

A Battle of Neighborhoods



Is the Pittsburgh Oakland student campus a food desert? If so, how can it be improved?

Recently, the term “Food Desert” has been used to describe the phenomenon around some areas, including college campuses. People in these food deserts often assert that there is limited access to cheap grocery stores near campus, and this has measurable impacts on things like obesity, nutrition, and overall quality of life; as healthy options are limited only to those who can afford them. For students, already infamous for consuming cheap ramen, this sort of food desert can pose a serious problem.

1. Introduction and Discussion of the Business Objective and Problem

Modern students wish to have access to more food options. According to students, living close to campus often means having trouble accessing healthy, affordable food. If a student can commit some time to cooking, access to an affordable grocery store may significantly increase the quality of a student's life.

"If we did solve the issue of having no grocery store, there would be no need to get a meal plan for a lot of people because they're expensive for low quality food," student's opinion from (ref 1).

In this research I would like to:

- 1) Verify the student's assessment of situation; i.e., Oakland neighborhood of Pittsburgh is a food desert.
- 2) Examine the benefits of opening a grocery store, both on students looking to buy produce and for any potential businesses looking to set up shop.

2. The Data Science Workflow.

HTTP requests would be made to this Foursquare API server using the zip codes of the Oakland city neighborhoods to pull location information (Latitude and Longitude).

The Foursquare API search feature would be enabled to collect the locations of grocery stores nearby the neighborhood. Due to http request limitations the number of places per neighborhood parameter would reasonably be set to 100 and the radius parameter would be set to 800. We would limit the types of stores in output to concentrate attention on particular store types.

In the same time unsupervised machine learning algorithm K-mean clustering would be applied to form the clusters of two categories of dormitories (Dormitories from Pittsburgh University and Carnegie-Mellon University).

Using these two clusters will determine if the stores we are interested in are in reasonable walking distances. Accessible walking distance is determined by reference (2).

Considering the number of students in Pitt and Carnegie-Mellon and average student spending on vegetables per week (3) we can estimate total sales volume for this "new" store and determine if such an enterprise makes sense.

References.

- 1) (Publication in Pittsburgh Newspaper, August 29, 2018)<https://www.pghcitypaper.com/pittsburgh/food-deserts-oakland-and-downtown-make-healthy-eating-a-challenge-for-pittsburgh-students/Content?oid=10300727>
- 2) An Examination of College Students' Produce Consumption and Purchasing Behavior: A Case Study in California Walker, Bernadette Marie; McGarry Wolf, Marianne; Schroeter, Christiane Journal of Food Distribution Research, 40, 1 2009-03 Page range: 180-186

- 3) Walking Distance by Trip Purpose and Population Subgroups. Yong Yang, PhD and Ana V. Diez-Roux, PhD, MD Am J Prev. Med. 2012 Jul; 43(1): 11–19.