

What Factors Predict a Lower Health Code Score?

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Significance



CDC

Center for Disease
Control and Prevention

What Causes Food-Borne Illness?

In short, bad management

Lack of knowledge around food safety

- Poorly trained staff



- Not properly storing and handling food



- Uncareful managers

Exposure to pathogens



Diagnosing food contamination post-consumption (too late!)

HYPOTHESIS

restaurants with smaller seating capacity receive lower
numerical health inspection scores

Variables

Dependent variables: Restaurant's health inspection score

Independent variables: Size of restaurant (indicated by seating capacity), corporate/non-corporate ownership, median income in restaurant's zip code, whether there is a white majority in restaurant's zip code, cost of living in restaurant's zip code



VS



Data Sources

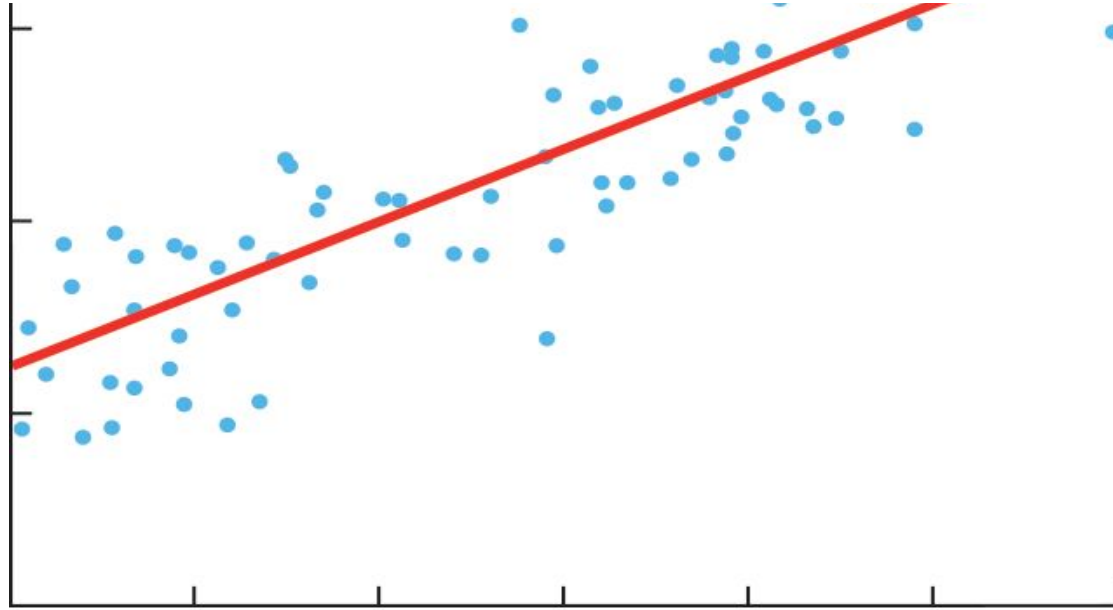
LA County Environmental Health department

- Scores from 2017 health inspections of full-service restaurants located in the City of Los Angeles

2010 US Census

- Information on demographics, cost of living and income by zip code

Methods: Multiple Regression Analysis



Regression Statistics

| <i>Regression Statistics</i> | |
|------------------------------|-----------|
| Multiple R | 0.1115757 |
| R Square | 0.0124491 |
| Adjusted R Square | 0.0119375 |
| Standard Error | 3.9181488 |
| Observations | 13520 |

Analysis of Variance

| ANOVA | | | | | |
|------------|-----------|-------------|-----------|-----------|-----------------------|
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
| Regression | 7 | 2614.938782 | 373.56268 | 24.333335 | 3.52644E-33 |
| Residual | 13512 | 207434.739 | 15.35189 | | |
| Total | 13519 | 210049.6778 | | | |

Statistical Inference

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
|---------------------|---------------------|-----------------------|---------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept | 93.3360437 | 0.1606047 | 581.153876 | 0 | 93.02123605 | 93.6508513 | 93.021236 | 93.6508513 |
| SEATS 0-30 | 0.1657085 | 0.141847893 | 1.16821265 | 0.24274161 | -0.112333165 | 0.44375017 | -0.1123332 | 0.44375017 |
| SEATS 31-60 | -0.36033 | 0.15004414 | -2.4014934 | 0.01634173 | -0.654437462 | -0.0662225 | -0.6544375 | -0.0662225 |
| SEATS 61-150 | -0.6763837 | 0.155946067 | -4.3372925 | 1.4529E-05 | -0.982059763 | -0.3707076 | -0.9820598 | -0.3707076 |
| Corporate Ownership | 0.60326618 | 0.069853417 | 8.63617271 | 6.4581E-18 | 0.466343729 | 0.74018862 | 0.46634373 | 0.74018862 |
| Median Income | -1.443E-06 | 3.50385E-06 | -0.4118162 | 0.68048066 | -8.31098E-06 | 5.4251E-06 | -8.311E-06 | 5.4251E-06 |
| Majority White | 0.05400247 | 0.097404374 | 0.55441524 | 0.57930388 | -0.136923699 | 0.24492864 | -0.1369237 | 0.24492864 |
| Cost of Living | -0.0009732 | 0.000351035 | -2.7724923 | 0.0055705 | -0.001661319 | -0.0002852 | -0.0016613 | -0.0002852 |

Possible Limitations

Longitudinal Effects:

Analysis is sourced from a single year

Selection Bias:

Analysis focuses on specific geographical region

Future Testing Considerations

Expanding Geographical Range

Analyzing Changes Over Time

Health Inspector Information

Type of Food Served



Any questions?

References

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