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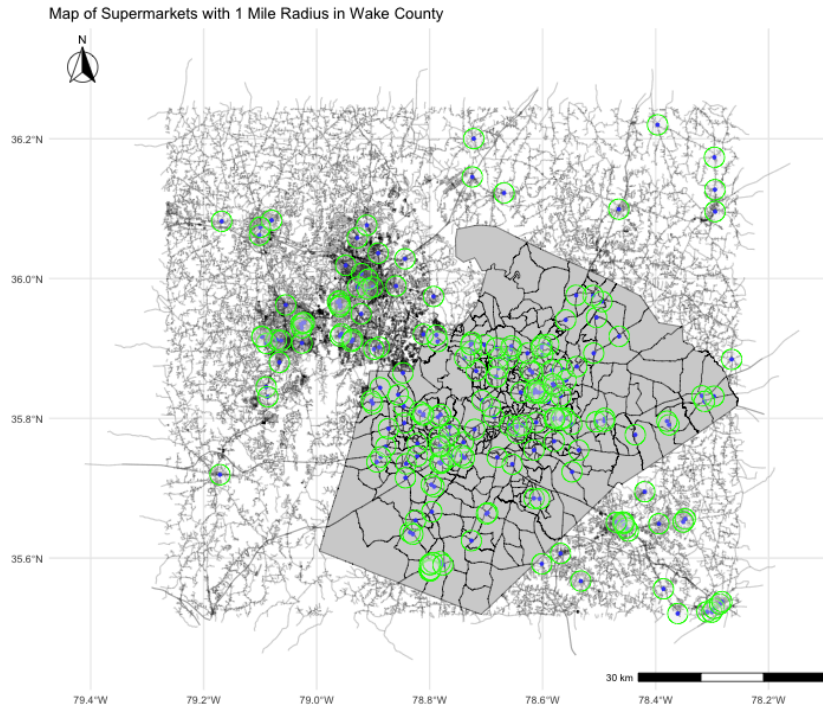
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Analyzing Food Desert Problem in Wake County

Section 1. Food Deserts and Supermarkets on a Map

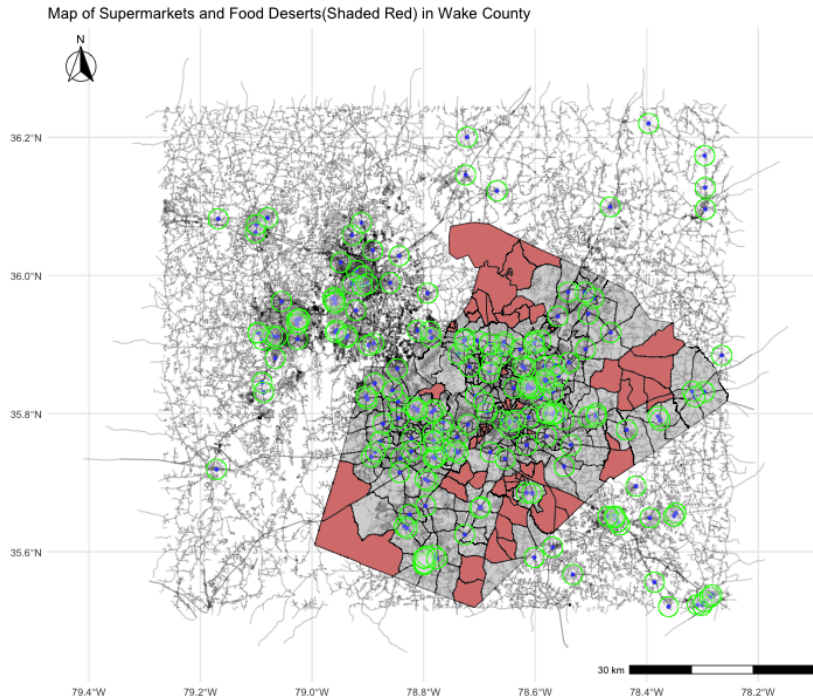
Food deserts are areas that are more than a mile away (or 1609 meters) from a supermarket. The Department of Health and Human Services has come across this issue and is trying to address this problem in the Triangle Area. These areas remain a persistent issue in the states, and it is critical that we analyze what areas are affected and restricted from accessing healthy food at reasonable prices. In particular, we will be looking at Wake County to determine the demographics that remain in the food desert status, as well as looking at visual representations of these areas.

To begin, I have highlighted the areas that can be seen within a one mile radius as well as those that are located outside the area to show what locations have more access to these supermarkets. In the map, the supermarkets are highlighted with a blue dot. The buffers of a one mile radius are in a shaded green circle, surrounding the supermarkets. This figure aids in visualizing the spread of the supermarkets and the areas that have high congestion of supermarkets, while many blocks appear to have none nearby. Based on the map visualization, many of the supermarkets remain in the center parts of the county, leaving many outer areas with low access.



Section 2. Groups Outside Buffer and in a Food Desert

The following figure details the food deserts in Wake County. The red blocks highlight these areas that are in a distance from accessible healthy food markets. I want to make note that the areas depicted as food desert areas are due to their lack of intersection with the buffers of the supermarkets. Additional areas could be included as this label, but I wanted to choose the ones that were in complete isolation from the buffers.



Section 3. Population Percentages in Food Desert

It is important to extract specific population parameters to get insight into the demographic makeup of the area. To begin, at the time of this analysis, the total population of Wake County is 1,069,079. To get a better understanding of the population, I ran calculations to report on the percentage of residents in the food desert areas. The value that resulted is 9.841%. This value may appear low for the reason that the areas I chose to elect as a food desert area came down to if the block group intersected with the one-mile buffer radius of the supermarkets. Therefore, that decision is a subjective choice one has to make, but because I choose to elect them by this specific criteria, the value may be lower than the real parameter.

Section 4. Population Parameter (Demographic Percentages)

The total population of Wake County is 1,069,079 at the time of this analysis. This value was used to calculate the population percentages. I broke down these percentages into two different categories, the percentage of low-income households (35k or less) in food desert areas, and the percentage of households with no vehicles in the food desert areas. The second category determined the same percentages of low income and no vehicles but for the entirety of Wake County.

Percentage of Low Income Households in Food Desert Areas – The value calculated for this is 21.39%

Percentage of Households with No Vehicles in Food Desert Areas – The value calculated for this is 3.90%

The value for the percentage of households with no vehicle in food desert areas may appear low, but it is important that I note why this may be the case. I determined what groups did and did not fall into a food desert category, and due to the deciding factor being if a group does not touch the buffer, I would consider it in a food desert area. Some areas may have a small overlap and therefore could be taken into account for these calculations, but I chose to select them as a food desert area. That is, these percentages can vary depending on what areas someone may consider to be a food desert or not.

Therefore, the percentage value is only an approximation of the population parameter.

Percentage of Low Income Households in Wake County – The value calculated for this is 18.80%

Percentage of Households with No Vehicles in Wake County – The value calculated for this is 3.967%

Section 5. Determining Where to Place a Supermarket

In the following graphs, I created a visual to show the percentage of low-income households in Wake County to help facilitate the decision of where to put a new supermarket. In addition, I created a similar map for the percentage of households with no vehicle in Wake County.

When comparing both maps, we see that many of the highlighted sections can be seen in the outer corner block groups. Getting a closer look at the first map, we can see that higher percentages of low-income households are in these areas referred to as food deserts. With that in mind, I believe the best area to place a new market could be in any of the outer top corners or the bottom area of the map.

