot at 128th St. and Adam Clayton Powell Jr. Blvd has several ad spaces installed in the ground and on the surrounding buildings.

segments within the communities in our study were not more burdened with outdoor advertisements than the more economically advantaged. At the same time, these results are testament to the finding that African Americans with higher incomes may not be insulated from certain neighborhood conditions. Despite descriptions of some formats (e.g., 8-sheets) as being used to reach people with less exposure to other forms of media, we found that predominantly black block groups with high incomes were equally exposed to outdoor advertising.

Some study limitations should be noted. First, we studied a small number of predominantly black neighborhoods in New York, and thus the number of block groups included in the study (90) was modest. This may have limited our ability to detect an effect for income, which did approach significance. In addition, we used demographic data from the 2000 census. In the neighborhoods we studied, both racial and socioeconomic demographics have undergone marked changes since that time, particularly due to gentrification. Thus, we may not have been able to detect associations between median household income and ad density simply because the census data is not current enough to reflect neighborhood transitions. Second, the cross-sectional design of the study means that we cannot define the association between vacant lot square footage and ad density as causal. For example, it is possible that rather than vacant lots “attracting” ad spaces, the presence of ads signals to landowners and real estate developers that a given area may not be an economically profitable one in which to build, resulting in more vacant lots. Longitudinal analyses would assist in elucidating the directionality of this relationship. Third, although we conceptualized vacant lots as an indicator of neighborhood decay, all lots may not be equally indicative of blight. Our data



source did not allow us to differentiate among lots that lay fallow and overrun with weeds or were subject to dumping, and those that were in the midst of new construction, or had been converted into community gardens.

### Implications for Urban Health

Despite these limitations, our findings have implications for public health and well-being in African American communities. Because ad spaces tend to contain promotions for liquor (and formerly tobacco), they have often aroused the ire of community residents and activists across the nation,<sup>28,29</sup> and black-oriented newspapers have given considerable attention to policies on alcohol advertising restrictions.<sup>30</sup> However, ad spaces themselves have also been described as “litter on a stick”<sup>31</sup> and as destructive to community character.<sup>32</sup> Thus, the visual disorder caused by a high density of outdoor ads may reproduce inequality by marking neighborhoods as “the ghetto” and reducing assessed value by residents and business owners. Indeed, billboards have been described as symbols that visually define ghettos.<sup>26</sup> The physical features of a community are highly visible class markers, such that in Boston’s affluent South End, “the diffuse light of the low-set lamps betrays a sense of tranquility, discretion, and privilege”.<sup>33</sup> What then, does an abundance of 8-sheets, bulletins and wallsapes evoke, and what feelings are they likely to engender among residents?

Research shows that perceived neighborhood disorder adversely affects mental health, increasing psychological distress<sup>34,35</sup> and depressive symptoms<sup>36</sup> among residents. Some research indicates that high concentrations of alcohol density (sales and advertising) are perceived as disorder.<sup>17</sup> Thus, it is possible that high ad space density in itself may also be perceived as disorder, and thereby act as a chronic stressor. Similarly, to the extent that individuals in predominantly African American communities perceive the proliferation of outdoor advertising as a form of racism, high ad density places people at risk of the negative outcomes associated with perceived racism, including psychological distress,<sup>37-39</sup> poor mental health,<sup>40,41</sup> increased smoking and drinking,<sup>42,43</sup> and adverse health conditions, including cardiovascular problems.<sup>44-47</sup> Future research should investigate associations between outdoor advertising and health in African American communities.

### ACKNOWLEDGMENT

Research was supported by a grant from the Department of Defense, The U.S. Army Medical Research and Materiel Command: W81XWH- 041-0829. We are required to indicate that the views, opinions and findings contained in this report are those of the authors and should not be construed as an official Department of Defense position, policy or decision unless so designated by other documentation. We would like to thank Ghairunisa Galeta for her assistance in data collection, and Meghan Jernigan and Dorothy Louis for assistance with manuscript preparation.

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