Consumer Reviews and Regulation: Evidence from New York City Restaurants

February 18, 2026

APPENDIX TO

Consumer Reviews and Regulation: Evidence from NYC Restaurants

Chiara Farronato and Georgios Zervas

A1 Additional Figures and Tables

Table A1: Grade Transitions

Prior Card	N	Score at Initial Inspection 0-13	14-27	28+
A	127,357	0.42	0.36	0.22
B	27,335	0.21	0.43	0.36
C	6,375	0.18	0.42	0.40

Prior Card	N	Card Posted at End of Inspection Cycle A	B	C
A	127,357	0.85	0.13	0.02
B	27,335	0.64	0.30	0.06
C	6,375	0.59	0.29	0.13

For every inspection cycle with a previous grade, the left panel shows the card displayed before the cycle starts (rows) and the distribution over initial inspection scores (columns). For example, of the 126,540 restaurant-inspections obtaining an A-grade during the previous inspection cycle, 41% scored between 0 and 13 points during the initial inspection, 36% scored between 14 and 27 points, and 22% scored 28 or more points. The right panel shows the card displayed before the cycle starts (rows) and the distribution over letter grades at the end of the inspection cycle (columns). For example, of the 126,540 restaurant-inspections starting a new inspection cycle with an A-grade, 85% kept it, 13% dropped to B-grade, and 2% dropped to C-grade. The rows do not always sum to 100% due to rounding.

Table A2: Restaurant Characteristics and Initial Inspections

	Initial Score		Score > 13	
Model:	(1)	(2)	(3)	(4)
Variables				
Not on Yelp	-0.534	-0.518	-0.022	-0.021
Inexpensive	-0.540	-0.372	-0.007‡	-0.002‡
Moderate	0.032‡	0.030‡	0.016	0.014
Pricey	-1.47	-1.95	-0.030	-0.050
High End	-2.36	-2.82	-0.054	-0.074
Bronx	-0.227‡	0.876	-0.012	0.021
Brooklyn	-0.315	-0.164‡	-0.005‡	-0.002‡
Queens	0.464	-0.326	0.026	-0.003‡
Staten Island	-1.23	-0.704	-0.044	-0.027
Unknown Borough	-7.14	-7.81	-0.216‡	-0.216‡
Bar/Pub	0.409	-0.463	0.060	0.028
Fast Food	1.31	1.32	0.081	0.085
Restaurant	3.26	3.16	0.127	0.125
American	-1.30	-1.32	-0.043	-0.043
Cafe/Bakery	-2.67	-2.56	-0.090	-0.084
Chinese	1.22	1.37	0.048	0.050
Italian	-0.822	-0.818	-0.025	-0.028
Latin/Mexican	1.28	1.40	0.038	0.040
Pizza	-0.380	-0.192‡	0.004‡	0.009‡
Chain Restaurant	-6.36	-6.35	-0.221	-0.218
Fixed-effects				
Inspector FE		Yes		Yes
Month-Year FE	Yes	Yes	Yes	Yes
Fit statistics				
Observations	206,864	206,860	206,864	206,860
R^2	0.078	0.182	0.079	0.149
Dependent variable mean	21.7	21.7	0.637	0.637

For every initial inspection, the total violation score is regressed against observable characteristics of the restaurant. In Columns (1)-(2), the outcome is the total score, with higher scores denoting worse hygiene. In Columns (3)-(4), the outcome is whether or not the score is 14 points or more, which is the threshold past which the restaurant is not assigned a A-grade and is reinspected within a few weeks. Controls include month-year fixed effects in all columns and inspector fixed effects in even-numbered columns. The left-out category refers to restaurants in Manhattan that are listed on Yelp, with unknown price category, venue, or cuisine. The average score is 21.7 points, with a standard deviation of 14.5. Standard errors clustered at the restaurant level. To improve readability, standard errors are excluded and the symbol ‡ denotes a coefficient that is ***not*** *statistically significant at the 5% confidence level.*

Table A3: Top 20 Violation Codes

Code	Description	Share of Inspections
02B	Hot food item not held at or above 140º F.	20.5%
04H	Raw, cooked or prepared food is adulterated, contaminated, cross-contaminated, or not discarded in accordance with HACCP plan.	11.5%
04M	Live roaches present in facility's food and/or non-food areas.	7.8%
04A	Food Protection Certificate not held by supervisor of food operations.	9.3%
02G	Cold food item held above 41º F (smoked fish and reduced oxygen packaged foods above 38 ºF) except during necessary preparation.	35.6%
10H	Proper sanitization not provided for utensil ware washing operation.	7.4%
06D	Food contact surface not properly washed, rinsed and sanitized after each use and following any activity when contamination may have occurred.	27.6%
04N	Filth flies or food/refuse/sewage-associated (FRSA) flies present in facility's food and/or non-food areas. Filth flies include house flies, little house flies, blow flies, bottle flies and flesh flies. Food/refuse/sewage-associated flies include fruit flies, drain flies and Phorid flies.	13.4%
06E	Sanitized equipment or utensil, including in-use food dispensing utensil, improperly used or stored.	11.4%
06C	Food not protected from potential source of contamination during storage, preparation, transportation, display or service.	24.1%
10B	Plumbing not properly installed or maintained; anti-siphonage or backflow prevention device not provided where required; equipment or floor not properly drained; sewage disposal system in disrepair or not functioning properly.	24.1%
08A	Facility not vermin proof. Harborage or conditions conducive to attracting vermin to the premises and/or allowing vermin to exist.	42.5%
06F	Wiping cloths soiled or not stored in sanitizing solution.	8.4%
04L	Evidence of mice or live mice present in facility's food and/or non-food areas.	25.9%
09C	Food contact surface not properly maintained.	7.6%
10F	Non-food contact surface improperly constructed. Unacceptable material used. Non-food contact surface or equipment improperly maintained and/or not properly sealed, raised, spaced or movable to allow accessibility for cleaning on all sides, above and underneath the unit.	48.2%
05D	Hand washing facility not provided in or near food preparation area and toilet room. Hot and cold running water at adequate pressure to enable cleanliness of employees not provided at facility. Soap and an acceptable hand-drying device not provided.	6.4%
06A	Personal cleanliness inadequate. Outer garment soiled with possible contaminant. Effective hair restraint not worn in an area where food is prepared.	7.9%
08C	Pesticide use not in accordance with label or applicable laws. Prohibited chemical used/stored. Open bait station used.	5.1%
04J	Appropriately scaled metal stem-type thermometer or thermocouple not provided or used to evaluate temperatures of potentially hazardous foods during cooking, cooling, reheating and holding.	7.2%

The 20 violation codes that occur most frequently in initial inspections. The last column shows the share of initial inspections during which the inspector found a particular violation. Violation codes are ordered as in Figure **??***, based on how well Yelp reviews can predict that specific violation (best at the top).*

Table A4: Yelp Hygiene Signal and Sold-out Probability—Robustness

Dependent Variable:	Sold Out on OpenTable					
Model:	(1)	(2)	(3)	(4)	(5)	(6)
Variables						
After Review	-0.002***	-0.002***	-0.002**	-0.003***	-0.002***	-0.002***
	(0.0005)	(0.0005)	(0.0009)	(0.0005)	(0.0004)	(0.0005)
Bad Yelp Hygiene Signal × After Review	-0.003***	-0.003***	-0.004***	-0.003**	-0.004***	-0.003***
	(0.0009)	(0.001)	(0.001)	(0.001)	(0.001)	(0.0008)
Fixed-effects						
Day-of-Week FE	Yes	Yes	Yes	Yes	Yes	Yes
Review FE	Yes	Yes	Yes	Yes	Yes	Yes
Specifications	Baseline	A-Grade Card Only	Different Control	No Days Around Event	Worst 10% Signal	Worst 30% Signal
Fit statistics						
Observations	2,644,039	2,212,644	1,056,027	2,217,302	2,644,039	2,644,039
Adjusted R^2	0.498	0.499	0.500	0.495	0.498	0.498

Clustered (Restaurant) standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Robustness checks of the difference-in-differences specification in Column 2 of Table **??**. *Column 1 reproduces the baseline results. The other columns each change one parameter or sample-selection criterion at a time. Column 2 focuses on events when the restaurant displayed an A-grade card in the month surrounding the focal Yelp review. Column 3 only uses the 1-, 2-, and 3-star reviews with the 20% best hygiene signals as control group. Column 4 removes 5 days surrounding the review from the observations (from 2 days before to 2 days after the focal review). Column 5 defines the treated group as restaurants receiving a Yelp review hygiene signal from among the top 10% worst signals. Column 6 defines the treated group as restaurants receiving a Yelp review hygiene signal from among the top 30% worst signals.*

Table A5: Yelp Hygiene Signal and Sold-out Probability—Robustness

Violation Codes	Interaction Coefficient
02B	-0.002**
	(9e-04)
02B, 04H	-0.001
	(0.001)
02B, 04H, 04M	-0.0014
	(0.001)
02B, 04H, 04M, 04A	-0.0023**
	(0.001)
02B, 04H, 04M, 04A, 02G	-0.0032***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H	-0.004***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D	-0.004***
	(0.001)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N	-0.0032***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E	-0.004***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C	-0.0032***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B	-0.0036***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A	-0.0039***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F	-0.0039***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L	-0.0038***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L, 09C	-0.0035***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L, 09C, 10F	-0.0038***
	(9e-04)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L, 09C, 10F, 05D	-0.0039***
	(0.001)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L, 09C, 10F, 05D, 06A	-0.0036***
	(0.001)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L, 09C, 10F, 05D, 06A, 08C	-0.0036***
	(0.001)
02B, 04H, 04M, 04A, 02G, 10H, 06D, 04N, 06E, 06C, 10B, 08A, 06F, 04L, 09C, 10F, 05D, 06A, 08C, 04J	-0.0035***
	(9e-04)

Note: *p<0.1; **p<0.05; ***p<0.01

Robustness checks of the difference-in-differences specification presented in Column 2 of Table **??**. *Each row displays the difference-in-differences coefficient from a different regression. The first row uses only the sufficient reduction from violation code 02B (hot food not kept at or above* $140^o F$*)—the violation code for which Yelp is most informative—to define the event of a bad hygiene signal. Subsequent rows add the sufficient reduction of violation codes for which Yelp is progressively less informative. The fifth row reproduces the difference-in-differences coefficient estimate from Column 2 of Table* **??**.

Table A6: Supply Side—Descriptive Statistics

Variable	Mean	Standard Deviation	25^{th} Percentile	Median	75^{th} Percentile
Violation Found	0.18	0.38	0.00	0.00	0.00
Violation Found (Residual)	0.00	0.30	-0.16	-0.02	0.06
Has Recent Reviews	0.65	0.48	0.00	1.00	1.00
Informative	0.25	0.43	0.00	0.00	0.25
Has Recent Reviews × Informative	0.16	0.37	0.00	0.00	0.00
Has Recent Reviews × Informative (Residual)	-0.00	0.14	-0.04	0.00	0.04
Average Review Propensity	198	197	100	165	242
No Previous Reviewers	0.25	0.44	0.00	0.00	1.00

Summary statistics for the variables in the supply-side analysis (Section **??***). For the dependent variable and main endogenous variable, we also present summary statistics of the residuals of regressions on inspection fixed effects and violation-code–restaurant fixed effects.*

Table A7: Yelp Signal and Restaurants' Hygiene Compliance—IV First Stage

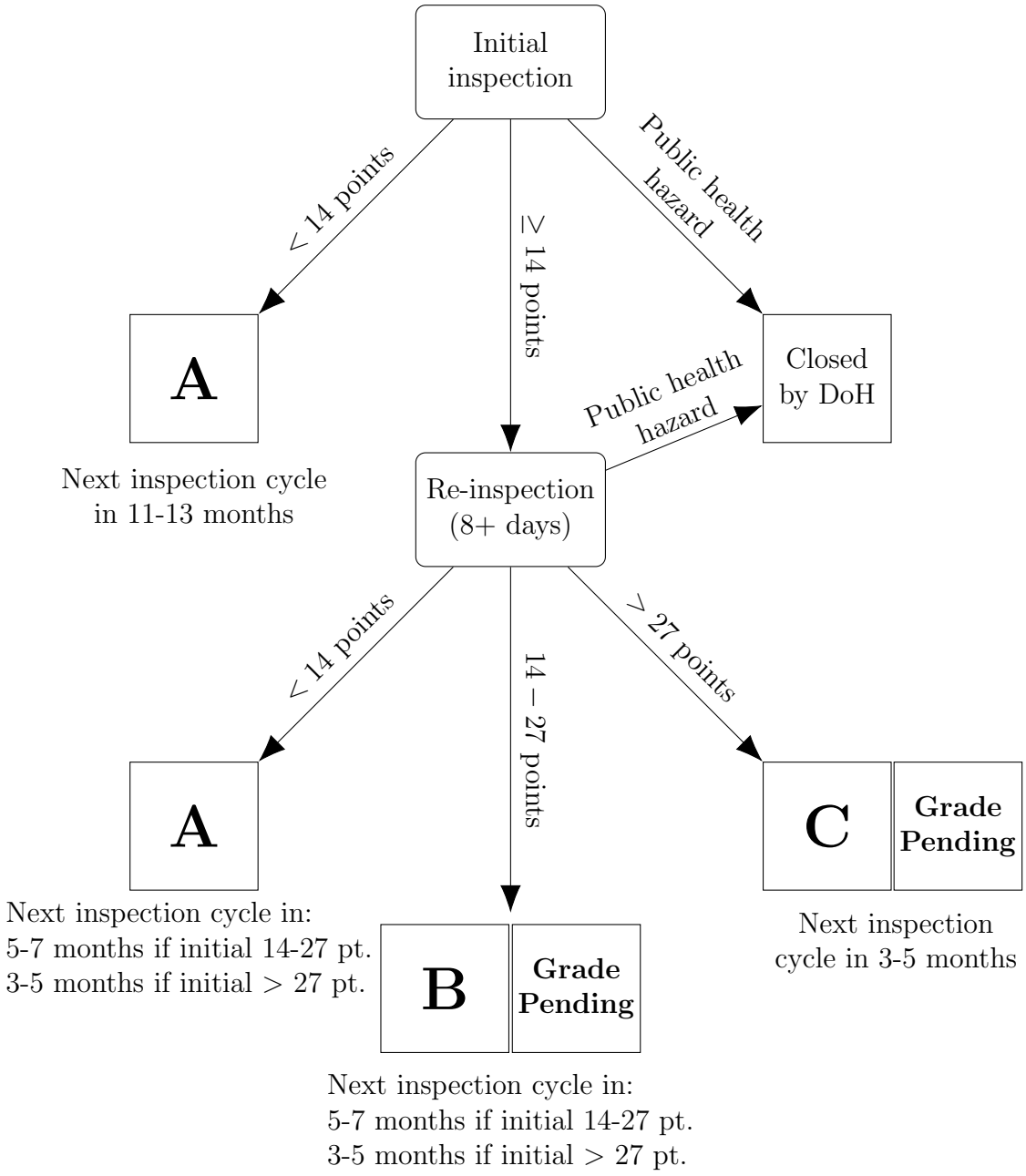
	Panel A: Has Recent Reviews – First-Stage		
	(1)	(2)	(3)
Log(Avg. Review Propensity + 1)	0.029***		
	(0.003)		
No Previous Reviewers	-0.499***		
	(0.013)		
Adjusted R-Squared	0.350		
F stat.	2,825.820		
Wald	29,574.060		
	Panel B: Has Recent Reviews*Informative – First-Stage		
Log(Avg. Review Propensity + 1)*Informative	0.029***	0.029***	-0.002
	(0.003)	(0.003)	(0.002)
No Previous Reviewers	-0.499***	-0.499***	-0.494***
	(0.013)	(0.013)	(0.012)
Adjusted R-Squared	0.729	0.786	0.842
F stat.	14,126.304	4,901.366	87,676.621
Wald	57,917.222	29,573.898	7,700.835
Inspection Fixed Effects		Yes	Yes
Violation Code Fixed Effects		Yes	
Violation Code-Restaurant Fixed Effects			Yes
Observations	2,915,240	2,915,240	2,881,380
Note:			$^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$

First-stage estimates of Panel B in Table **??***.*

Table A8: Yelp Signals and Restaurants' Hygiene Compliance—Different IV

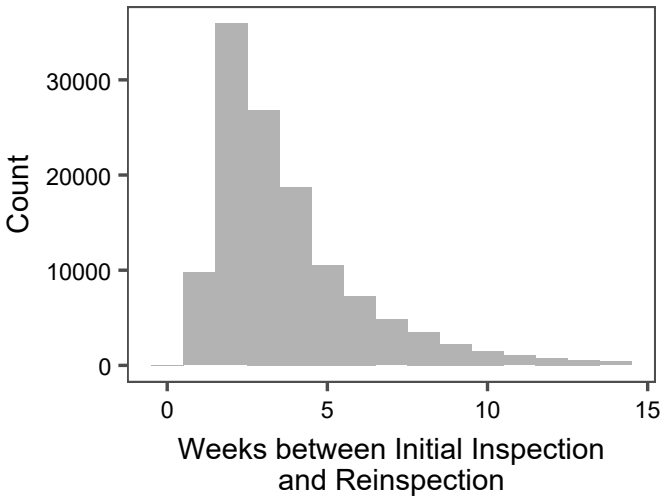
	Violation Found - IV		
Has Recent Reviews × Informative	-0.011***	-0.011***	-0.016***
	(0.002)	(0.002)	(0.003)
Constant	0.176***		
	(0.001)		
Adjusted R^2	0.000	0.131	0.187
F stat.	1.191	277.286	14,182.345
Wald	101.917	33.124	24.267
Inspection fixed effects		Yes	Yes
Violation Code fixed effects		Yes	
Violation Code-Restaurant fixed effects			Yes
Observations	2,915,240	2,915,240	2,915,240
Note:			*p<0.1; **p<0.05; ***p<0.01

IV coefficient estimates of Equation **??** *as in Panel B of Table* **??**. *In Panel B of Table* **??**, *we present estimates in which the main instrument is log-transformed; here, we present estimates in which the instrument is in levels, given the possible biases of log transformation (****????****).*



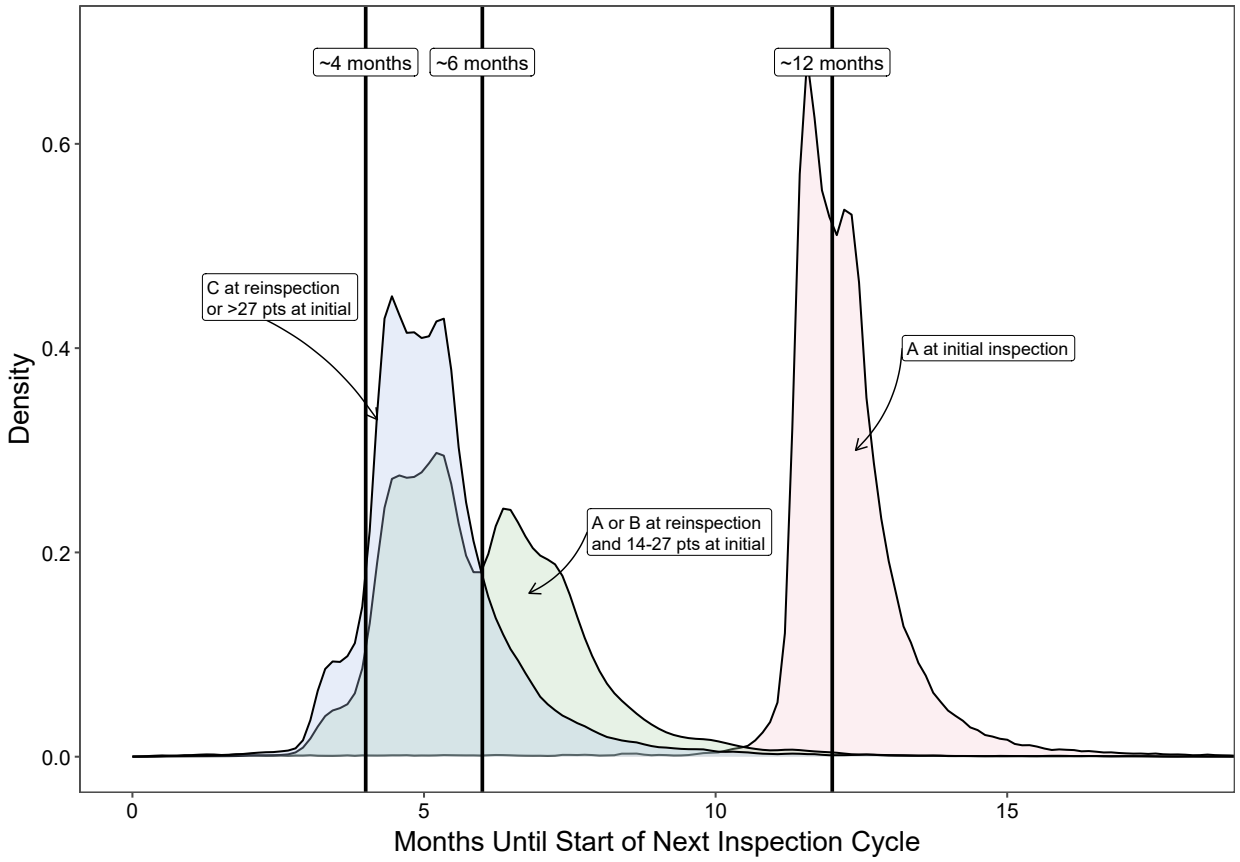
Restaurant inspection cycle conducted by the New York City Department of Health and Mental Hygiene (adapted from `https://www1.nyc.gov/assets/doh/downloads/pdf/rii/inspection-cycle-overview.pdf`*).*

Figure A1: Inspection Cycle



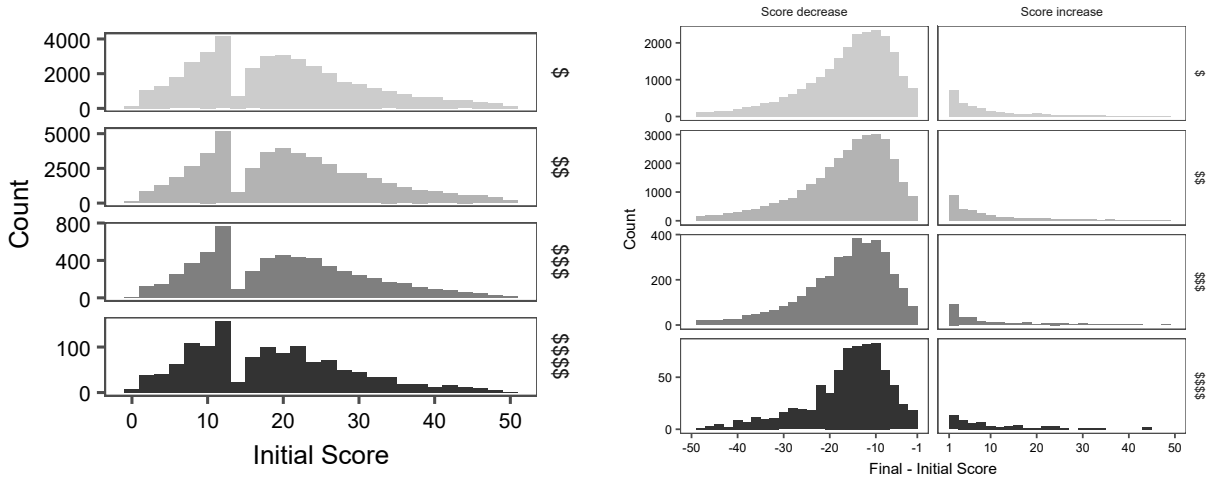
Distribution of the time lag, in weeks, between an initial inspection and a reinspection for restaurants that received 14 or more points during the initial inspection.

Figure A2: Time between Initial Inspection and Reinspection



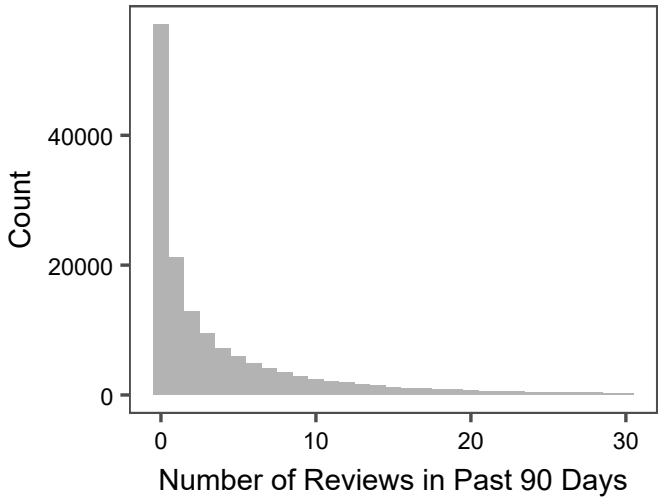
Distribution of time between the last inspection of the current inspection cycle and the first inspection of the next cycle. For restaurants obtaining an A-grade at initial inspection during the current inspection cycle (pink), the expected time is 12 months since the last inspection. For restaurants scoring 14-27 points at initial inspection and obtaining A- or B-grades at reinspection, the expected time is 5-7 months since the last inspection. For restaurants scoring 28+ points at initial inspection or obtaining a C-grade at reinspection, the expected time is 3-5 months since the last inspection. The plot shows substantial variation in the time between inspections.

Figure A3: Time between Inspection Cycles



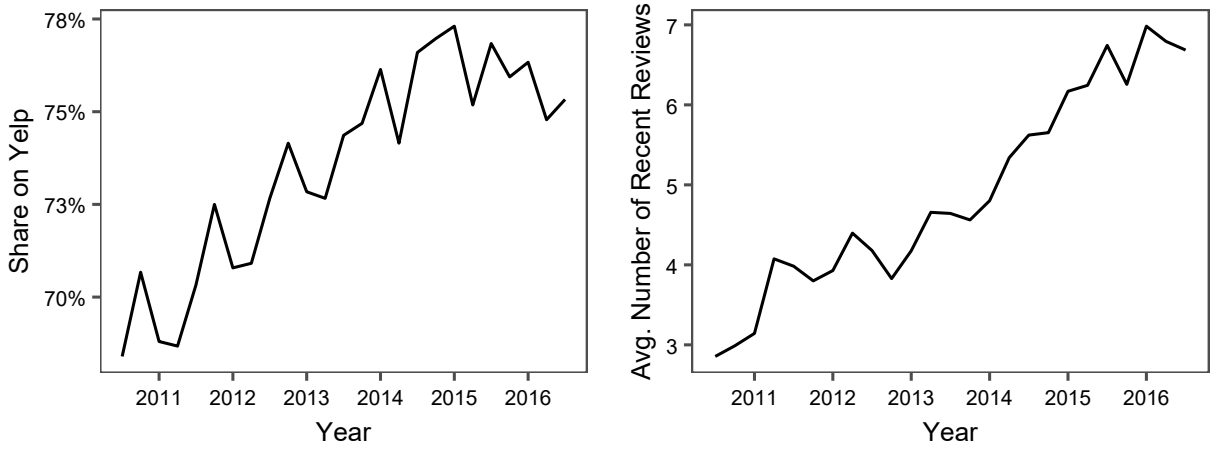
These figures are similar to Figure **??**, *except that restaurants are divided into four price groups, from "inexpensive" at the top to "high-end" at the bottom. For each inspection cycle, the left column shows the distribution of violation scores that restaurants obtain during the initial inspection. For the purpose of these plots, inspection scores are capped at 50. For restaurants that undergo a reinspection, the right column displays the difference between the reinspection score and the initial inspection score (a negative number means that hygiene improved). For the purpose of these plots, the difference in inspection scores is bounded between -20 and 20 (i.e., higher differences in absolute value are capped at +/-20).*

Figure A4: Inspection Outcomes by Price Group



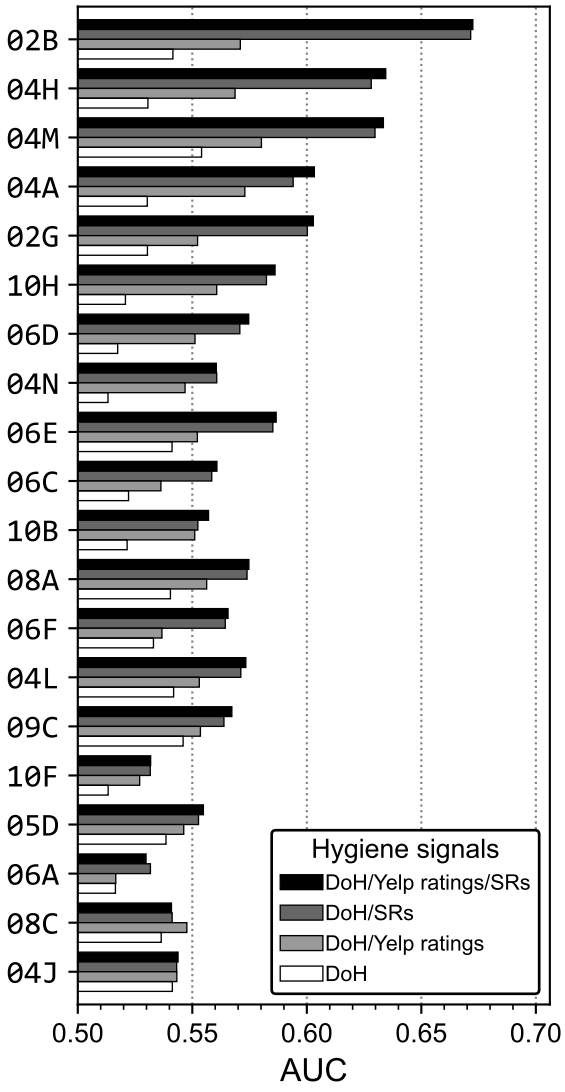
Distribution of the number of reviews that a restaurant on Yelp obtains in the 90 days preceding an initial inspection. The median number of reviews received before an initial inspection is 1; the mean is 5. For the purpose of this plot, the number of reviews is capped at 25.

Figure A5: Number of Reviews in Previous 90 Days



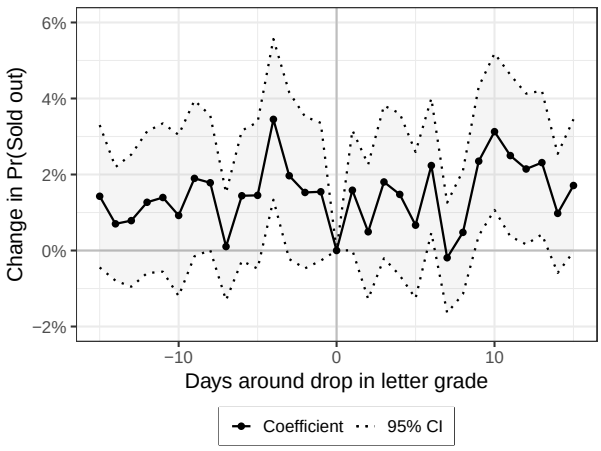
The left figure plots the share of initial inspections during a given quarter for restaurants listed on Yelp. The right figure plots how the average number of reviews that a restaurant on Yelp obtains in the 90 days preceding an initial inspection changes over time. Initial inspections, which are the unit of observation, are aggregated at the quarterly level in the time plots.

Figure A6: Review Frequency over Time



This figure plots the area under the curve (AUC) of the prediction of the 20 most-frequent violation codes, separately for four classifiers: the baseline classifier (white) and the review-augmented classifiers (black), both of which are in the main paper; a classifier that uses letter grades and average star-ratings (light grey); and a classifier that uses letter grades and the sufficient reduction projections (dark grey).

Figure A7: Comparing Prediction Accuracy across Classifiers



Results from event study regressions (Equation **??***), with the event defined as a day when the letter grade drops from "A" to anything lower. There are 1,261 such events for which we have data on sold-out probability (compared to 19,627 events when a Yelp review is submitted with poor hygiene signals, in Figure* **??***). Despite the fluctuating estimates, which may be due to the small sample size, we cannot reject the hypothesis that the probability of being sold out is the same after the change in letter grade as before the event.*

Figure A8: Letter-grade Drop and Sold-out Probability—Event Study

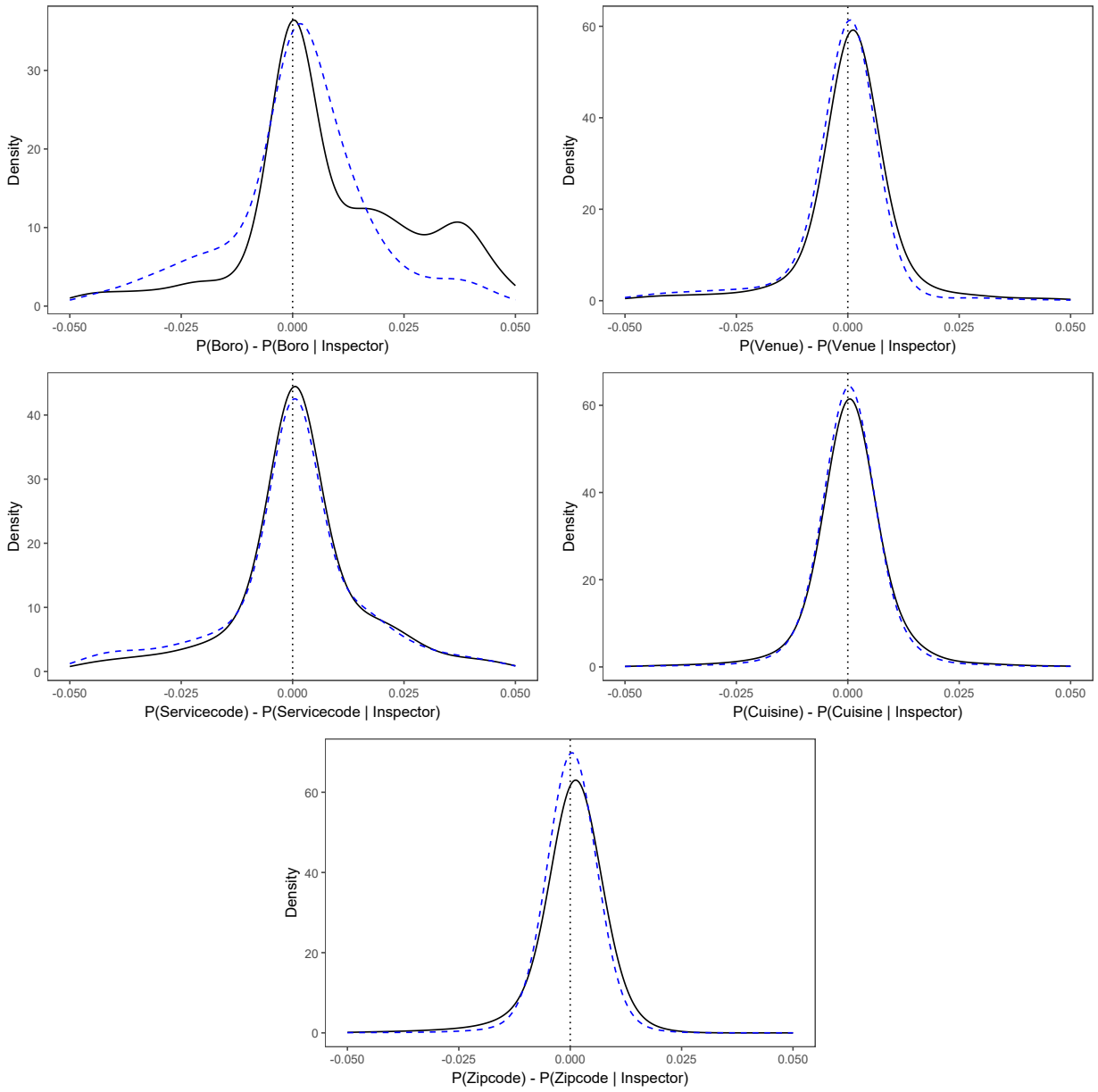
A2 How Are Inspectors and Reviewers Assigned to Restaurants?

Here we verify that, conditional on observables, we cannot reject the hypothesis that inspectors and reviewers are randomly assigned to evaluate restaurants. We describe the procedure for inspectors, but use it also for reviewers. We compute two probability distributions. First, we compute the unconditional distribution of a particular restaurant characteristic, denoted $P(X)$. Second, we compute the distribution of X conditional on a particular inspector Z, denoted $P(X|Z)$. We then take the difference $P(X)-P(X|Z)$ across all possible values of X and across all inspectors. We compare the distribution of this difference to $P(X)-P(X|Z')$. The only difference between $P(X|Z)$ and $P(X|Z')$ is that $P(X|Z)$ is based on the actual allocation of inspectors to restaurants, while $P(X|Z')$ is a random permutation.

Figure A9 displays the distributions of $P(X)-P(X|Z)$—solid line—and $P(X)-P(X|Z')$—dotted line—across all inspectors and for different observable characteristics. If inspectors were randomly assigned to restaurants conditional on observable X, the dotted and solid density functions would be indistinguishable. The figures show that inspectors tend to specialize by geography, inspecting restaurants in one New York City borough or a few zip codes more than in other boroughs or zip codes. There does not seem to be any specialization of inspectors across observable restaurant characteristics other than geography.

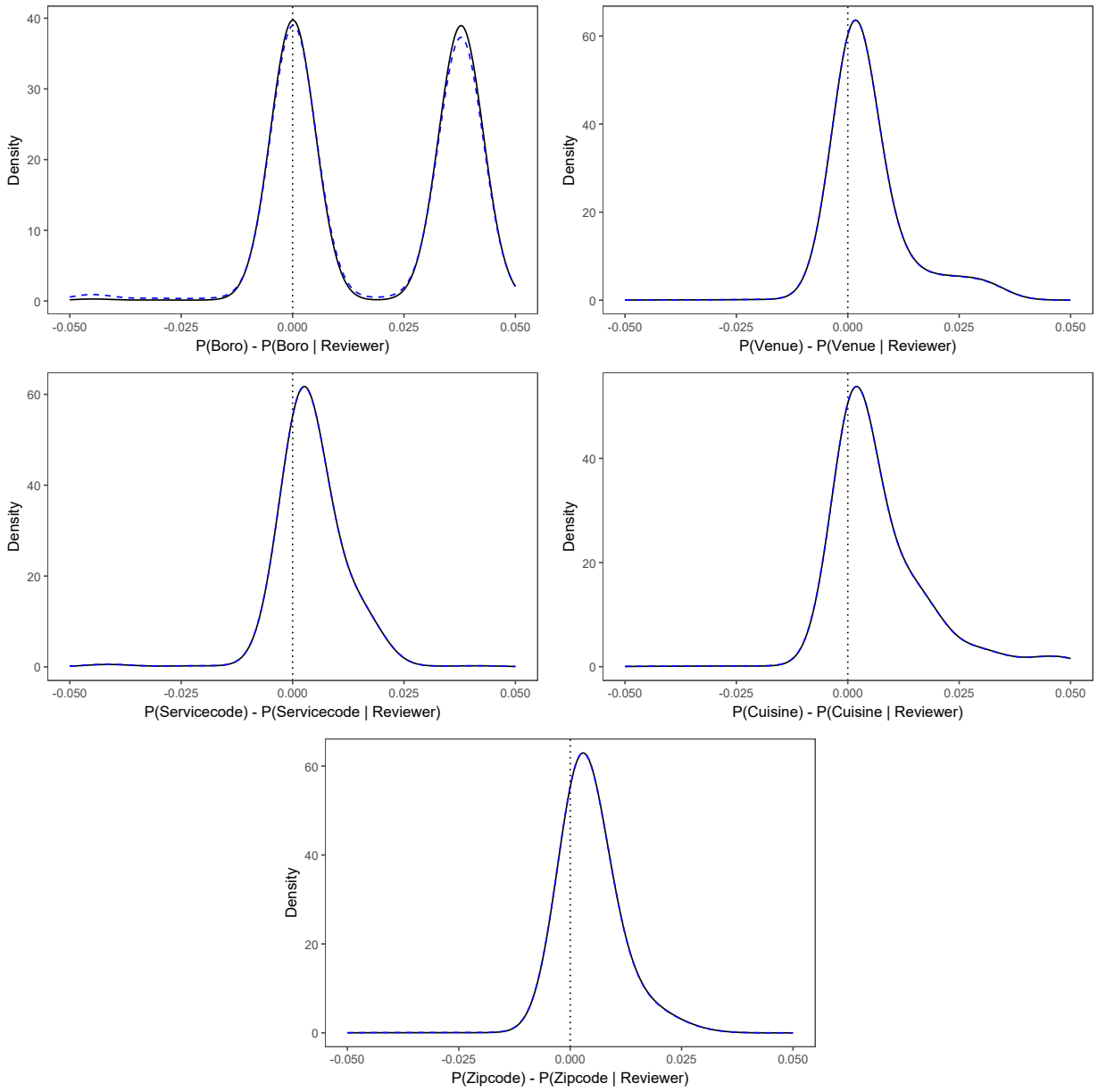
As for how reviewers are "assigned" to restaurants, Figure A10 shows that there is no particular pattern for how users choose to submit reviews of restaurants.

Figure A9: Independence of Inspectors and Restaurant Characteristics



Difference in the distribution of observables unconditional and conditional on inspectors. The solid line plots $P(X) - P(X|Z)$, where the conditional distribution is a function of the actual allocation of inspectors to restaurants. The dotted line computes the conditional distribution after a random permutation of inspectors to restaurants. The average number of restaurants inspected by each inspector is 807 in our data, with a large standard deviation of 822.

Figure A10: Independence of Reviewers and Restaurant Characteristics



Difference in the distribution of observables unconditional and conditional on reviewers. The solid line plots $P(X) - P(X|Z)$, where the conditional distribution is a function of the actual allocation of Yelp reviewers to restaurants. The dotted line computes the conditional distribution after a random permutation of reviewers to restaurants. The average number of restaurants reviewed by each Yelp reviewer is 4.3 in our data, with a large standard deviation of 14.5.

A3 Timing of Reviews and Ranking of Restaurants on Yelp

We want to verify that restaurants with more recent reviews are ranked higher in Yelp search results. To do this, we pulled data from the Yelp API. We submitted the query "Find: Restaurants | Near: New York, NY" on April 8, 2019, at midnight. Yelp places a limit of 1,000 results to be returned and the order in which they are returned reflects the order shown on the webpage if a user were to perform the same search on Yelp. The restaurants returned in this list are the *ranked* restaurants out of all New York City restaurants. Whether a restaurant shows up at all in this list and whether it shows up at the top or at the bottom of the search results will be our outcomes of interest.

We also compile the list of all Yelp restaurants in New York by performing a similar query as before, but separately for each zip code.[1] Given the limit to the number of results returned by the Yelp API, a zip code is further disaggregated if the returned results are 1,000. Specifically, if a query for a given zip code returns fewer than 1,000 restaurants, results are recorded and we move to the next zip code. Otherwise the zip code is split into four quadrants, and we conduct four searches, one for each quadrant, using its center and half its diagonal as the search radius. We continue splitting geographies until the results returned are fewer than 1,000 for each search. After dropping duplicates and businesses outside New York,[2] we are left with 23,387 restaurants, which constitute the population of New York City restaurants on Yelp on April 8, 2019.

For each restaurant, we scrape additional information from Yelp using the URLs obtained from the API. This information includes the date of the most recent review—our treatment variable of interest—and additional controls such as restaurant category, price, Yelp stars, and total number of reviews.

We run regressions of the following type:

$$y_i = \alpha \log \text{days\_since\_last\_review}_i + \boldsymbol{X}_i\beta + \epsilon_i, \tag{1}$$

where i denotes a restaurant, and y is one of two outcomes: first, a dummy for whether the

[1]The following website contains the list of zip codes—compiled by the New York State Department of Health (DoH)—used in the grid search: `https://www.health.ny.gov/statistics/cancer/registry/appendix/neighborhoods.htm`.

[2]The search algorithm may pick up restaurants outside New York City, or in neighboring zip codes, since the search radius is conservatively set to cover larger areas than the quadrant of interest. To determine whether a zip code is located in New York City, we check whether it can be found on the DoH list used in the grid search or whether it is located in New York City according to the US Postal Service's ZIP Code Lookup data.

restaurant is *ranked* in the general query for "restaurants in New York City" and, second, conditional on being ranked, the rank in the search results (where 1 denotes the top result and 999 denotes the last). We expect that the shorter the time since the last review, the more likely a restaurant is to be ranked and the lower—that is, closer to the top of the page—its rank will be. The variable $days\_since\_last\_review_i$ is measured relative to April 7, 2018, the day before our data pull. The vector X_i includes the number of reviews (log) and fixed effects for restaurant category, price grouping ($, $$, $$$, or $$$$), Yelp stars, and zip code. To estimate the relationships of interest, we use OLS, logistic, and probit regressions when the outcome is a dummy for being ranked and OLS, ordered logistic, and ordered probit when the outcome is the exact ranking.

Summary statistics are presented in Table A9 and regression results are presented in Table A10. The results show that businesses with more recent reviews are indeed more likely to be ranked (Columns 1–3) and, if so, placed higher in search results (Columns 4–6). The effects are sizable. When looking at the probability of being in the top 1,000 results, we discuss the logistic regression estimates, given that only 4.3% of New York City restaurants are actually ranked (probit estimates imply similar magnitudes). The estimates from the logistic regression (Column 2) suggest that, all else held constant, doubling the age of the most recent review is associated with a -0.382 decrease in log odds of being ranked, implying an odds ratio of $exp(-0.382) = 0.682$. This suggests significantly reduced odds of being ranked for businesses with older reviews.

When we focus on the sample of restaurants that are ranked (Columns 4–6), the age of the most recent review predicts the actual rank in the search results. All else held constant, OLS results suggest that doubling the age of the most recent review is associated with a *decrease*in rank by 35 positions; for example, dropping from the top result to the 36^{th} result. Similarly, the odds ratio of $exp(-0.265) = 0.767$ from Column 5 confirms the reduced odds of a business moving up the rank the older its most recent review.

Table A9: Summary Statistics

	Mean	Std. Dev.	Min	25^{th} Pctile	Median	75^{th} Pctile	Max	N
Ranked	0.040	0.200	0	0	0	0	1	23,383
Days since last review	322.510	754.840	0	7	32	185	5,081	23,383
Days since last review | Ranked	5.630	11.740	0	0	2	7	173	999

Summary statistics for Yelp restaurants in New York City. Data were obtained from the Yelp API on April 8, 2019.

Table A10: Review Age and Search Ranking Outcomes

	Ranked 0/1			Rank | Ranked		
	Normal	*Logistic*	*Probit*	*OLS*	*Ordered Logistic*	*Ordered Probit*
	(1)	(2)	(3)	(4)	(5)	(6)
Days since last review + 1 (log)	−0.001	−0.382***	−0.218***	34.880***	−0.265***	−0.165***
	(0.001)	(0.043)	(0.023)	(9.403)	(0.073)	(0.037)
Observations	23,383	23,383	23,383	999	999	999
Log Likelihood	6,945.889	−1,545.434	−1,550.226			
Akaike Inf. Crit.	−12,829.780	4,152.869	4,162.451			
R^2				0.370		
Adjusted R^2				0.223		
Note:						*p<0.1; **p<0.05; ***p<0.01

Regression results of Equation 1. In Columns 1–3, the outcome of interest is a dummy for whether a restaurant is in the top 1,000 search results for the query "Find: Restaurants | Near: New York, NY". In Columns 4–6, the outcome is the actual rank in the search results, conditional on being in the top 1,000 results. We drop one observation from the search results because the most recent review date was missing. Controls include number of reviews (in logs) and fixed effects for restaurant category, price grouping ($, $$, $$$, or $$$$), Yelp stars, and zip code.