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What is the relationship between unhealthy food access (ratio of bodegas to supermarkets) and neighborhood poverty rates?

The relationship between the accessibility of unhealthy food options, such as fast food and the frequent small corner stores (bodegas) that are found, compared to larger, well-stocked supermarkets is a major issue that relates to poverty rates in neighborhoods of New York City. The distribution of these food sources is directly linked to the income levels and poverty rates in various NYC neighborhoods. Certain neighborhoods, especially low income, have a surplus of fast-food establishments and low access to fresh and healthy groceries, and this has a great impact on the daily lives of the residents. In areas with limited access to nutritional food options, residents are more likely to rely on unhealthy food sources, which will lead to various health issues. Furthermore, the issue of unhealthy food access contributes to economic inequality within New York City. Individuals in neighborhoods with limited access to fresh and affordable groceries often face higher food costs and limited choices, which can hurt their budgets and worsen their financial hardship. In response to these issues, there are a range of actions and policies that have been implemented to address the issue of unequal food access in low-income neighborhoods. Initiatives have been designed to increase the availability of healthy food options and promote education on nutrition. These efforts aim to combat the harmful effects of limited food access and allow residents to make healthier food choices. Ultimately, there needs to be a better understanding of how unhealthy food access and poverty rates are connected in New York City and why it's important to address this issue.

The following data from NYC Environmental Health and Data portal indicates the relationship between poverty rates and the ratio of bodegas to supermarkets.

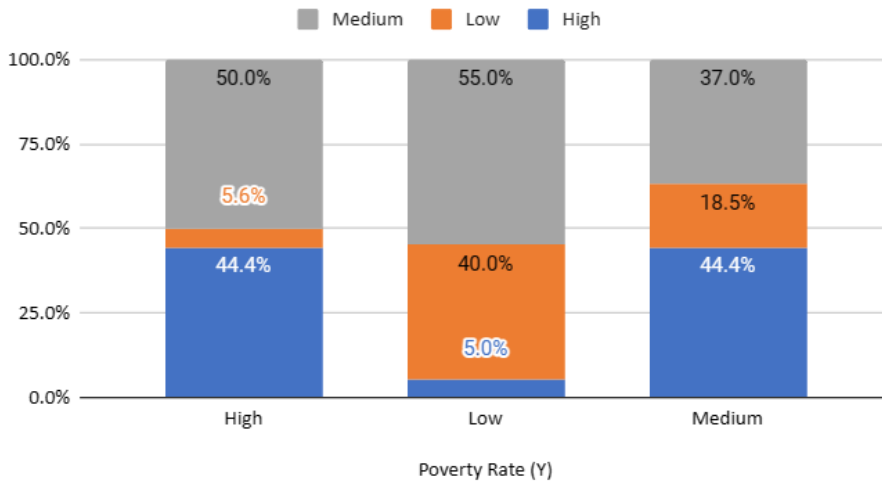
Ratio of Bodegas to supermarket by poverty rate

Ratio Bodegas to Supermarkets	Poverty Rate Percent
High =More than 20	High =More than 20
Medium =10.1-20	Medium =10.1-20
Low =Less than 10	Low =Less than 10

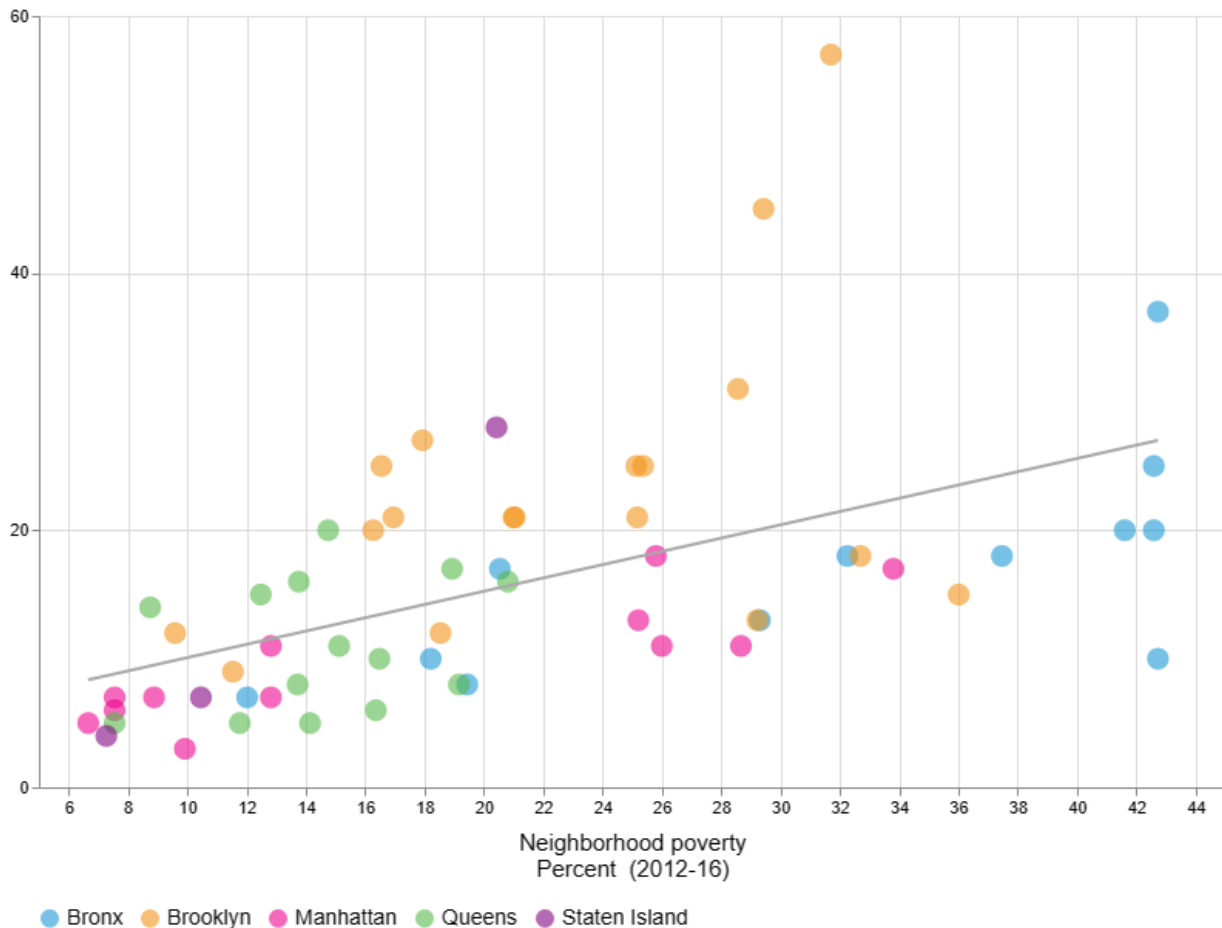
(Definition of high, medium and low)

Poverty Rate (Y)	High	Low	Medium	Grand Total
High	44.4%	5.0%	44.4%	32.3%
Low	5.6%	40.0%	18.5%	21.5%
Medium	50.0%	55.0%	37.0%	46.2%
Grand Total	100.0%	100.0%	100.0%	100.0%

Poverty Rate by Percentage of Bodegas to Supermarket



Unhealthy food access Ratio Bodegas to supermarkets (2016)



Data from [Healthy eating data for NYC | Environment & Health Data Portal](#)

The ratio of bodegas to supermarkets in a community compares the number of bodegas present in that community to the number of supermarkets present in that community. A higher ratio of bodegas to supermarkets may suggest that a certain neighborhood has limited access to fresh and diverse food options. Bodegas typically offer a more limited selection of fresh produce and groceries compared to supermarkets. On the other hand, a low ratio indicates that residents in that neighborhood have access to a wider variety of food options. Supermarkets typically offer a more extensive selection of products, including fresh produce, meat, and a broader range of

groceries. Additionally, poverty rate indicates a percentage of the population in a specific area that is living in poverty and indicates their standard of living. A higher poverty rate suggests that a larger portion of the population is struggling to meet their basic needs, including food, shelter, clothing, and access to essential services, while a low poverty rate suggests that a significant portion of the population has sufficient income to meet their basic needs.

The table above compares both the poverty rate and the ratio of bodegas to supermarket in NYC neighborhoods. In neighborhoods where ratio of bodegas to supermarkets is low, 40% have low poverty rates, 55.0% have medium poverty rates and 5.0% have high poverty rates. However, where the ratio of bodegas to supermarkets is high, 5.6% are low poverty rate, 50% are at medium poverty rate and 44.4% have a high poverty rate. This data suggests that there is a correlation between the poverty rate and the ratio of bodegas to supermarkets. In neighborhoods with higher poverty rates, there tends to be a greater ratio of bodegas to supermarkets. This observation implies that residents in these areas may face limited access to fresh and healthy food options, including fresh fruits and vegetables, typically provided by supermarkets. While in low poverty neighborhoods, there is a lower ratio of bodegas to supermarkets.

In a research study titled “Measuring food deserts in New York City’s low-income neighborhoods.”, the author studies the accessibility and availability of food in low income and wealthier neighborhoods in NYC. They study the concept of food deserts and found that food deserts are primarily located in neighborhoods that have a higher population of African Americans/ black residents. They introduce a food desert index that measures healthy and unhealthy food options available to residents in certain areas that consists of three components which are access to supermarkets, bodegas carrying healthy food and fast-food restaurants. They studied block groups that consists of 3 city blocks by providing each block group with a

numerical value that is based on the presence of supermarkets, bodegas, and restaurants located within a quarter-mile radius, that were considered accessible to the block group. They computed the average number of supermarkets within this radius. They used "representative healthy food" scores they calculated along with the count of fast-food restaurants to determine the proportion of bodegas classified as "most healthy" and the proportion of all restaurants recognized as fast food establishments within the same radius. The results of the study were the following: In black-majority block groups, there were fewer bodegas classified as "most healthy," a lower number of supermarkets, and a higher food desert index score. On the other hand, in predominantly Latino block groups, there was a higher proportion of "most healthy" bodegas and a lower food desert score. For block groups with a higher proportion of white residents, there was a greater number of "most healthy" bodegas, more supermarkets, and lower food desert index scores compared to those with fewer white residents. Overall, their results implies that locations of food deserts are within the areas that have a higher proportion of black residents, while neighborhoods with a higher proportion of Latinos and Hispanics have a greater access to healthier food because their diet consists of less fat, sugary snacks and beverages, they mainly consume, rice beans and fruits. Additionally, in white and high-income areas they have more healthy food options and few opportunities of purchasing unhealthy foods. In general, once again it seems that higher income areas have access to healthier options compared to low-income areas.

Another research study titled "Neighborhood Disparities in Access to Healthy Foods and Their Effects on Environmental Justice." discusses environmental justice and states that "Environmental justice is concerned with an equitable distribution of environmental burden." In other words , environmental justice emphasizes the importance of ensuring equality regarding

environmental issues. Meaning that the negative impacts and challenges caused by environmental problems should be shared among all people and communities in a way that is just and equitable. It's about making sure that no group or community has a big portion of environmental problems, such as pollution or health risks, simply because of their race, income, or where they live. The study connects environmental justice with food access by researching on socio economic, ethnicity and racial disparities and their access to fast food outlets and convenient stores. The authors conducted studies that investigated variations in the accessibility of fast-food outlets and convenience stores in relation to the socioeconomic and racial/ethnic features of neighborhoods. They conducted 24 studies in which 14 of them were conducted outside of the United States. Eighteen studies explored the connection between income disparities and the presence of fast-food restaurants, with fourteen of them revealing a connection between neighborhood deprivation and the density of fast-food establishments. An analysis of 216 census tracts in Maryland, North Carolina, Mississippi, and Minnesota showed a higher prevalence of fast-food restaurants in lower-income neighborhoods. Similarly, an examination of 373 census tracts in King County, Washington, revealed that areas with lower household incomes had a greater concentration of fast-food restaurants. In South Los Angeles, California, poor neighborhoods had a higher proportion of fast-food restaurants compared to wealthier West Los Angeles. On a national level, a comprehensive study covering 21,976 US zip codes with a total of 259,182 full-service restaurants and 69,219 fast-food outlets found a notable concentration of these establishments in low- and middle-income neighborhoods, in contrast to high-income areas (Hilmers, et. al. 2012). In New Zealand, a nationwide study involving 74 territorial authorities, encompassing 37,760 neighborhoods, discovered that access to both multinational fast-food chains and local fast-food businesses was more significant in poor

neighborhoods than in wealthier ones. In Melbourne, Australia's second-largest city, residents in areas with the lowest weekly incomes were exposed to fast-food restaurants 2.5 times more than those living in areas with the highest weekly incomes. This study has shown that having low access to healthier food options is not only a problem for neighborhoods in New York City, the problem extends on a national and international level.

Moreover, an additional study titled “Disparities in Food Access Around Homes and Schools for NYC Children” focuses on access to food for children in NYC. The purpose of this study was to investigate the food surroundings near the residences and schools of children in New York City, categorized by their race/ethnicity and economic situation. The researchers connected data from specific home and school addresses of specific groups of public-school students in New York City from 2013 with information about nearby corner stores, supermarkets, fast-food places, and dine-in restaurants. They collected data from the NYC Department of Education to determine race, ethnicity and economic status. The students involved in the study were mainly 41% Hispanic, 26% black, followed by 17% Asian & Other and 16% White. Most of the students 85% were classified as low-income. The average age of the children was 11.8 years. Hispanic students, when compared to White students who are not low-income, lived closer to corner stores by 440 feet, fast-food restaurants by 277 feet, wait-service restaurants by 179 feet, and supermarkets by 562 feet (Ebel, et. al. 2019). For both low-income and non-low-income students, Black, Hispanic, and Asian students lived and attended schools in proximity to various types of food outlets more than White students did, except for wait-service restaurants, which Black students lived farther from. Hispanic and Asian students had better access to corner stores and supermarkets from their homes than White students. For instance, Black and Hispanic students who were not low-income had access to 2.4 and 5.5 more corner

stores, respectively, in comparison to not low-income White students. Overall, the study found that Black, Hispanic, and Asian students live and attend schools closer to nearly all food outlets compared with White students, regardless of poverty status. Among not low-income students, Black, Hispanic, and Asian students were closer from home and school to corner stores and supermarkets and had more supermarkets around their schools than White students (Ebel, et. al. 2019).

In conclusion, in comparison to the research found in the environmental health data portal and the three studies that were analyzed, the first two studies share similar finding. The studies showed that minority groups and low-income individuals have limited access to healthy foods that are found in supermarkets. But the last study found that Hispanics, Asians and Blacks had access to all food outlets compared to white students. This may be the case because the study primarily examined 11-year-old students and the types of food establishments located near schools, implying that schools are surrounded by various food outlets. In order to ensure that everyone, regardless of their race or income, has access to nutritious foods, it is essential to implement effective policies. One potential solution involves mandating that all neighborhoods have supermarkets within walking distance and making healthy food options more affordable for all residents.

Work Cited

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