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

ECON 2505ID: Environmental Economics

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The purpose of this research is to identify potential correlations between the ratio of bodegas to supermarkets and neighborhood poverty rates by analyzing data and other research articles' findings. The ratio of bodegas to supermarkets is representative of the ratio of unhealthy, processed foods to healthier food options respectively. The neighborhood poverty rates are representative of the population of people that are considered below the federal poverty level. The data used in this research paper was obtained from the online Environmental and Health Data Portal from the New York City government website.

(https://a816-dohbesp.nyc.gov/IndicatorPublic/data-explorer)

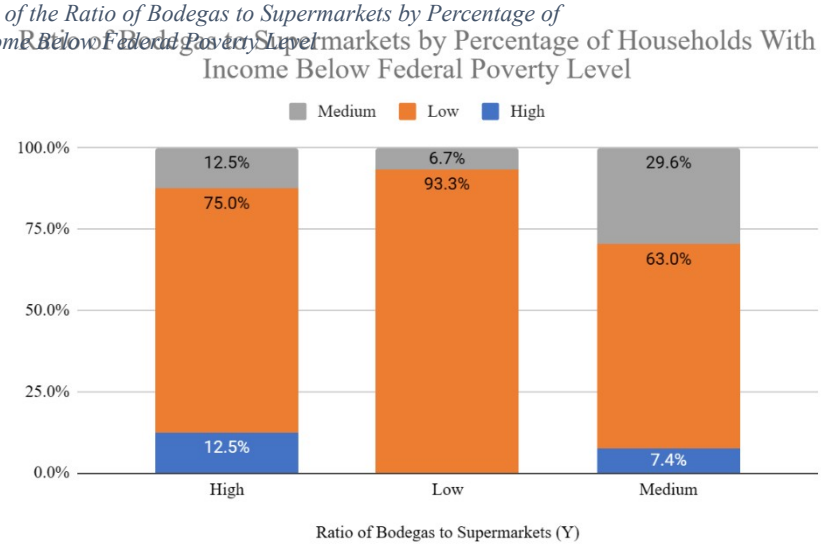
Table 1: Ratio of Bodegas to Supermarkets by Neighborhood Poverty Rates

COUNTA of Rate of Households with income below Federal Poverty Level (X) by Ratio of Bodegas to Supermarkets (Y)	*Rate of Households with income below Federal Poverty Level (X)*			
Ratio of Bodegas to Supermarkets (Y)	High	Low	Medium	Grand Total
High	12.5%	0%	7.4%	4.6%
Low	75.0%	93.3%	63.0%	78.5%
Medium	12.5%	6.7%	29.6%	16.9%
Grand Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Rate of Households With Incomes Below Federal Poverty Level (X) : High = More than 30%, Medium = 15.1-30%, Low = Less than 15%

Rate of Bodegas to Supermarkets (Y): High = More than 35%, Med = 20.1-35%, Low = Less than 20%

Figure 1: Pivot Table of the Ratio of Bodegas to Supermarkets by Percentage of Households with Income Below Federal Poverty Level



In neighborhoods where the percentage of households below the federal poverty level was low, 93.3% had a low ratio of bodegas to supermarkets. 6.7% of those neighborhoods have a medium ratio of bodegas to supermarkets and 0% have a high ratio of bodegas to supermarkets. In neighborhoods where the percentage of households below the federal poverty level was medium, 7.4% had a high ratio of bodegas to supermarkets. For those same neighborhoods, 29.6% have a medium ratio of bodegas to supermarkets, and 63.0% have a low ratio of bodegas to supermarkets. The neighborhoods with a high percentage of households below the federal poverty level, 12.5% have a high ratio of bodegas to supermarkets. In those neighborhoods, 12.5% have a medium ratio of bodegas to supermarkets, and 75% have a low ratio of bodegas to supermarkets.

The data shows that neighborhoods with a low percentage of households below the federal poverty level have a lower ratio of bodegas to supermarkets compared to neighborhoods that have medium or high percentage of households below the federal poverty level. From the

data, it can be surmised that there is a correlation between the percentage of households below the federal poverty level and the ratio of bodegas to supermarkets.

Hallum's research (2020) evaluates and analyzes the relationship between socio-economic disadvantaged neighborhoods and access to unhealthy food environment. The findings from their research were that socio-economically disadvantaged (SED) neighborhoods had the four unhealthy food outlet layers, convenience store density, discount store density, density of casual restaurants and density of fast-food restaurants, has a positive association. The findings also showed that where SED neighborhoods increased, the overall density of unhealthy and healthy food establishments also increased. Similar to previous research, one of the conclusions Hallum came to is that disadvantaged neighborhoods have more access to unhealthy food outlets such as convenience stores and fast-food restaurants. Another conclusion of Hallum's research is that disadvantaged neighborhoods also had significantly greater availability of grocery stores compared to advantaged groups. However, they mention that while these neighborhoods may have an increase in access to grocery stores, the residents may still not have the financial ability to purchase healthier, higher quality and more expensive food options.

Research done by James (2014) centered around whether fast-food access varied by census block group (CBG) percent black and poverty. The research was based on the average driving distance from each of these CBGs to the five closest top ten fast-food chains. The results James collected were that of the 209,091 CBGs analyzed, the CBG percent black was positively associated with fast-food access. The results also show that the relationship between race and fast-food access was stronger in CBGs with higher levels of poverty. James goes on to conclude that neighborhoods that were predominantly black had a higher access to fast-food while poverty itself was not an independent indicator of fast-food access.

Thomas' research (2022) explains the relationship between the psychological effects of poverty and unhealthy eating behaviors and choices. Thomas' research project was divided into separate experiments that were labeled as studies. The first study examined unhealthy food items served, in addition to the regular food items, to 175 participants from a homeless shelter. The unhealthy food items were served alongside an alternative, healthier option and the participants were also asked to complete an evaluation to determine their stress level. The results from this study concluded that stress levels mediated the effects of poverty on unhealthy food choices and behaviors. According to the study, as chronic stress increased, participants were more likely to choose unhealthy foods as opposed to participants who used self-affirmation to help manage and reduce stress levels.

In conclusion, the research seems to point to evidence of a positive (direct) relationship between the economic status of a neighborhood and their unhealthy food access. The data collected from the Environmental and Health Data Portal also supports this conclusion. As mentioned previously, neighborhoods where the percentage of neighborhoods below the federal poverty level is low, 93% had a low ratio of bodegas to supermarkets whereas the opposite side of the data, neighborhoods where the percentage of neighborhoods below the federal poverty level is high, 12.5% have a high ratio of bodegas to supermarkets. With such compelling research on this topic, I would recommend that local governments implement policies that would make healthier food options available and affordable in low-income neighborhoods. I would also recommend that those living in lower income neighborhoods form a community garden to help provide themselves with healthier food supplies.

Bibliography

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