Food access is a chronic problem in sub-Saharan African cities. The food desert concept in a Western context attributes poor food access to lack of proximity to supermarkets and low income (USDA, 2019). It is unclear that the food desert concept is relevant for African cities, where food systems are not entirely based on large commercial retailers as in the developed world (Battersby, 2019). Using a sample of low-income households in Accra, Ghana we find that proximity to supermarkets does not improve food security— and income is not correlated with food access but measures of wealth, such as assets, do predict food access.

Research questions

1. What does the spatial distribution of food security in poor neighborhoods in Accra look like?
2. Is proximity to supermarkets associated with better food access? Does wealth (including assets- a common proxy for wealth in low-income settings) improve food access? Which of these is more closely correlated with food access?

Methods

We plot a measure of food access in Accra using the Food Consumption Score (FCS) in poor neighborhoods using ArcGIS
a. The correlation between two economic measures (poverty threshold and asset index) and food metrics (FCS and Household Food Insecurity Access Score (HFIAS))
b. We examine the correlation between proximity (distance between household and nearest supermarket) and food access (using the FCS and HFIAS)
c. We use the Pearson’s correlation (r) because it is best for measuring the association between variables of interest and it is based on covariance.

Analysis

1. Food security in poor neighborhoods in Accra
   FCS in Accra
   
   FCS as shown in the map above measures aggregate diversity and frequency of food groups over the previous 7 days.
   Threshold: 0-21: Poor; 21.5-35: Borderline; >35: Acceptable
   Households with darker color have high FCS, which means, they have good dietary diversity. The larger the FCS, the better the household’s food access
   
   HFIAS measures severity of difficulty in accessing food or cutting back on quality food because of lack of resources. Its about the frequency of occurrence of these severities. Ranges from 0-27.
   Households with small HFIAS have experienced less hunger and are more food secure than those with larger HFIAS. The lesser the HFIAS, the better the household’s food access

Discussion and conclusion

• Proximity to supermarkets is not a good proxy for food access- largely because poorer HH are not able to utilize them.
• Assets better correlate with HFIAS (food access and coping) and poverty threshold better correlates with FCS (which is roughly equivalent with dietary diversity).
• Income (poverty threshold) alone does not better determine food security, but wealth (income and assets) do- suggesting that in very low income settings, assets play a larger role in food security than in the developed world.
• Policy that supports supermarket development in African cities is not improving food access for the poorest households.

References