Determining the Optimal Location of a New Vegan Restaurant in Houston, TX

Coursera Capstone Report

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Goal: Identify the most suitable location among the Houston City Super Neighborhoods to open a new Vegan Restaurant

- Based on two primary data streams:
  - Demographic data from Houston City's Official Website
  - Popular Venue Categories in each neighborhood from the FourSquare.com Places API

- Target Audience:
  - I am a vegan and am very interested in starting a Vegan restaurant myself
  - Any entrepreneur who wants to start a new restaurant with an unconventional cuisine

	HOLISTIC WELLBEING SEEKERS	FITNESS & LIFESTYLE COMMUNITY	ETHICAL FOODIES
Volume of posts	US: 320k | UK: 89k 🌱😋😍	US: 239k |s UK: 83k 🌱💪😋	US: 125k | UK: 43k 🌱❤️🌍
What drives them	self-love, self-care, wellness, mindfulness, curiosity	self-optimization, weight loss, health	altruism, compassion animal welfare, sustainability
Popular hashtags	#plantbased #vegan #cleaneating #organic #healthyfood #wellness #yummy	#vegan #healthy #fitfam #motivation #healthychoices #weightloss #plantpower	#crueltyfree #nongmo #organic #realfood #natural #animalrights #natural #sustainable

Drivers of Vegan Diet Adoption

Hierarchy of Importance of Drivers of Vegan Diet Adoption

Popularity of Venues:

- Fitness Venues → Exotic Food interests → Specialty Foods (Gluten Free, Organic) → Nature Lovers → Art Lovers → Traditional Food Interests
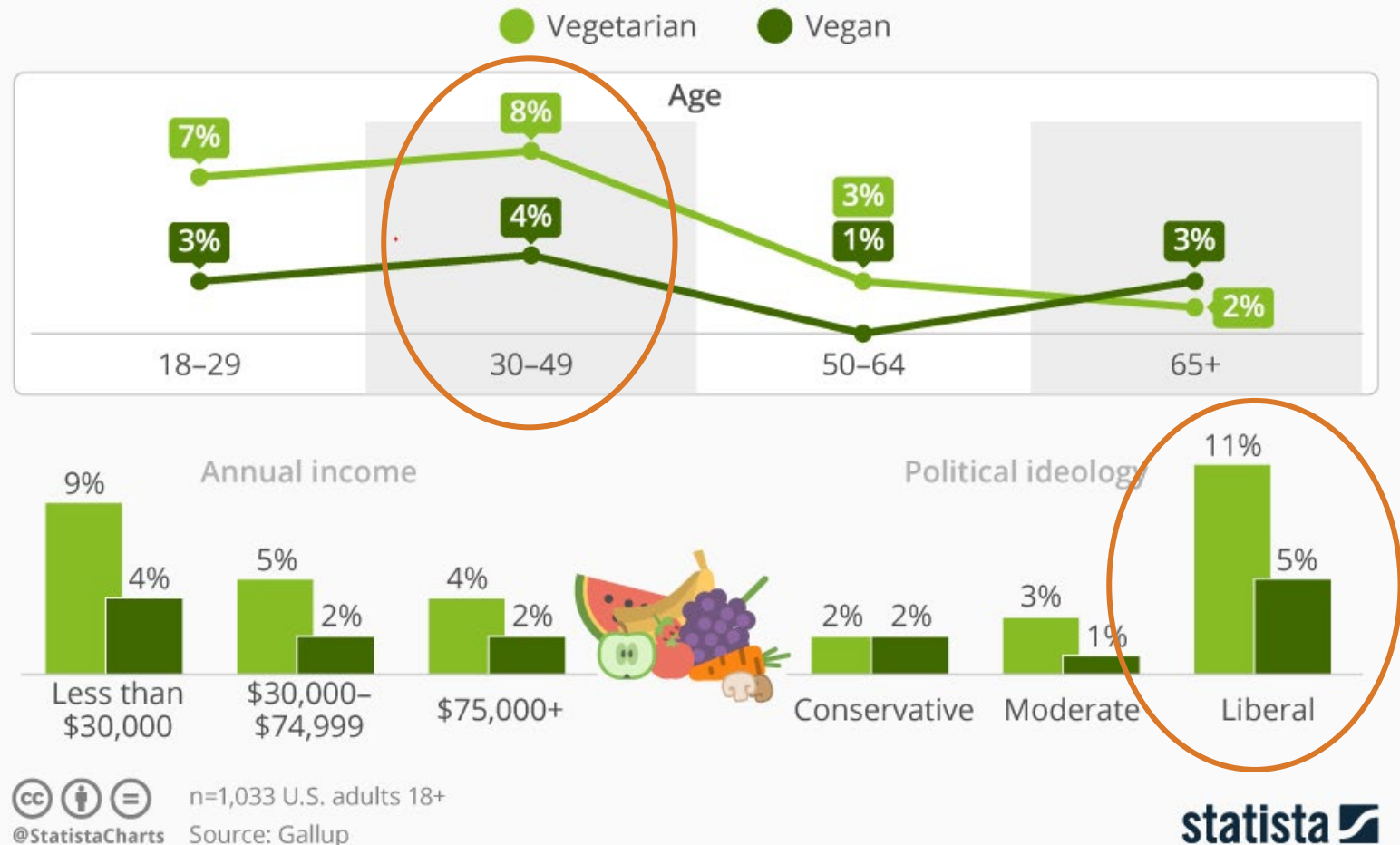
Demographics:

- Liberal → Gen Y → Racially & Ethnically Diverse → Higher Education → Mid-Income

Drivers of Vegan Diet Adoption

- From 2018 Gallup Survey, Courtesy Statista

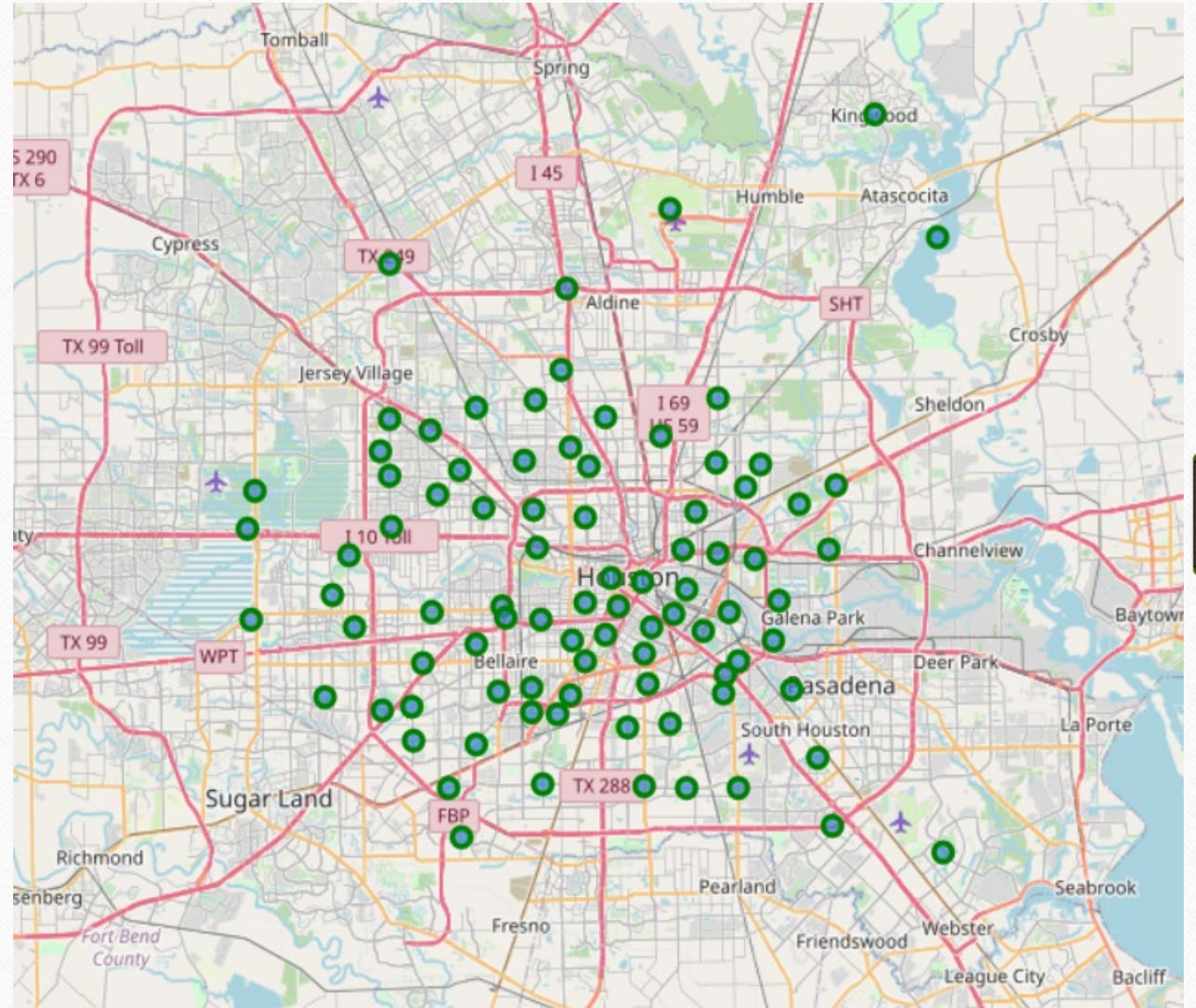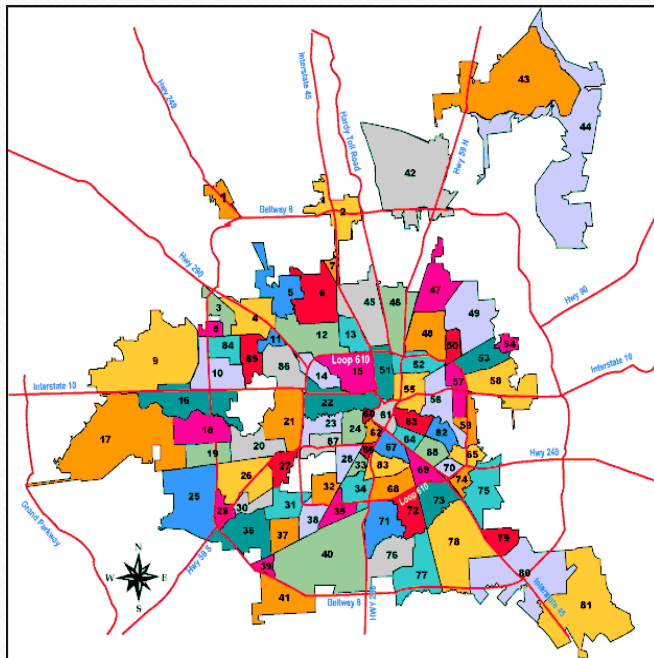Who Are America's Vegans & Vegetarians?

"In terms of eating preferences, do you consider yourself vegan, vegetarian?"

Vegetarian   Vegan

Age

7%   8%   3%   3%
3%   4%   1%   2%

18–29   30–49   50–64   65+

Annual income   Political ideology

9%   5%   4%   2% 2%   3%   11%
4%   2%   2%   1%   5%

Less than $30,000– $75,000+   Conservative Moderate Liberal
$30,000 $74,999

n=1,033 U.S. adults 18+
@StatistaCharts   Source: Gallup

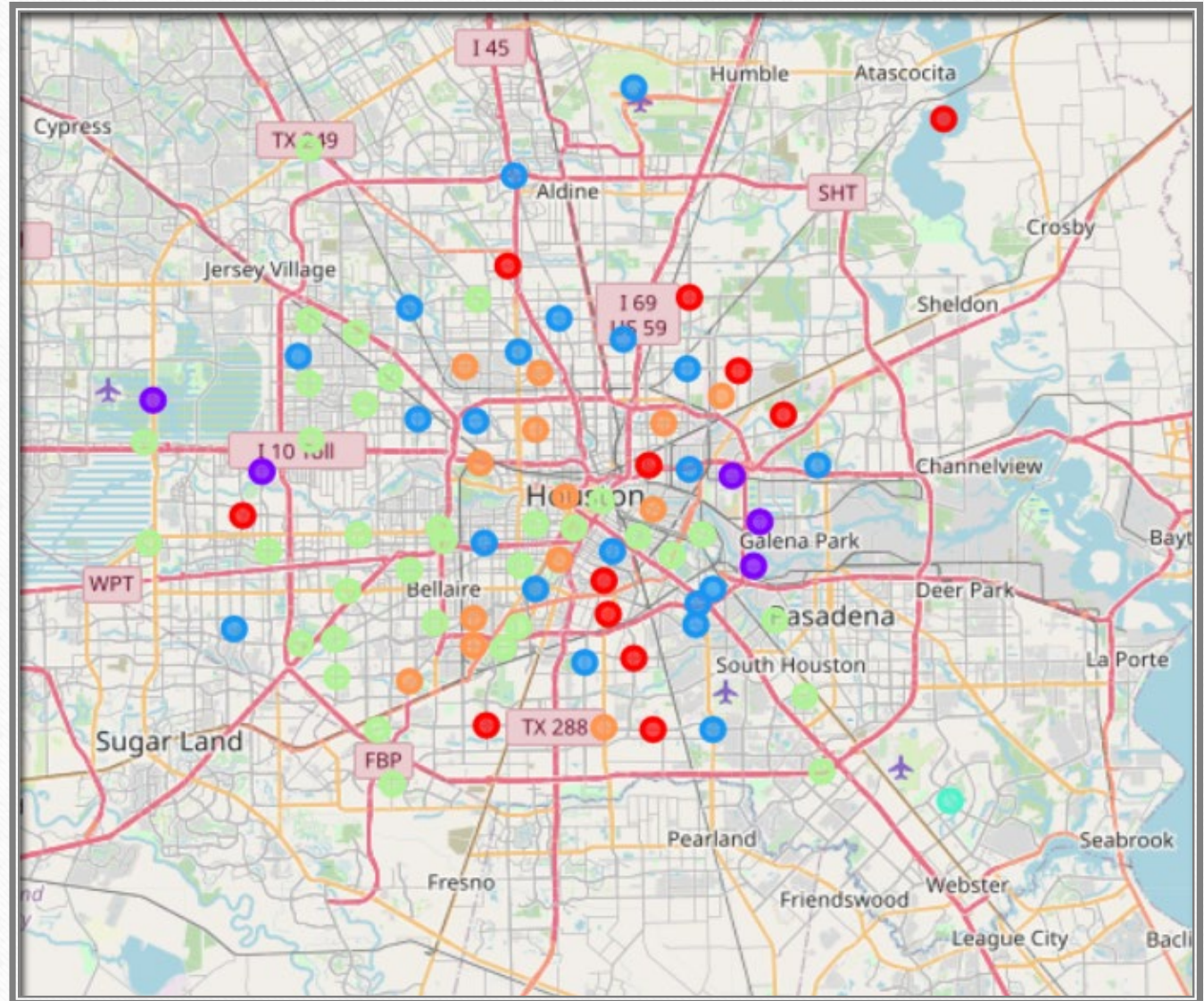statista

Millennials Generation   Liberal Political Leaning

Houston City Super Neighborhoods

Houston Super Neighborhood Clustering

- 6 Clusters based on different venue category popularity.

- K-Means Clustering method used

Results of Best Houston Neighborhood for Vegan Restaurant

- **1st Choice:** Cluster 2, Neighborhood 8: Adicks Park Ten:
  - Venues: Nature, Fitness, Specialty Foods, Art, Regular, Exotic
  - Demog: Liberal, Gen X, Very Diverse, Basic_Edn, Mid_Income, Low_Pop_Density,
- **2nd Choice:** Cluster 2, Neighborhood 15: Memorial :
  - Venues: Nature, Fitness, Art, Regular Restaurants, Exotic Restaurants, Specialty Foods
  - Demog: Liberal, Diverse, High_Edn, High_Income, Boomers, Med_Pop_Density
- **3rd Choice:** Cluster 6, Neighborhood 14 - Greater Heights:
  - Demog: Liberal-Very Diverse-High_Edn, High_Income, Gen X High_Pop_Density
  - Venues - Top : Regular Restaurants, Nature, Exotic, Fitness, Art, Specialty_Foods

Conclusions and Further Analysis

- It is possible to use this analysis not only to determine the optimum location of a Vegan Restaurant in Houston, but the analysis can easily be tweaked to apply to any other specialized cuisine restaurant.

- I have applied the K-means clustering to only the Venue data in this analysis.

- However, since K-modes clustering will be able to also handle mixed Categorical Values& Numerical values.

- This will enhance the results further.

Thank you Very much!