

Conquering Hunger One Meal at a Time

**Improving the Food Bank of Northern
Indiana's Mobile Pantries**

**Doris Kuo
Dijia Tang
Charlie Trense
Robin Ye
Ye Yuan**

Disparity at Mobile Pantries is Problematic



Agenda

1

Problem

2

Analysis

3

Recommendation

4

Next Steps

Problem

Problem – Imbalanced Food Distribution

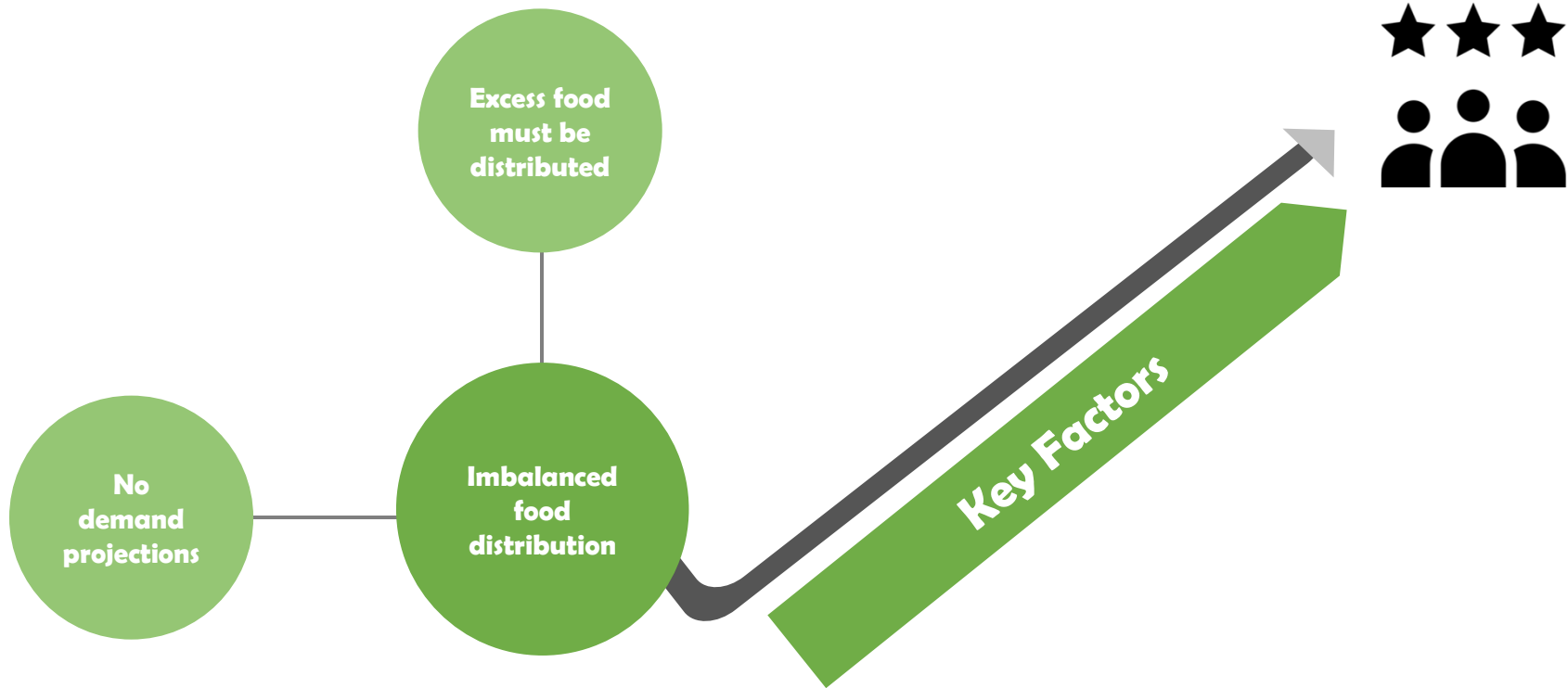
Someone gets a different amount of food depending on when they show up to the mobile pantry

Individuals Per Mobile vs. *Pounds Per Individual*

Source: Food Bank of Northern Indiana (2016-2019)



Problem



Analysis

What are the Objectives of Mobile Food Pantries?



Fair distribution



Reduction of waste & costs



**How do we know how
much food to prepare?**

By Determining Demand



Find why people come



How can we predict demand?

Original Hypothesis



Population (by County)



Weather



Predictive Variables...

SIGNIFICANCE



Population



Rural Area



Month



Humidity



Temperature



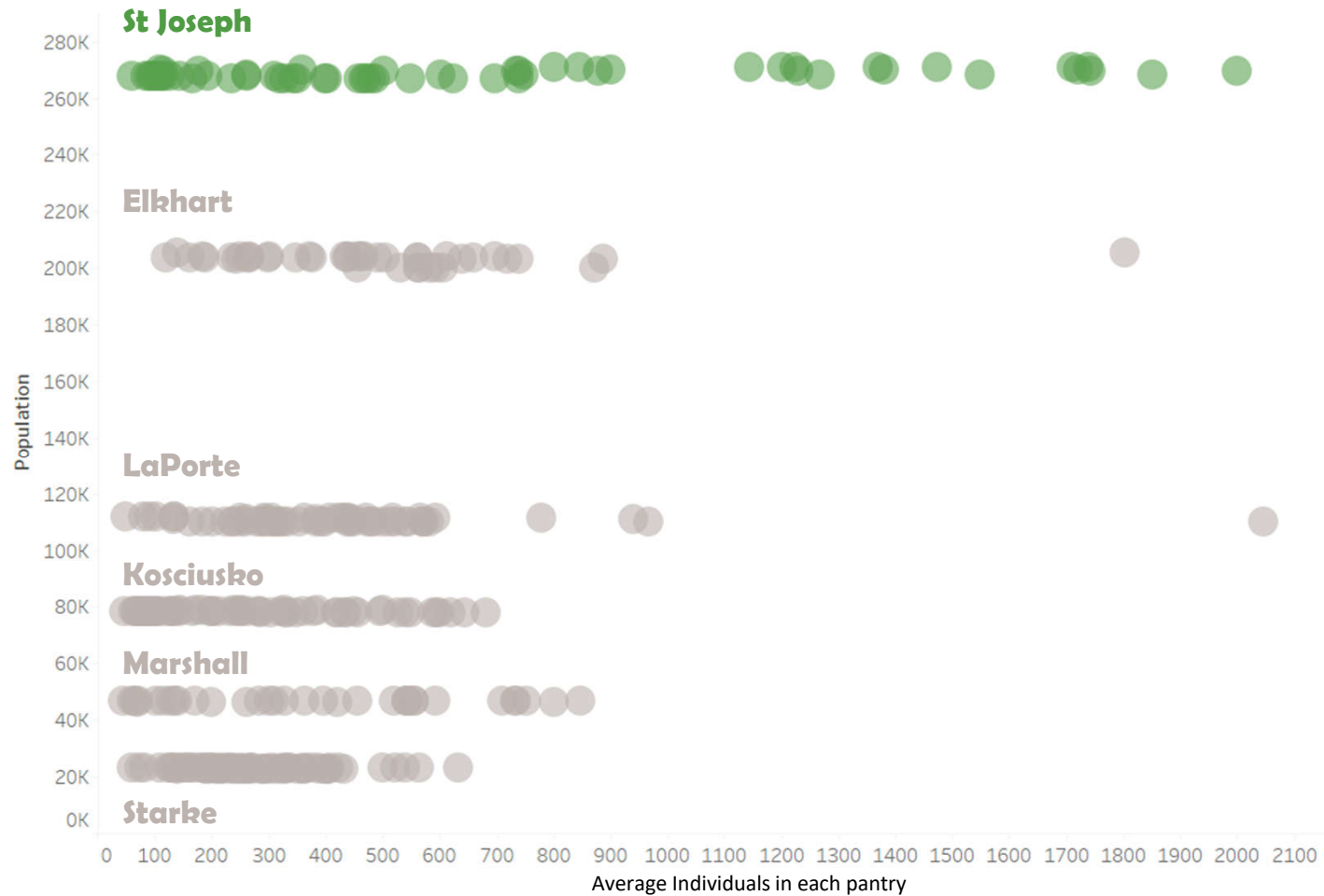
Day of Week



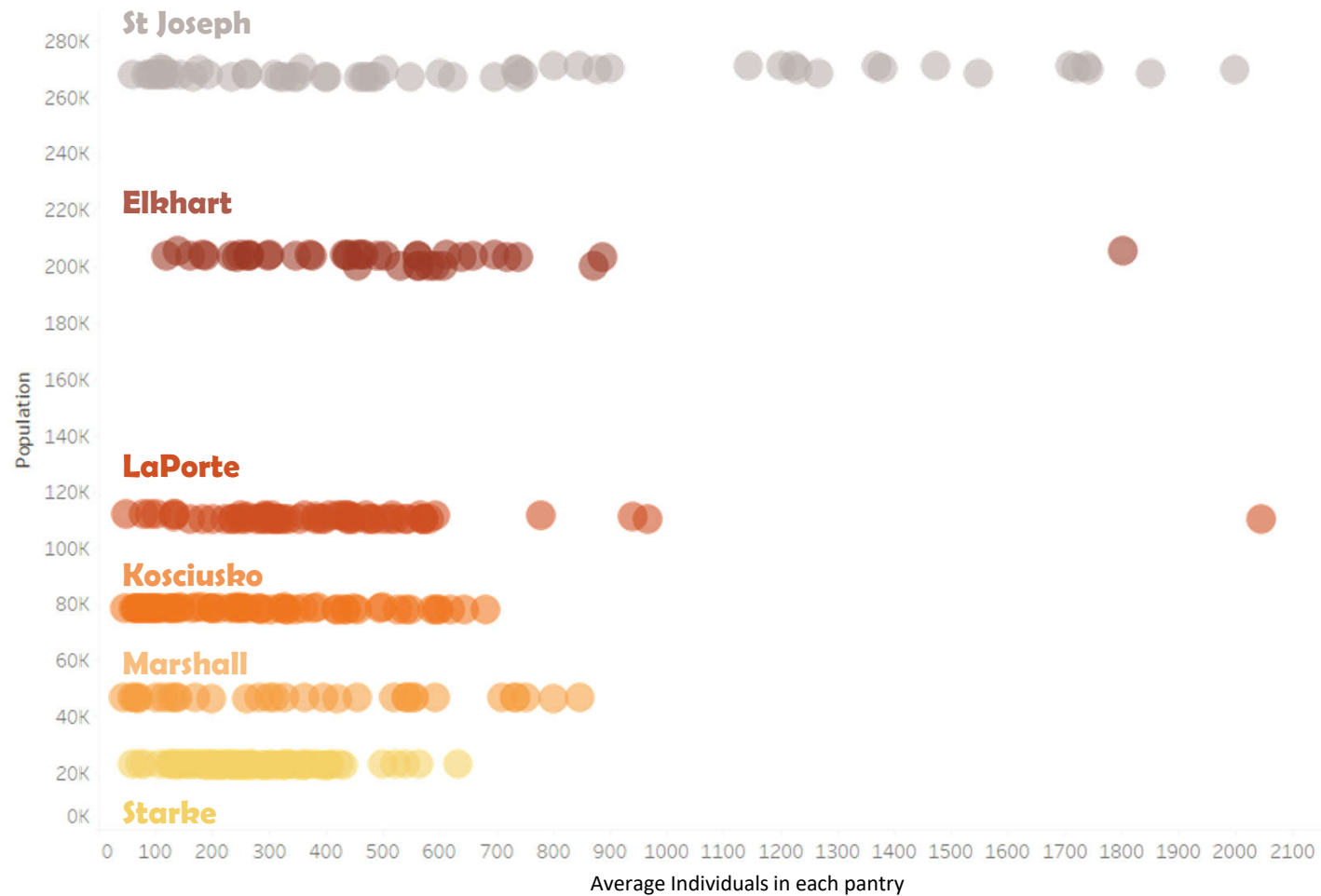
County



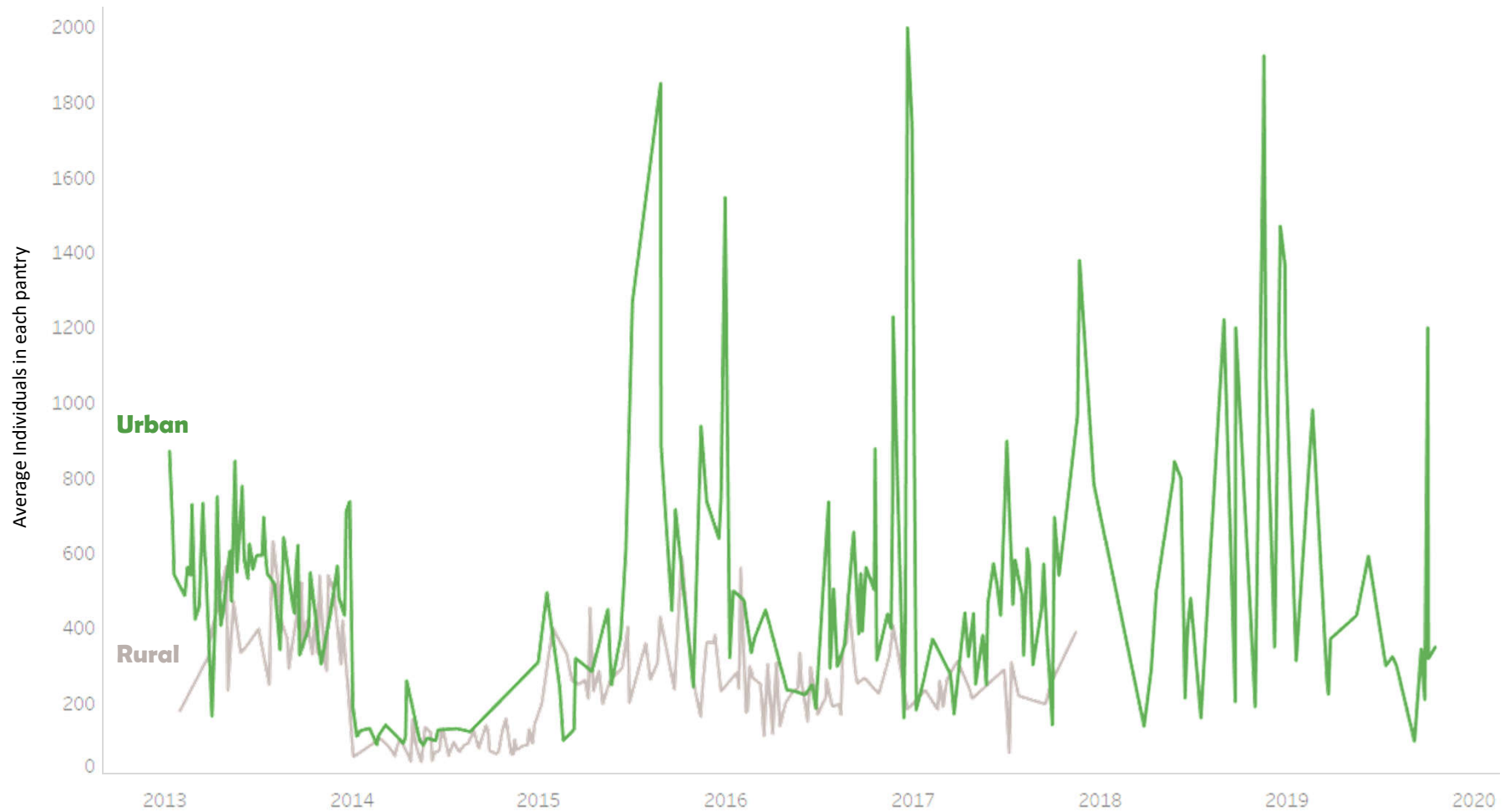
County & Population - Higher demand in St Joseph



County & Population - Similar demand in other counties



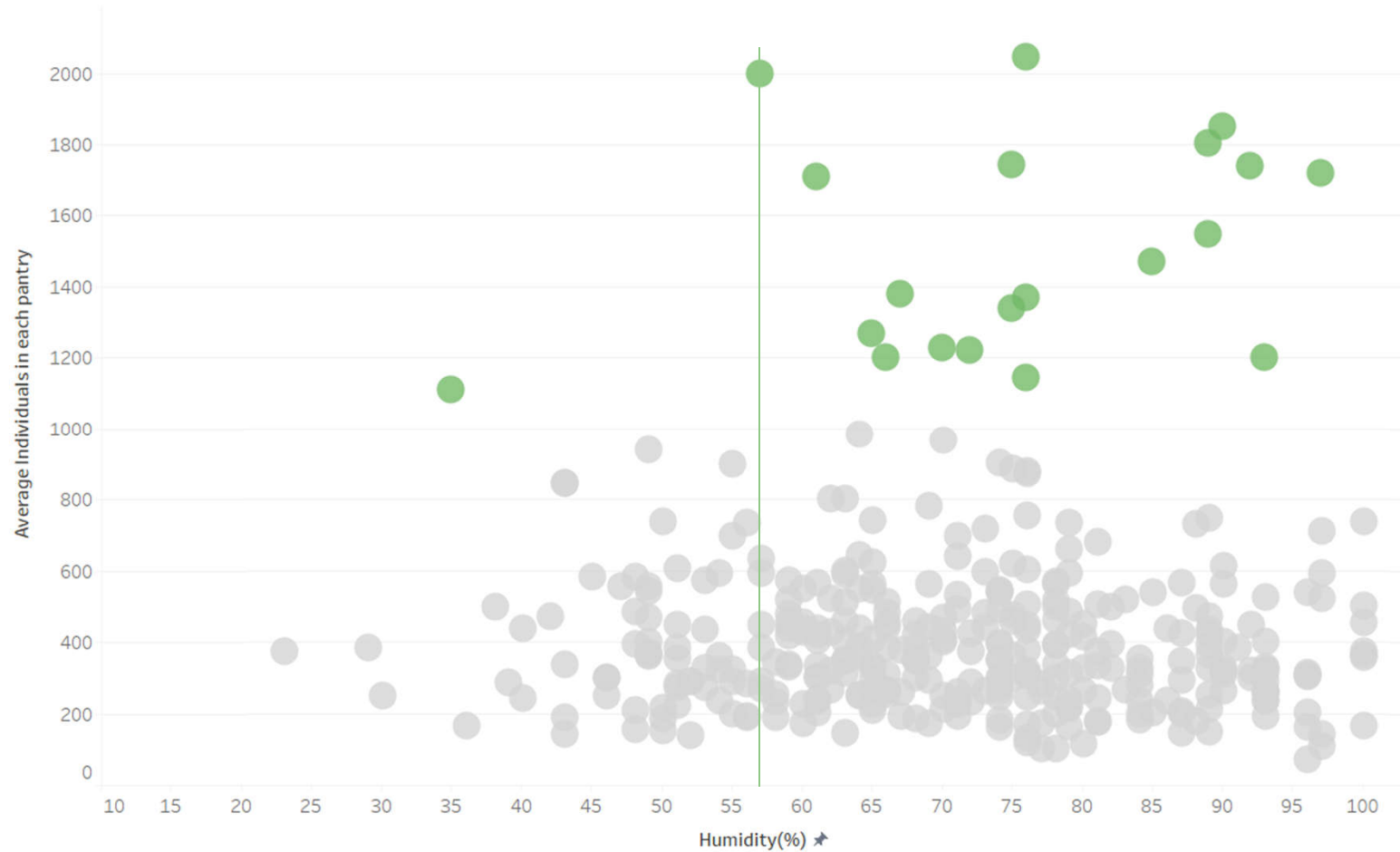
Rural Area - More shoppers reside in urban areas



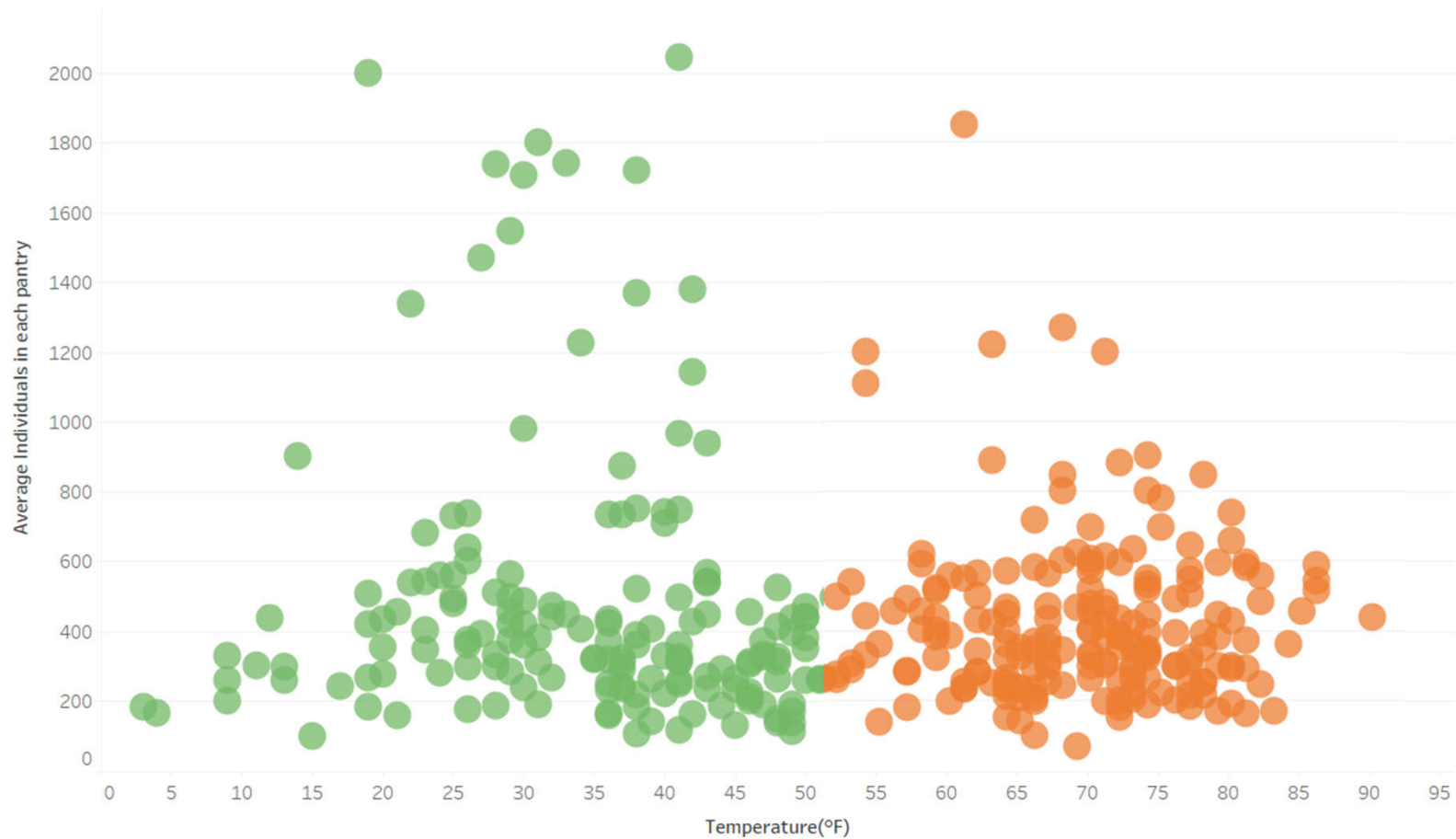
Month - Demand is highest at the end of the year



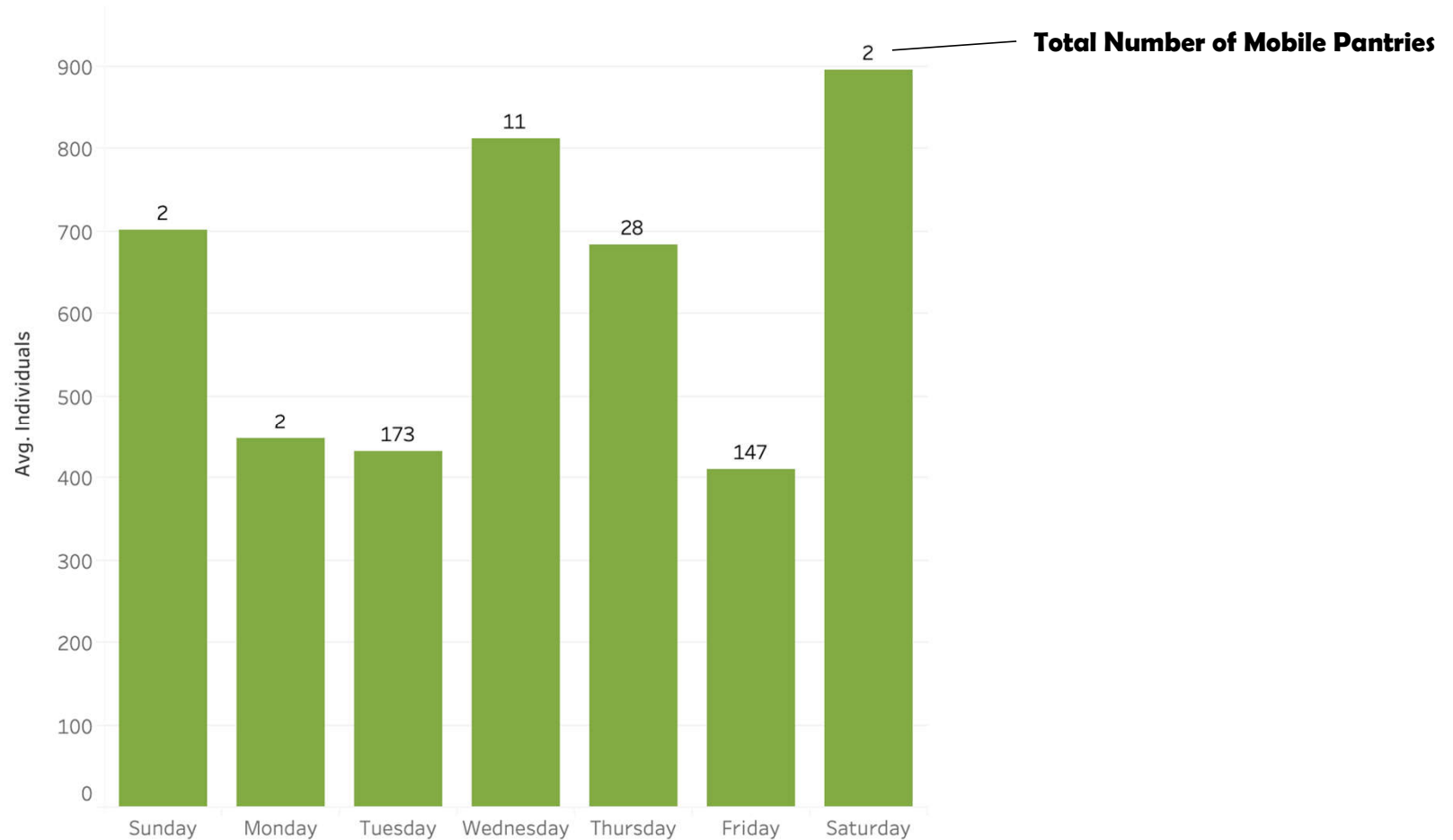
Weather – 60% up humidity is more likely to drive more individuals



Weather — 15-45°F is more likely to have extreme large individual size



Day of Week – less turnout on Monday, Tuesday, and Friday



Recommendation

Recommendation 1: Through improved data collection, FBNI can track factors to plan for future mobile food pantries

**Mobile
Pantry
Planner**



Population



Rural Area



Month



Humidity



Temperature



Day of Week



County

Recommendation 2: Use Dashboard Estimator to predict the potential resources and food needed

Mobile Pantry Demand Estimator



Mendoza



Estimated
Demands

650-900

SuperLarge



Required
Volunteers

15 ~ 20



Estimated Costs

802.9

\$ USD

Rural Area

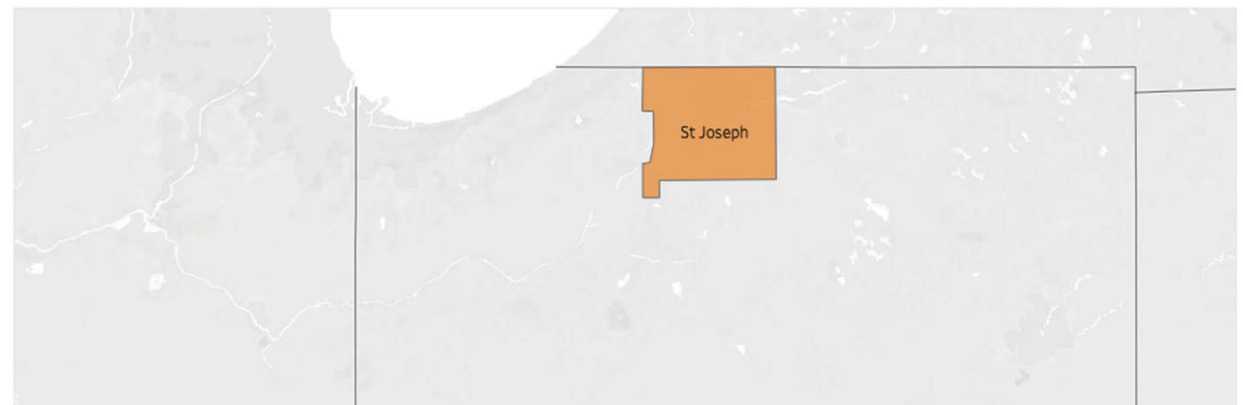
☒ No
☐ Yes

County

St Joseph

Month

Jan



Thank you.