Introduction

The number of Farmers’ Markets in Boston has increased from 13 to 28 over the past 6 years. SNAP Program at farmers market can benefit low income population. The number of farmers markets licensed to accept SNAP benefits is increasing nationwide. Low-income was defined as an annual income of $22,050 or below determined the Federal Poverty Level for a family of four in 2009. Evaluation on the accessibility of existing farmers market can help promote community nutrition program. The map represents the location of existing farmers markets in Suffolk County. Key datasets include 2010 U.S. Census, which provides information about the location of block groups meet the criterion of low-income, as well as the population number of low-income people who live in each block group. Other key datasets are farmers market and MBTA T-stops.

Methodology

The first part of the geoprocessing model is using the Euclidean Distance tool to calculate the increasing with distance from a MBTA T-Stop. And then reclassify them to normalize the value. (0-200 meters: score 3; 200-500 meters: score 2; 500-1000 meters: score 1; score 0 means no data. The higher score, the easier access)

The second part of the geoprocessing model is to calculate the neighborhood density. Use the Focal Analysis to calculate the number of people living within 500 meters radius of each cell. Then reclassify into the same score category with the MBTA T-Stop Euclidean Distance.

The third part of the geoprocessing model is to use raster calculator combining the two output raster to find the accessibility. The percent influence are separately 40% MBTA T-Stops and 60% Neighborhood density. The neighborhood density weighted larger than MBTA T-Stop, because low-income people might want to save the transportation cost when go to a farmers market.

Evaluation Factors

The map on the left side represents neighborhood density of block groups meet low-income criterion. The higher score means more low-income people. Score of 3 represents excellent, score of 2 means okay, score of 1 means bad, score of 0 is no data. The map on the right side represents the increasing distance from a MBTA T-stop. The higher score means smaller distance to a T-stop. Same as neighborhood density, score of 3 represents excellent, score of 2 means okay, score of 1 means bad, score of 0 is no data.

Results and Discussion

The map represents the results of raster calculator for accessibility of each farmers market in Suffolk County. Red areas get score of 4, which means excellent accessibility of farmers markets for low-income neighborhood. Green areas mean the worst accessibility to farmers markets. Score of 0 means no data on the map. The table shows evaluation score for each farmers market. Among the farmers market that are accepting EBT/SNAP users, nine out of twenty-four (37.5%) farmers market get score of 3 (good) and 4 (excellent). Six out thirty (20%) farmers markets are not accepting EBT/SNAP users. The table also shows two farmers markets-SOWA and Boston University farmers market get score of 3 (good).

Conclusion

In conclusion, less than half (37.5%) of the farmers market that are accepting EBT/SNAP users can be easily accessed by low-income people in Boston. 20% of the current exiting farmers markets are not accepting farmers market. However, the SOWA and Boston University farmers markets are at the location with good accessibility for low-income population. These two farmers markets should consider to carry EBT/SNAP program. The limitation of the study including the old date of census data. In addition, the Euclidean Distance measures the straight line, so the distance might be underestimated.

Bibliography

Source: