Hennepin County
SNAP Penetration Analysis

Group Watermelon

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Introduction

Gauge monthly SNAP penetration rate by tract and by race.

Hard to keep track of lower level eligibility information

GOAL

SOLUTION

CHALLENGE

- Data cleaning and adjustment using different external data sources* for **penetration calculation**.

- Interactive **dashboard** to map penetration difference geographically and demographically.

- Statistical analysis to provide **insights** of penetration.

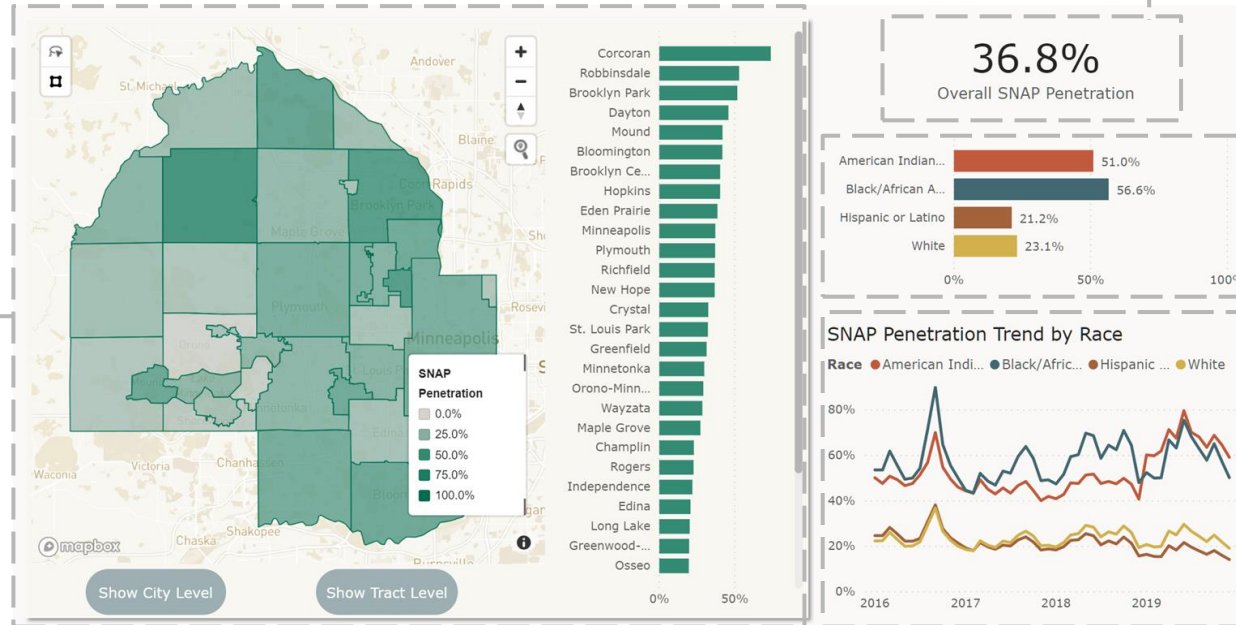- Practical **recommendations** for developing strategies.

*External data source
- ❏ American Community Survey (ACS5 & ACS1)
- ❏ Basic Monthly Current Population Survey (CPS)
- ❏ SNAP Retailer Locator data

Understand SNAP penetration from different perspectives

Main Performance Indicator: SNAP Penetration
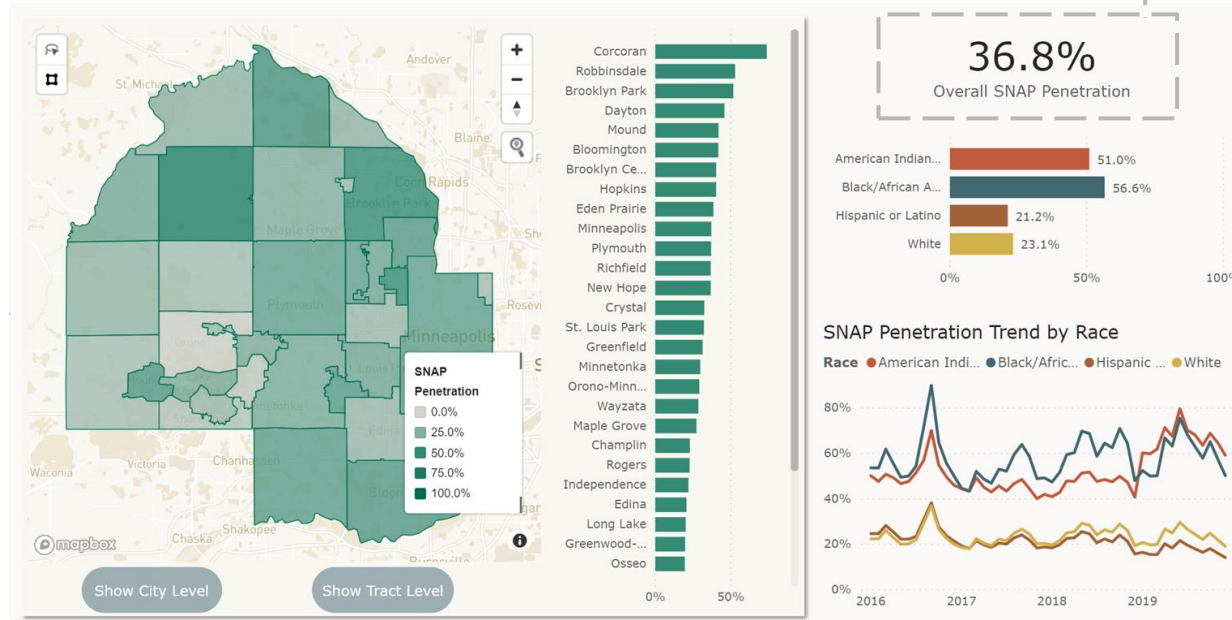
Geographical Breakdown: by Cities and Tracts

Demographic Breakdown: by Race

Time Series to monthly performance

Calculating Penetration Rate Accurately is the Key

Main Performance Indicator: SNAP Penetration

36.8%
Overall SNAP Penetration

Race	Penetration
American Indian...	51.0%
Black/African A...	56.6%
Hispanic or Latino	21.2%
White	23.1%

SNAP Penetration by City (0% – 50%+):
Corcoran, Robbinsdale, Brooklyn Park, Dayton, Mound, Bloomington, Brooklyn Ce..., Hopkins, Eden Prairie, Minneapolis, Plymouth, Richfield, New Hope, Crystal, St. Louis Park, Greenfield, Minnetonka, Orono-Minn..., Wayzata, Maple Grove, Champlin, Rogers, Independence, Edina, Long Lake, Greenwood-..., Osseo

SNAP Penetration (map legend):
- 0.0%
- 25.0%
- 50.0%
- 75.0%
- 100.0%

Show City Level | Show Tract Level

SNAP Penetration Trend by Race

Race ● American Indi... ● Black/Afric... ● Hispanic ... ● White

(2016, 2017, 2018, 2019)

Methodology: Estimate Eligible People Accurately

Data Provided by Client

$$\text{Penetration Rate} = \frac{\text{Registered People}}{\text{Eligible People}}$$

Estimated by External Data

Challenges:
1. Complexity in SNAP eligibility criteria
2. No data source with all dimensions matching the registered people data (especially the monthly time level)

Assumptions:
1. 125% of poverty level approximates eligibility well
2. Differences between time windows apply to areas and races equally (explained later)

Leverage Multiple Data Sources to Estimation Eligible People Accurately

Starting Point

ACS5 Data, Population under Poverty Line by Tract and Race

Criteria Adj.

Adjust to Population under 125% of Poverty Line, closer to actual criteria
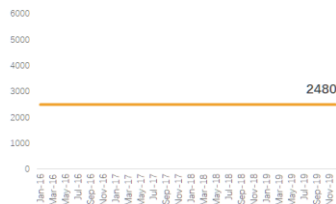
Time Series Adj.

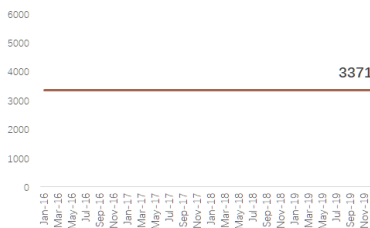Incorporate Changes in Population and Income Over Time

Goal

A **Realistic** Estimation of Eligible People, on **Monthly** Level
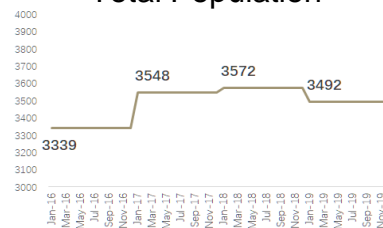
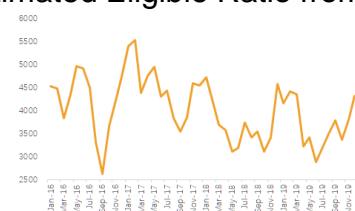Example: Tract 104800, Black/African American

Starting Point

2480

Adjust to 125% Poverty Line

3371

Adjust by Yearly Change in Total Population

3548   3572
        3492
3339

Adjust by Monthly Change in Estimated Eligible Ratio from CPS

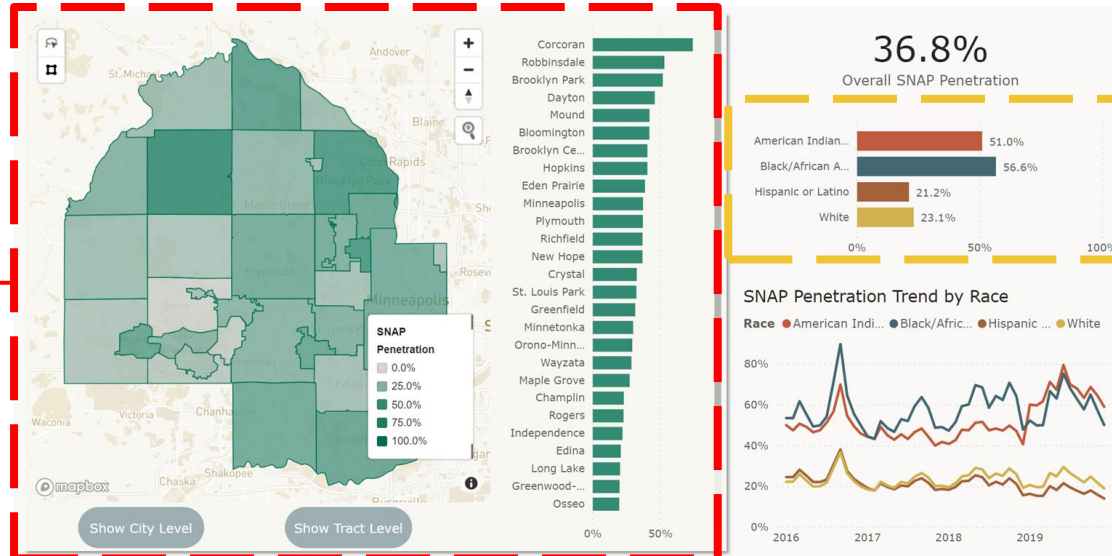Data Source: ACS5   ACS5   ACS1   CPS
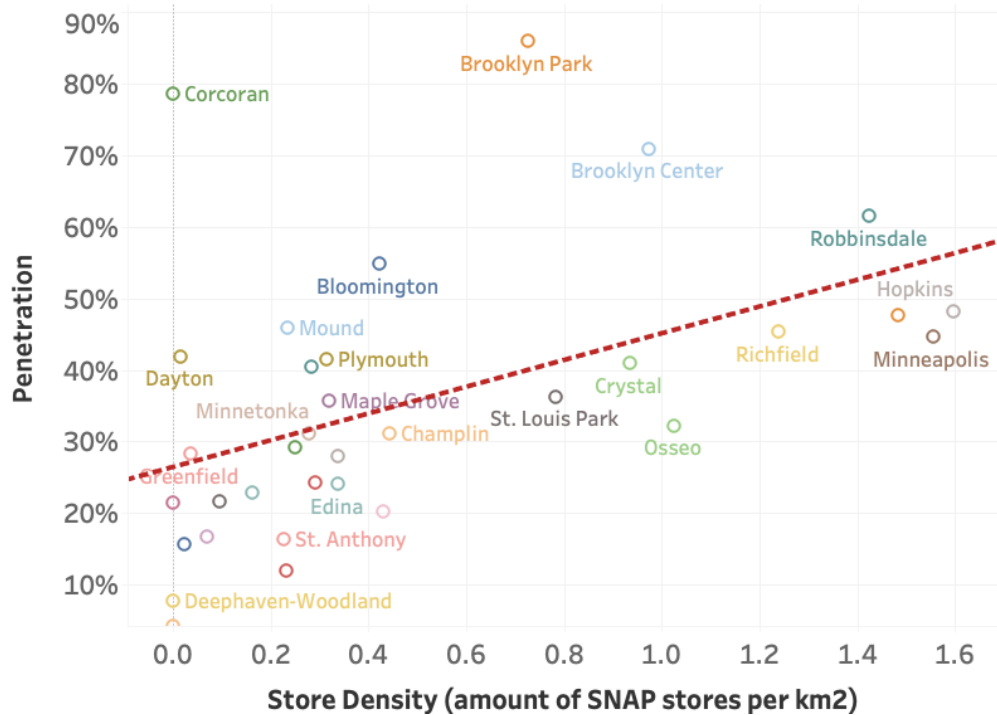
Penetration Varies in Different Areas. Why?

More store access, higher penetration?

Different penetration in different race groups?

Higher Store Density, Higher Penetration

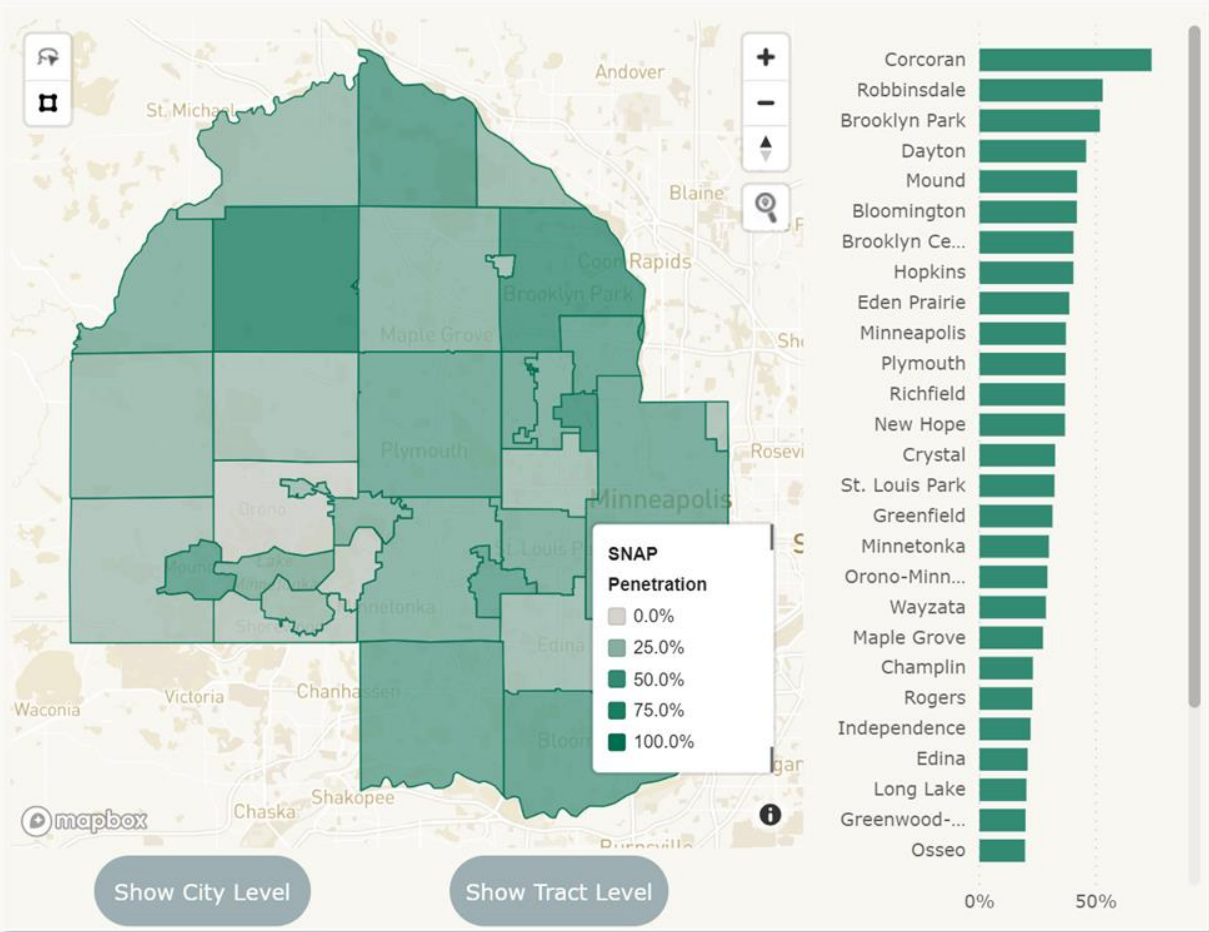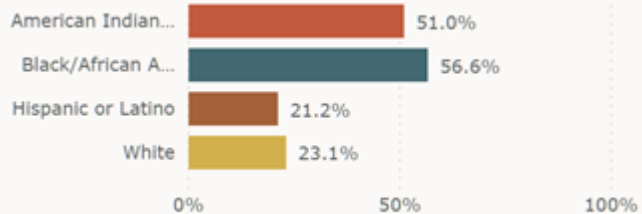Positive association highly likely exists.

SNAP Store Density

Penetration

Store Density = SNAP Store Number / Area of The City (km2)

Intra – Race SNAP Penetration Comparison

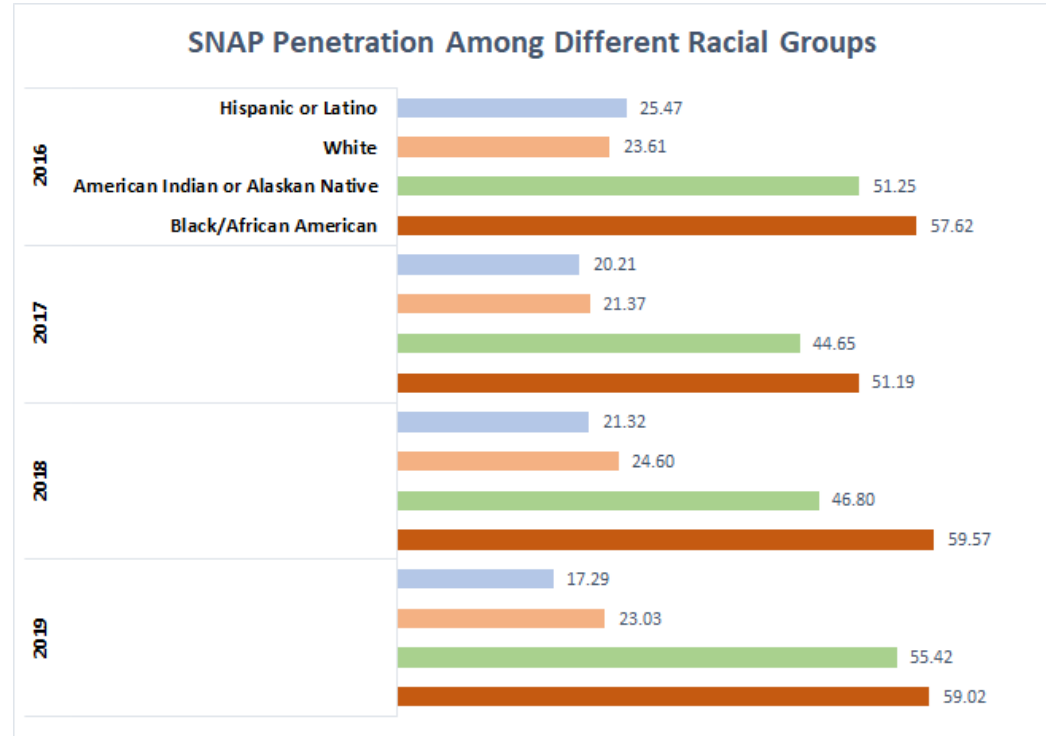African American have the highest SNAP penetration while Hispanic & Latino have the lowest penetration

- Previously, as per USDA survey, penetration in SNAP program was higher in certain groups like Hispanic & Latino and white which has been declined in recent years

- Yearly as well as monthly penetration drop in SNAP penetration for these groups might be suggestive of some underlying phenomenon

SNAP Penetration Among Different Racial Groups

Year	Group	Value
2016	Hispanic or Latino	25.47
2016	White	23.61
2016	American Indian or Alaskan Native	51.25
2016	Black/African American	57.62
2017	Hispanic or Latino	20.21
2017	White	21.37
2017	American Indian or Alaskan Native	44.65
2017	Black/African American	51.19
2018	Hispanic or Latino	21.32
2018	White	24.60
2018	American Indian or Alaskan Native	46.80
2018	Black/African American	59.57
2019	Hispanic or Latino	17.29
2019	White	23.03
2019	American Indian or Alaskan Native	55.42
2019	Black/African American	59.02

Recommendations & Way Forward

- Conduct surveys and experiments to investigate reasons of
  - Low penetration in some racial groups while also explore the reasons of current low penetration in historically high SNAP penetrated segments

- Explore policies for getting more stores to adopt SNAP in low density areas
  - Further research to confirm the causality between store density and penetration.

- To Conduct further analysis across different demographics

Thank You
Q&A