

Food Uniqueness and Quality

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Introduction/Business Problem

- ▶ Uniqueness and quality of food can vary geographically
 - ▶ cities have a plethora of unique tastes
 - ▶ rural areas often have fewer options
- ▶ Should be taken into consideration by chefs and restaurateurs
 - ▶ Should a chef open a restaurant in a city, or a small town
 - ▶ Could there be demand for my food here

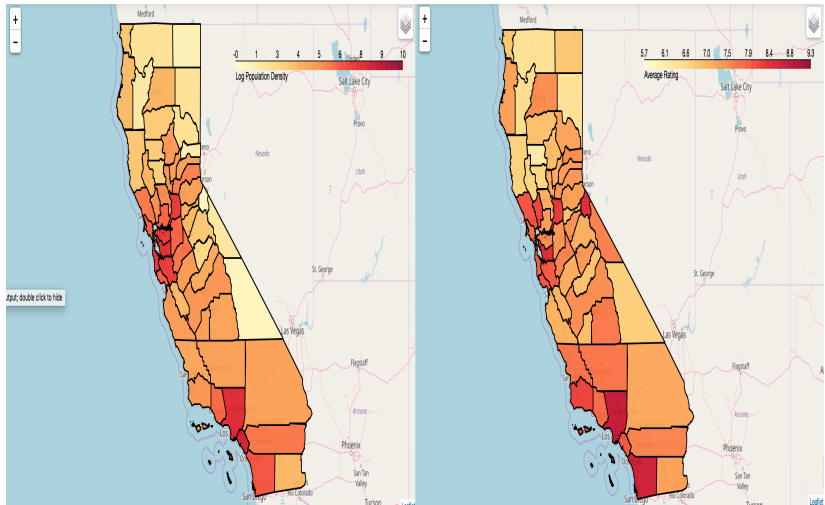
Data

- ▶ Demographic data on all counties in California
 - ▶ Median income, population density, voter registration data
- ▶ Restaurant data from the county seat of each county
 - ▶ Price, rating, type, location
- ▶ New metric: Uniqueness
 - ▶ Measures how unique a given county seat's cuisine is, relative to other county seats

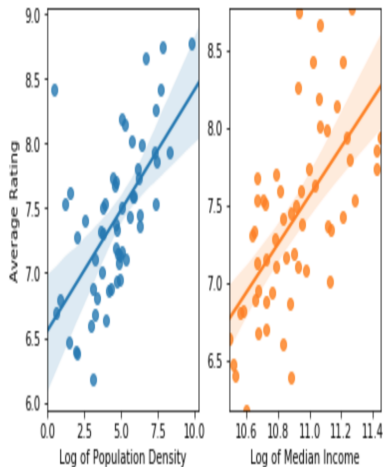
Exploration/Methodology

- ▶ Look at how the variables of interest vary by county
- ▶ Use linear regression to quantify relationships between average rating, and demographic factors
- ▶ Use economic and demographic theory to put the data and trends into context

Results: Geographic Trends



Results: Average Rating



OLS Regression Results

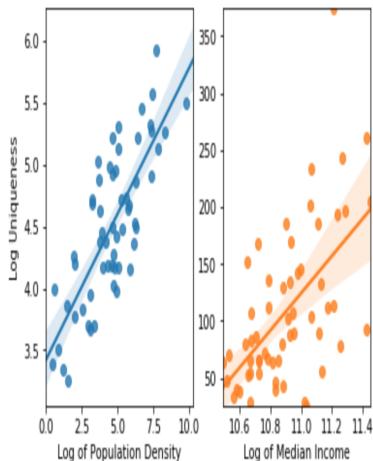
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=====
Dep. Variable:          y    R-squared:                0.550
Model:                  OLS    Adj. R-squared:           0.549
Method:                 Least Squares    F-statistic:      1391.
Date:                   Thu, 08 Nov 2018    Prob (F-statistic): 0.00
Time:                   16:05:12    Log-Likelihood:    -1000.5
No. Observations:       2280    AIC:                2007.
Df Residuals:           2277    BIC:                2024.
Df Model:                2
Covariance Type:        nonrobust
=====
```

	coef	std err	t	P> t	[0.025	0.975]
=====						
output; double click to hide	3641	0.460	-0.791	0.429	-1.267	0.539
x1	0.1927	0.006	31.815	0.000	0.181	0.205
x2	0.3675	0.044	8.350	0.000	0.281	0.454

=====

```
=====
Omnibus:                292.405    Durbin-Watson:           0.053
Prob(Omnibus):           0.000    Jarque-Bera (JB):        99.489
Skew:                    0.269    Prob(JB):                2.49e-22
Kurtosis:                2.129    Cond. No.                707.
=====
```

Results: Uniqueness



OLS Regression Results

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=====
Dep. Variable:          y    R-squared:                0.612
Model:                  OLS    Adj. R-squared:           0.611
Method:                 Least Squares    F-statistic:      1793.
Date:                   Thu, 08 Nov 2018    Prob (F-statistic):    0.00
Time:                   13:16:27    Log-Likelihood:      -997.66
No. Observations:       2280    AIC:                  2001.
Df Residuals:           2277    BIC:                  2019.
Df Model:                2
Covariance Type:        nonrobust
=====
```

	coef	std err	t	P> t	[0.025	0.975]
const	1.4893	0.460	3.238	0.001	0.587	2.391
x1	0.2152	0.006	35.586	0.000	0.203	0.227
x2	0.4462	0.044	10.152	0.000	0.360	0.532

```
=====
Omnibus:                 174.490    Durbin-Watson:           0.086
Prob(Omnibus):            0.000    Jarque-Bera (JB):        215.930
Skew:                     0.711    Prob(JB):                 1.29e-47
Kurtosis:                 3.499    Cond. No.                  707.
=====
```

Discussion

- ▶ Demographics related to rating and uniqueness
 - ▶ Urban areas have higher average rating and uniqueness scores
 - ▶ The above is also true for high income areas
- ▶ These relationships make economic sense
 - ▶ Chefs and restaurateurs serve high quality cuisine to customers who are likely to purchase their food
 - ▶ Urban areas are also going to have markets where there is demand for unique cuisines
- ▶ They also make demographic sense
 - ▶ Urban areas tend to be more ethnically diverse
 - ▶ Leads to more unique food choices, relative to rural areas

Conclusion

- ▶ Because these results are based in economics and demography, they generalize to places outside California
 - ▶ For example, we'd expect New York to have high quality, unique tastes (and it does)
- ▶ Recommendation: Chefs and restaurateurs should look at the demographics and economic state of the market they are considering entrance to, and make decisions based off of that
 - ▶ Also look at similar restaurants in that area, if there are any