

Morgan Stanley
Code to Give

Food Foresight (Team)

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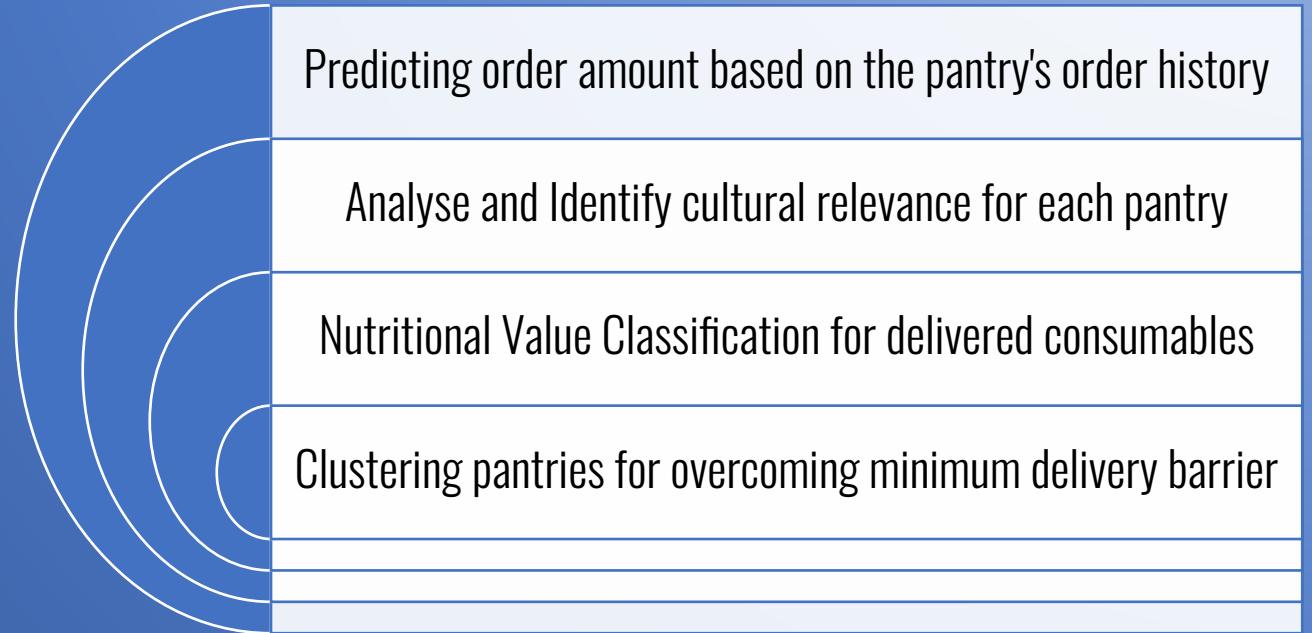
Challenge

- Equitable Food Distribution
- Consistent Delivery to Food Partners
- Culturally-Centric and Quality Food For Pantries
- Minimum Delivery Barrier



Proposed Solution: Forecasting & Statistical Model

The organization has faced significant hurdles when it comes to serving rural partners. With a hefty 6,000-pound minimum order requirement, many partners in remote areas struggle to meet demand and often miss out on much-needed deliveries. This can be a major setback for the Food Bank's overarching goal of providing equal access to all partners in terms of quality, quantity and cultural relevance food.



Data Model

Input

Pantry

PantryID	Pantry Name	Address	Pincor	County	Size	Latitude	Longitude	Ethnic Group	Contact
AFCBP776	Feeding GA Families	2514 W Point Ave, Atlanta, G	30337	Fulton	Small	33.6264	-84.473563	Black or African Ameri	(678) 223-3663
AFCBP535	St. Vincent De Paul Societ	2050-C Chamblee Tucker Rd	30341	Dekalb	Medium	33.885684	-84.303371	Native American or Al	(678) 892-6160

Food Orders

OrderId	PantryID	Order Date	Delivery Date	Delivery Time	Quantity	MealID	Items
AFCBO2407	AFCBP776	03-30-2022	04-06-2022	09:00 AM	5713	AFCBM1724	Mayonnaise, C

Items

ItemID	Item	NutritionalValue
ITEM7398	Canned vegetables	High
ITEM7041	Canned fruits	High

Cultural Food

Ethnic Group	Food Preference
Hispanic or Latino	Rice, Canned beans, Canned vegetables, Canned fruits, T
Native American or Alaska Native	Canned fruits, Canned vegetables, Flour, Sugar, Boxed ca

Meal

MealID	Meal
AFCBM39725	Canned beans, rice, spices
AFCBM35338	Canned tuna or chicken, crackers, fruit cups



Top Items

PantryID	Top Items	Nutritional Value Classification	Cultural Relevance	High	Medium	Low	MealID
AFCBP776	Pudding cups, Boxec	SubOptimal	No	2	10	3	AFCBM32302
AFCBP535	Chips, Cereal, Jelly c	Optimal	Yes	7	6	2	AFCBM12061

Cluster

ClusterID	ClusterGroup
AFCBC3001	AFCBP772, AFCBP932, AFCBP265, AFCBP776
AFCBC3794	AFCBP336, AFCBP83, AFCBP193, AFCBP535

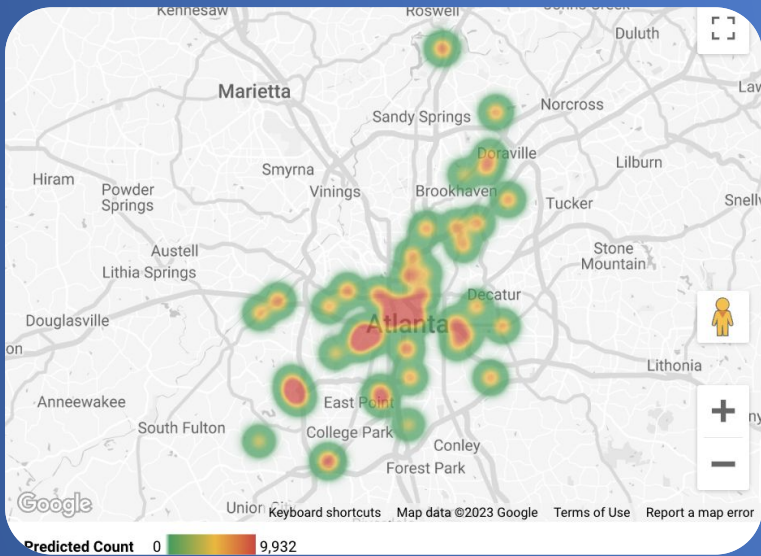
Output

Food Prediction

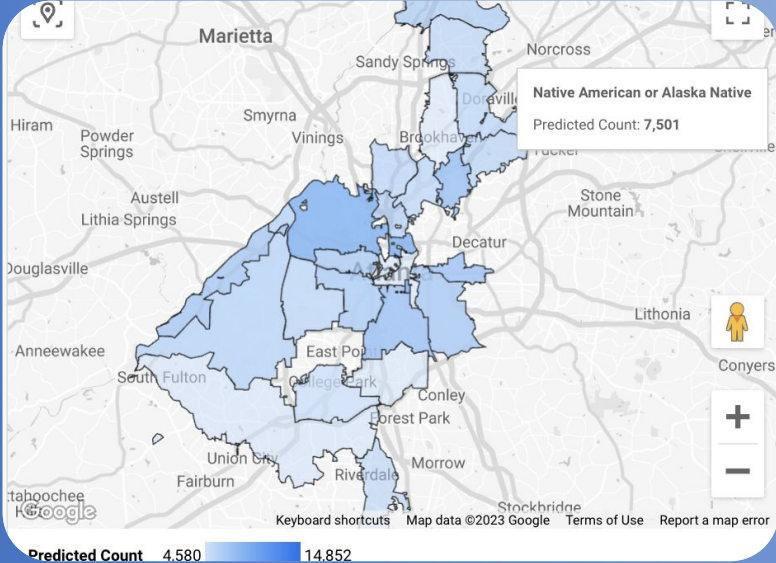
PantryID	Predicted Count
AFCBP108	4737
AFCBP132	7181

Our Model Predicts

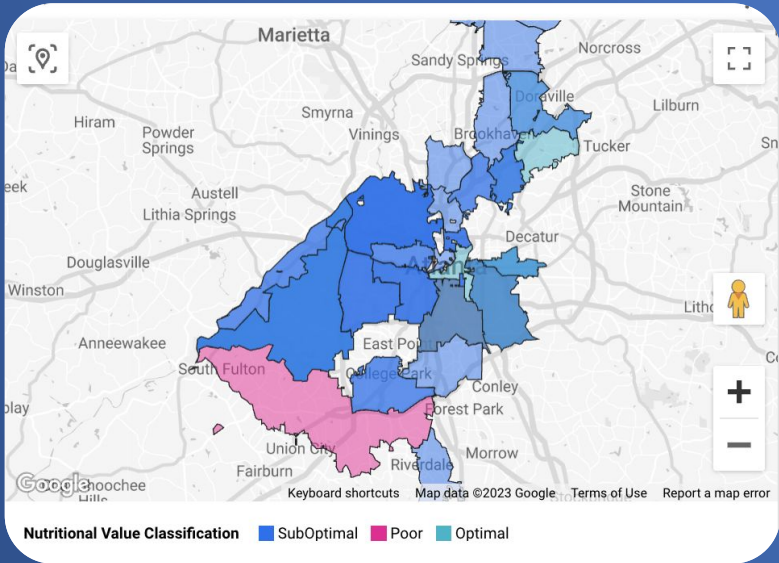
Food Prediction for 30 days for Pantry



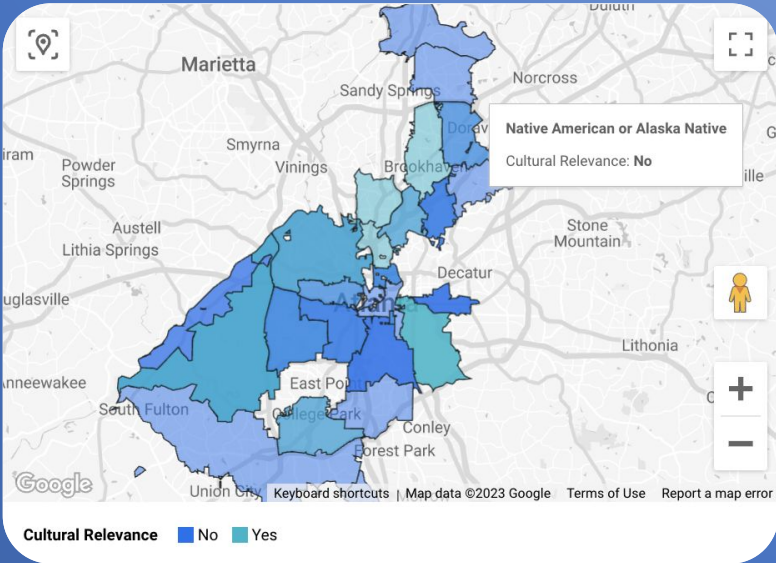
Food Prediction for 30 days for Pincode



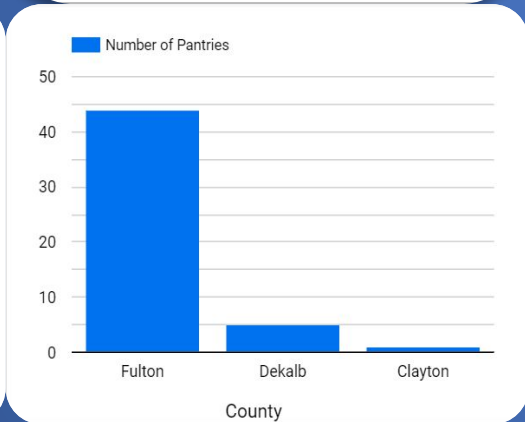
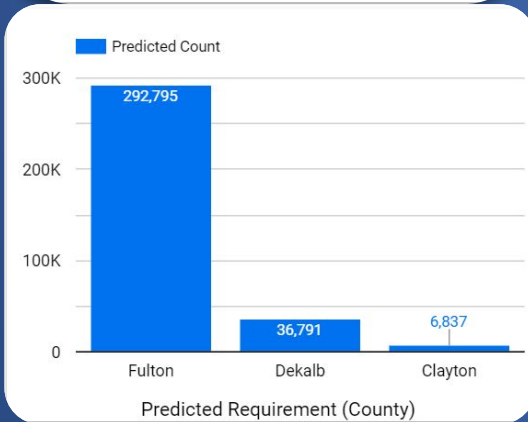
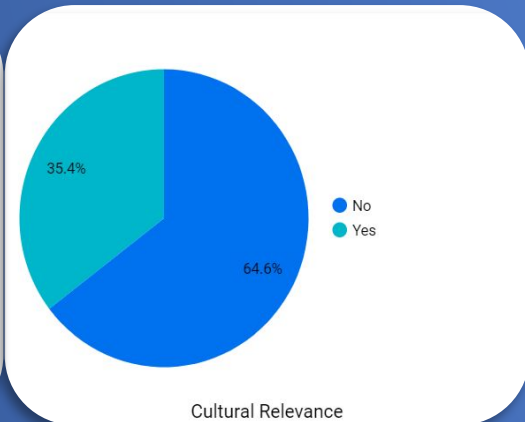
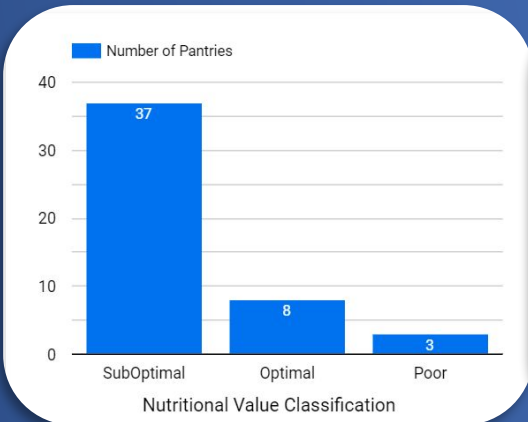
Nutritional Value Classification



Cultural Food Relevance



Key Performance Indicators



Pantry Name

Pantry Name	Address	Predicted Count	Contact	Size	Ethnic Group
1. Wheat Street Baptist Church Fo...	18 William Holmes Borders, Sr. Drive, Atlanta, GA - 30312	4737	(404) 659-4328	Small	Native American or Alaska Native, Hispanic or ...
2. Toco Hills Community Alliance	1790 LaVista Road NE, Atlanta, GA - 30329	7137	(404) 325-0677	Medium	Native American or Alaska Native, Black or Afri...
3. The Episcopal Church of Saint ...	3110 Ashford Dunwoody Road, Atlanta, GA - 30319	4580	(404) 261-4292	Small	Black or African American, Native American or ...
4. Suthers Center for Christian Out...	3550 Broad Street Suite F, Atlanta, GA - 30341	4872	(770) 455-3358	Small	Hispanic or Latino
5. St. Vincent De Paul Society	2050-C Chamblee Tucker Rd, Atlanta, GA - 30341	7268	(678) 892-6160	Medium	Native American or Alaska Native
6. Southwest Ecumenical Emerge...	1040 Ralph David Abernathy Blvd, SW, Atlanta, GA - 30310	7742	(404) 756-1699	Medium	Black or African American, Hispanic or Latino, ...
7. Shallowford Presbyterian Churc...	2375 Shallowford Road NE, Atlanta, GA - 30345	7501	(404) 321-1844	Medium	Native American or Alaska Native
8. Sconiers Homeless Preventive ...	848 Pegg Rd, Atlanta, GA - 30274	6837	(404) 454-3554	Medium	Hispanic or Latino
9. Salvation Army Atlanta Food Pa...	2090 N. Druid Hills Road NE, Atlanta, GA - 30329	7191	(404) 486-2800	Medium	Native American or Alaska Native, Black or Afri...

1 - 50 / 50

Pantry Name	Nutritional Value Classification	Cultural Relevance	Top Items
1. Wheat Street Baptist C...	Optimal	No	Crackers, Cooking oil, Hot cocoa mix, Flour, Granola bars, Rice, Jelly or jam, Fruit cups, Canned beans, Mayonnaise, Boxed stuffing mi...
2. Toco Hills Community ...	SubOptimal	No	Canned fruits, Pasta, Flour, Mustard, Condensed milk, Crackers, Nuts, Vanilla extract, Instant coffee, Canned chili, Canned spaghetti o...
3. The Episcopal Church o...	SubOptimal	Yes	Tomato sauce, Instant coffee, Condiments, Baking powder, Baking soda, Mustard, Mayonnaise, Trail mix, Flour, Tea bags, Sugar, Crac...
4. Suthers Center for Chri...	SubOptimal	No	Canned spaghetti or ravioli, Boxed cake mix, Canned soup, Canned tuna or chicken, Instant coffee, Cereal, Jello cups, Ketchup, Oatm...
5. St. Vincent De Paul Soc...	Optimal	Yes	Chips, Cereal, Jelly or jam, Nuts, Oatmeal, Jello cups, Crackers, Ketchup, Cooking oil, Pancake mix and syrup, Canned soup, Dried frui...
6. Southwest Ecumenical ...	SubOptimal	Yes	Condiments, Cooking oil, Instant mashed potatoes, Evaporated milk, Boxed stuffing mix, Popcorn, Mayonnaise, Oatmeal, Spices, Mus...
7. Shallowford Presbyteri...	Optimal	No	Peanut butter, Evaporated milk, Popcorn, Canned vegetables, Flour, Vinegar, Canned soup, Tea bags, Hot cocoa mix, Granola bars, Va...
8. Sconiers Homeless Pre...	SubOptimal	No	Baking powder, Dried fruit, Ketchup, Chips, Tomato sauce, Vinegar, Macaroni and cheese, Baking soda, Condensed milk, Spices, Can...

1 - 50 / 50

Sources

- Freefood.org : <https://www.freefood.org/c/ga-atlanta>
- Map the Meal Gap Report : <https://map.feedingamerica.org/>
- Google Colab : Statistical Analysis and Dataset Creation using Python
- Statistical Visualization Output : (Google Data Studio)
<https://lookerstudio.google.com/reporting/dc769a39-5ffa-4786-831e-946aa2423747/page/1dpND>

Questions?