# Obesity and Fresh Food Access: New Evidence and Solutions From Geospatial Data

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Background Obesity is generally modeled as a problem associated with socioeconomic (income, education, etc.) and genetic (age, race, etc.) factors. This study shows that, after controlling for these known covariates, (lack of) access to fresh foods has significant additional power to explain obesity rates. Methods I merge data from several sources. This allows me to present results from multivariate regressions to estimate the explanatory power of the usual socioeconomic and genetic factors in modeling obesity rates, and then examine if access to fresh food has any incremental power to explain obesity rates. I then provide some direction on how geospatially-weighted regressions can be used to identify and optimally locate mobile food-pantries to tackle the food access issue as well as low-income issues. Results Overall, I find that while the known socio-economic and genetic covariates have the expected explanatory power, access to fresh food is a separate, incremental, and important factor that explains obesity. The effect of low access to fresh food on obesity is not just evident in racial minorities and poor populations, indicating that this is a pervasive factor that increases obesity. Notably, within Black populations, the effect of fresh food access on obesity is stronger than that of poverty. Conclusion After controlling for the known factors that affect obesity rates, I find an additional explanatory power of access to fresh foods on obesity. Public policies to reduce or eliminate food deserts can not only tackle nutritional deficiency but also impact the growing rates of obesity in the U.S. My estimates show that there is room to improve the optimal locations of mobile-pantry efforts organized by local food banks and the Feed America program.

**Awards Won:**
Missouri University of Science and Technology: Summer Camp scholarships (camp tuition and travel expenses, valued at up to $1,500)