ONLINE APPENDIX FOR "THE BENEFITS OF REVEALING RACE: EVIDENCE FROM MINORITY-OWNED LOCAL BUSINESSES"

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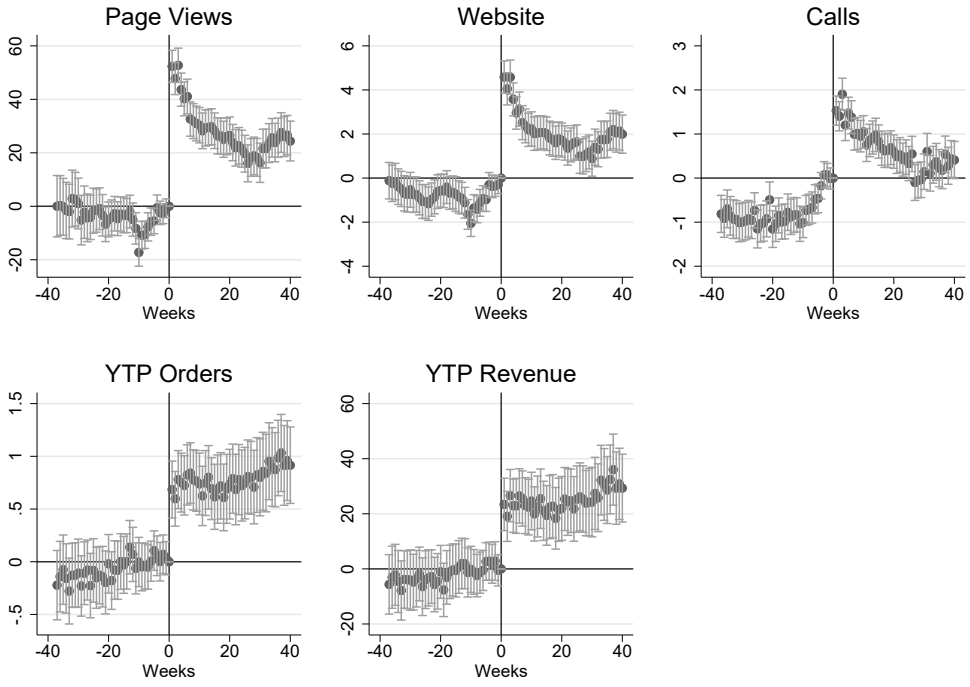
A Additional Tables and Figures

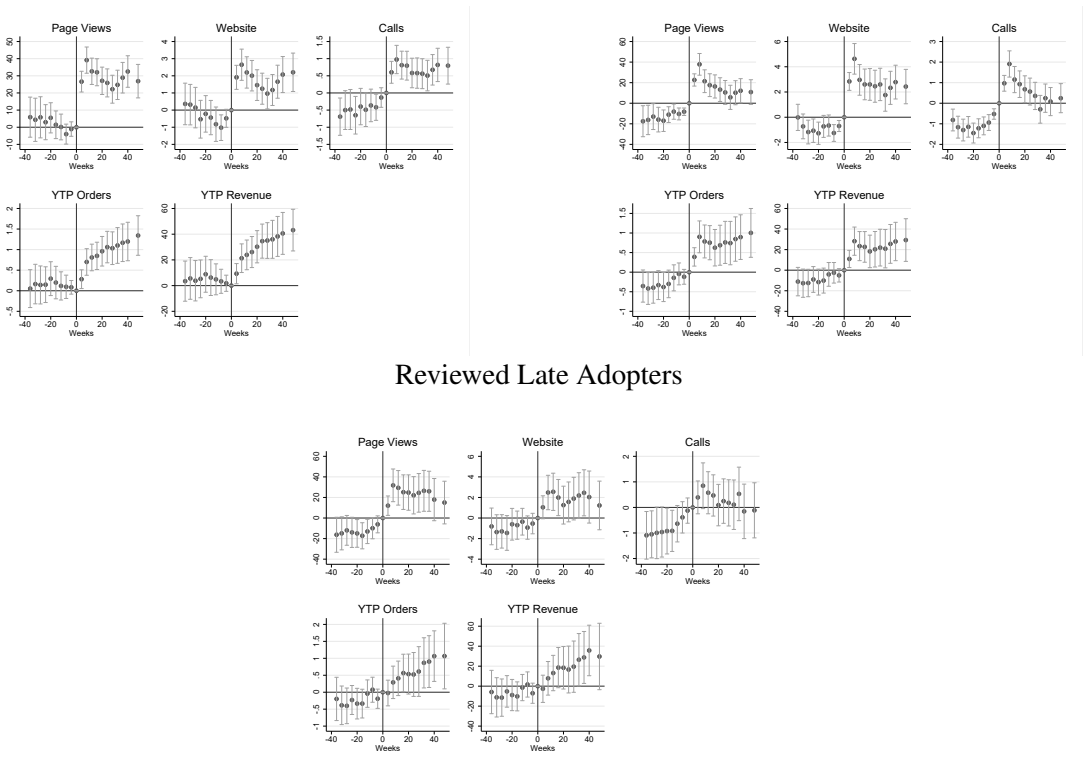
Figures

Figure AI: The Effect of the Label on Business Outcomes (Week-level Analysis)



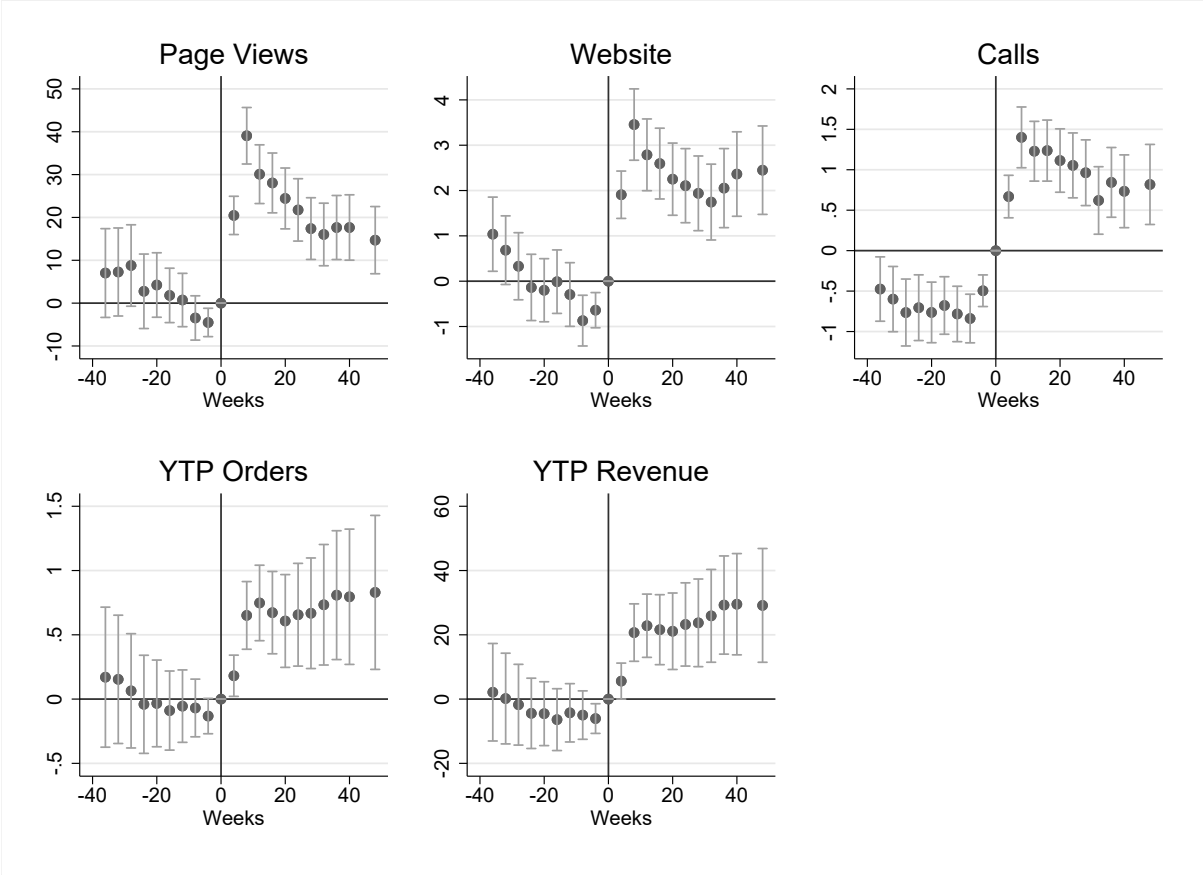
Notes: The figure displays results based on Equation 2 for each of five primary consumer demand and firm performance outcomes, where the estimate between treatment and control firms is allowed to vary for each week around the introduction of the Black-owned business label (see description around Equation 2). Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AII: The Effect of the Label on Business Outcomes (Alternative Sub-Samples)



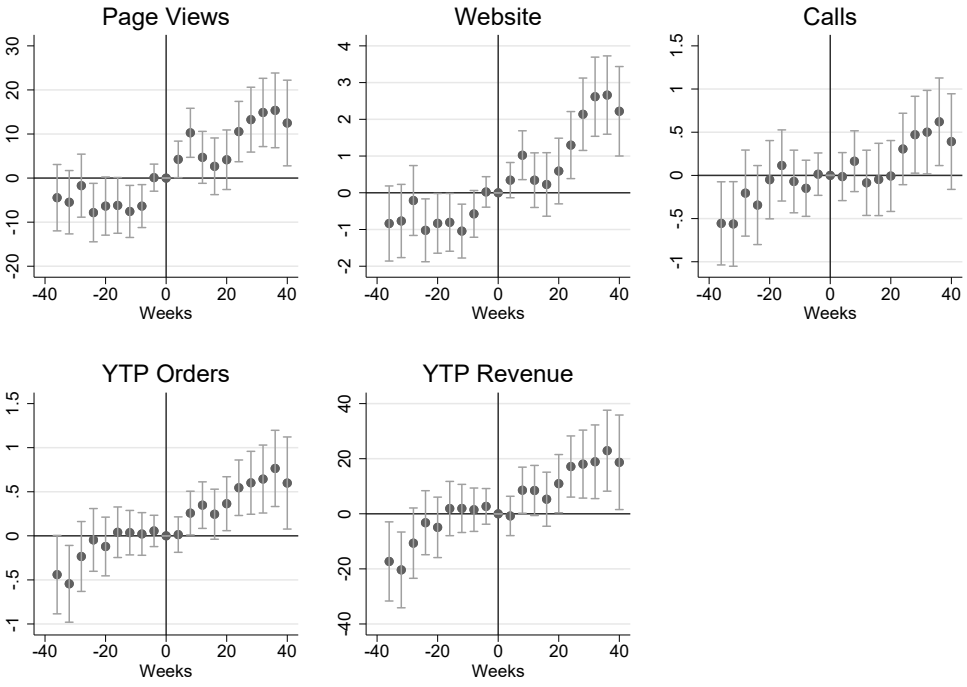
Notes: The figure displays results based on Equation 2 for each of five primary consumer demand and firm performance outcomes, where the estimate between treatment and control firms is allowed to vary for each month around the introduction of the Black-owned business label (see description around Equation 2). Each panel presents the results of each sub-sample, corresponding to the specifications in Panels B through E of Table II. Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AIII: The Effect of the Label on Business Outcomes: Using Only Other Black-Owned Businesses as Controls



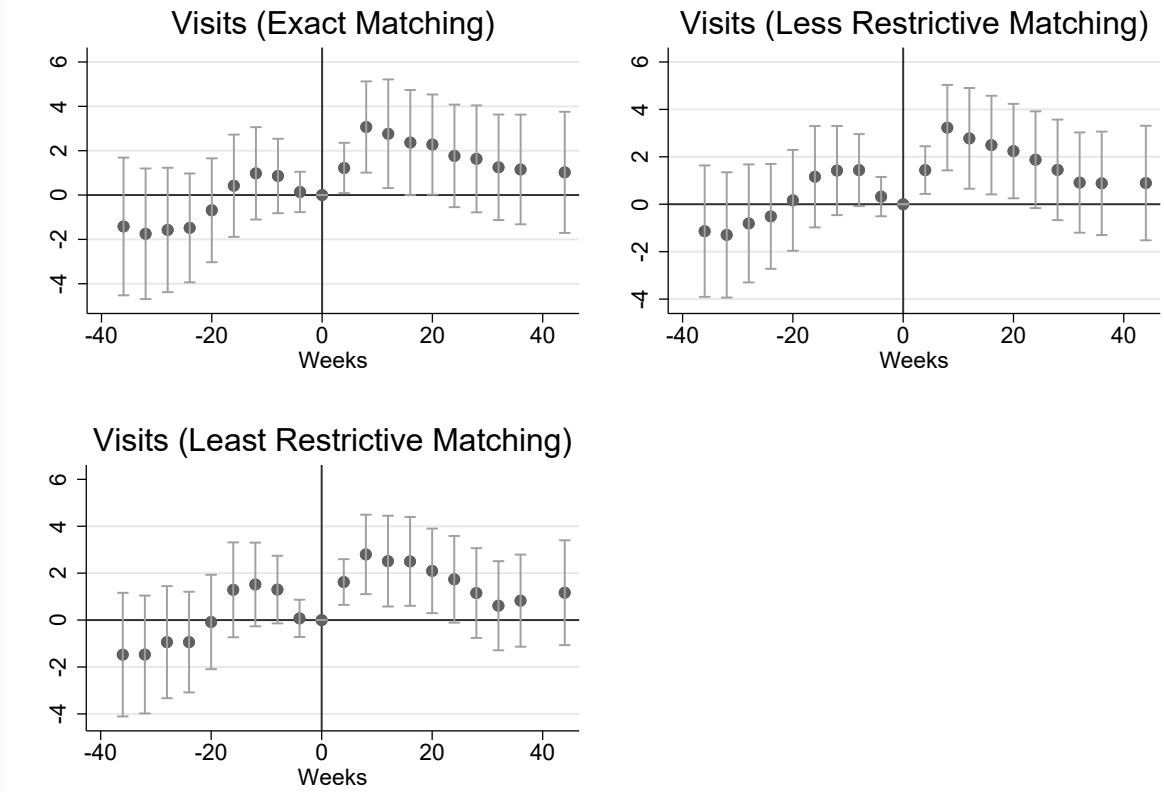
Notes: The figure displays results based on Equation 2 for each of five primary consumer demand and firm performance outcomes, where the estimate between treatment and control firms is allowed to vary for each month around the introduction of the Black-owned business label (see description around Equation 2). We restrict the sample to businesses identified as Black-owned on Yelp or NETS, essentially comparing the effects of Black-owned businesses labeled on Yelp to Black-owned businesses not (yet) labeled on Yelp. Each panel also report 95% confidence intervals. Standard errors are clustered at the business level.

Figure AIV: The Effect of the Latinx-owned Label on Business Outcomes



Notes: The figure displays results based on Equation 2 for each of five primary consumer demand and firm performance outcomes, where the estimate between treatment and control firms is allowed to vary for each month around the introduction of the Latinx-owned business label (see description around Equation 2). Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AV: The Effect of the Label on Off-Platform Business Outcomes

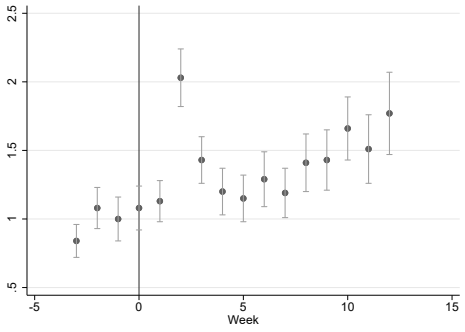


Notes: The figure displays results based on Equation 2 for the number of weekly visits in the SafeGraph data, where the estimate between treatment and control firms is allowed to vary for each month around the introduction of the Black-owned business label (see description around Equation 2). Each panel presents the results of each matching algorithm, corresponding to the specifications in Table V, as well as 95% confidence intervals. Standard errors are clustered at the business level.

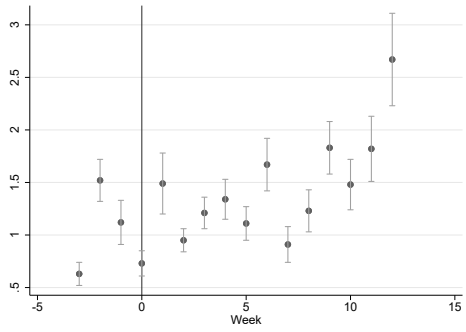
Figure AVI: The Effect of the Black-owned Status on Wayfair

Panel A: Black Suppliers

Engagement

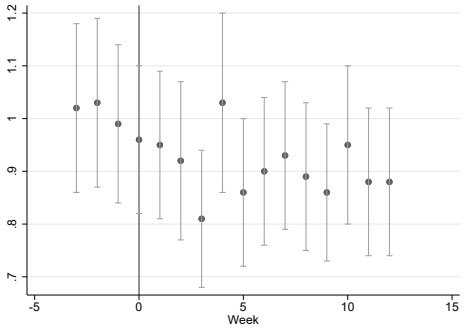


Revenue

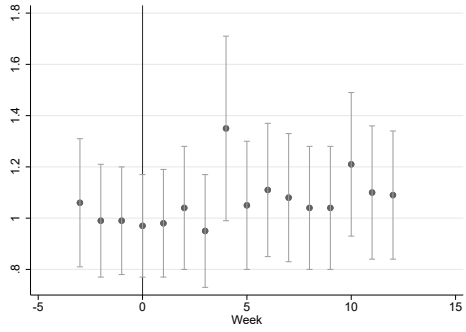


Panel B: Non-Black Suppliers

Engagement



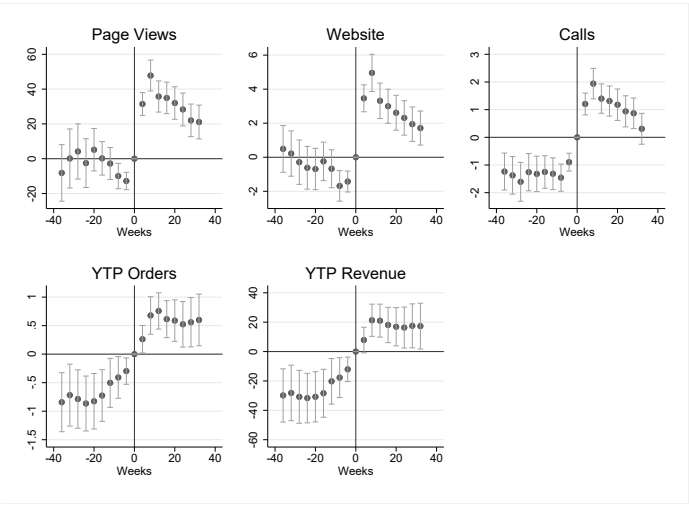
Revenue



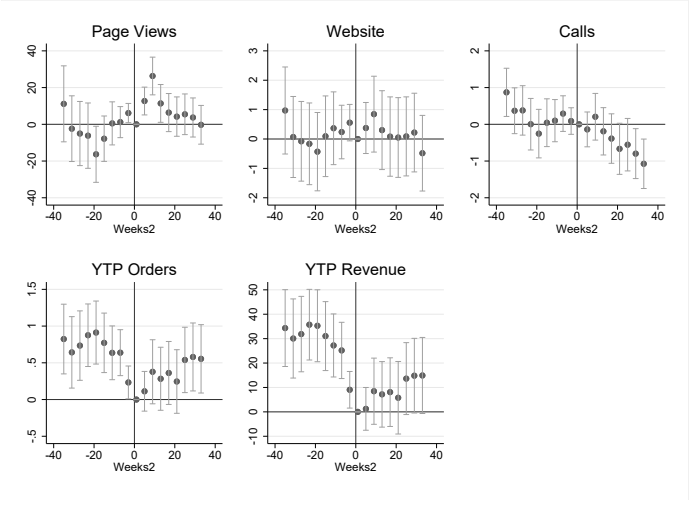
Notes: The figure displays results based on Equation 2 for Wayfair's the two primary measures of engagement and supplier performance consumer demand and firm performance outcomes. The results are presented separately for Black (Panel A) and non-Black (Panel B) suppliers, and are allowed to vary for each month around the introduction of the Black-owned business label (see description around Equation 2). Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AVII: Heterogeneity in the Effect of the Label by Neighborhood Demographic Composition

Panel A: Black-labeled



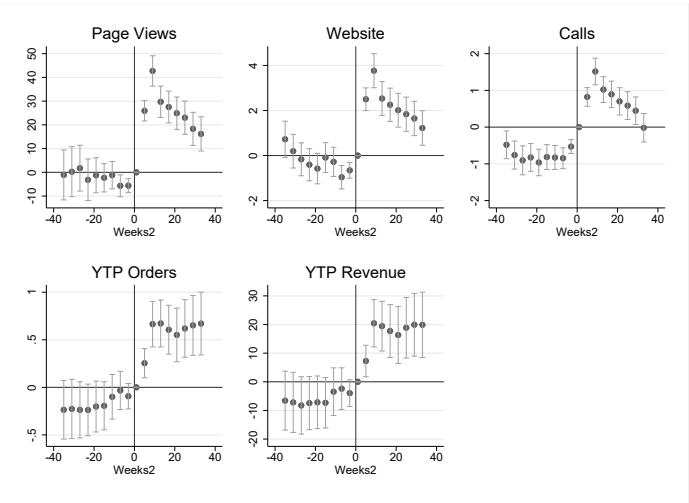
Panel B: Black-labeled + (Black-labeled × Share of Black residents)



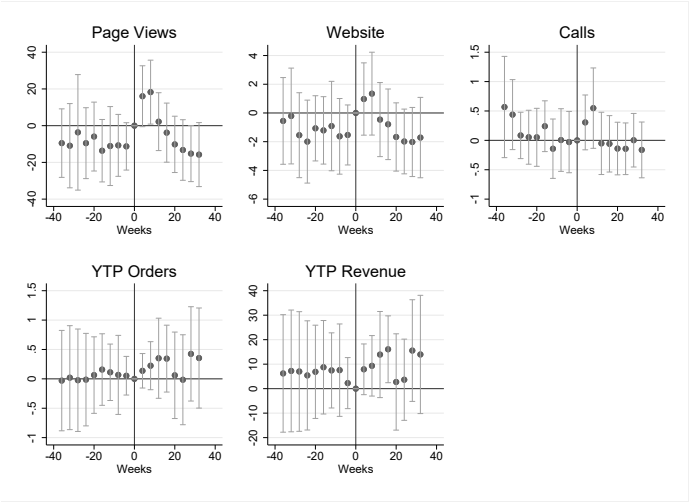
Notes: The panels in the figure display the results based on a regression of the form: $y_{it} = \alpha + \sum_{k \neq 0} \beta_k^1 Black_{ik} + \sum_{k \neq 0} \beta_k^2 Black_{ik} \times \%Black_i + X_{it}\gamma + \theta_i + \tau_t + \varepsilon_{it}$, where the notation is the same as for Equation 2, and $\%Black_i$ is the fraction of Black residents in the zip code in which firm i is located. y_{it} represents each of five primary consumer demand and firm performance outcomes. Panel A presents the estimated coefficients for β_k^1 , and Panel B presents the estimated coefficients for $\beta_k^1 + \beta_k^2$. Each panel reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AVIII: Heterogeneity in the Effect of the Label by Political Ideology

Panel A: Majority Democrat



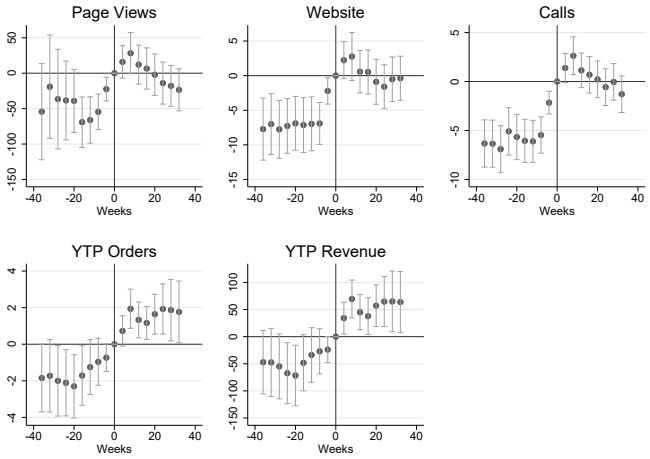
Panel B: Majority Republican



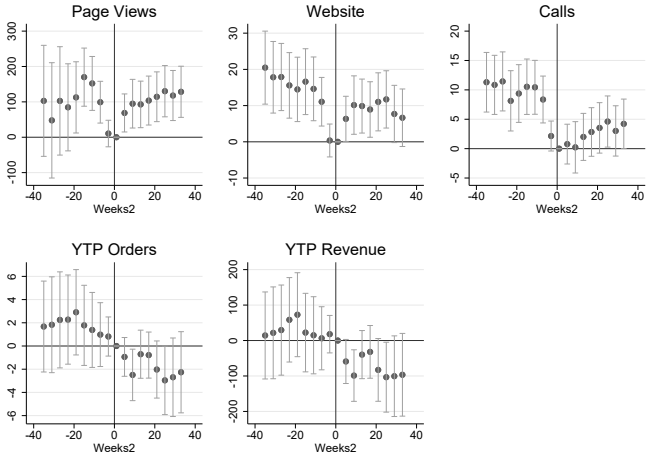
Notes: The panels in the figure display the results based on a regression of the form: $y_{it} = \alpha + \sum_{k \neq 0} \beta_k^1 Black_{ik} + \sum_{k \neq 0} \beta_k^2 Black_{ik} \times Dem_i + X_{it}\gamma + \theta_i + \tau_t + \varepsilon_{it}$, where the notation is the same as for Equation 2, and Dem_i is an indicator for whether firm i is located in a county that voted majority-Democrat in the 2016 presidential election. y_{it} represents each of five primary consumer demand and firm performance outcomes. Panel A presents the estimated coefficients for β_k^1 , and Panel B presents the estimated coefficients for $\beta_k^1 + \beta_k^2$. Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AIX: Heterogeneity in the Effect of the Label by Racial Attitudes

Panel A: Black-labeled (No implicit bias)



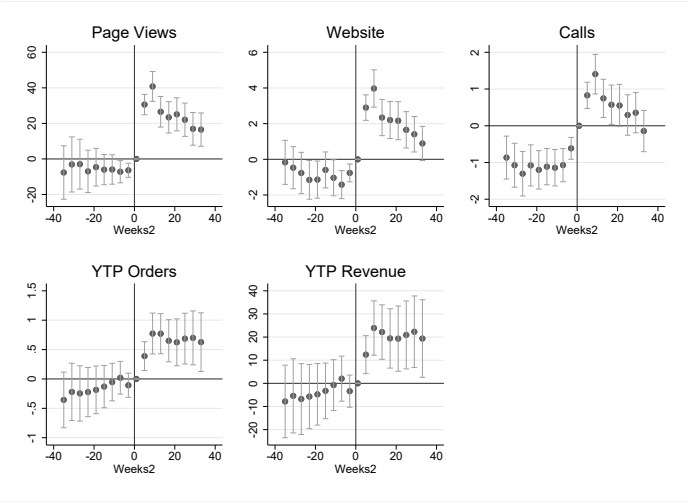
Panel B: Black-labeled + (Black-labeled × IAT score)



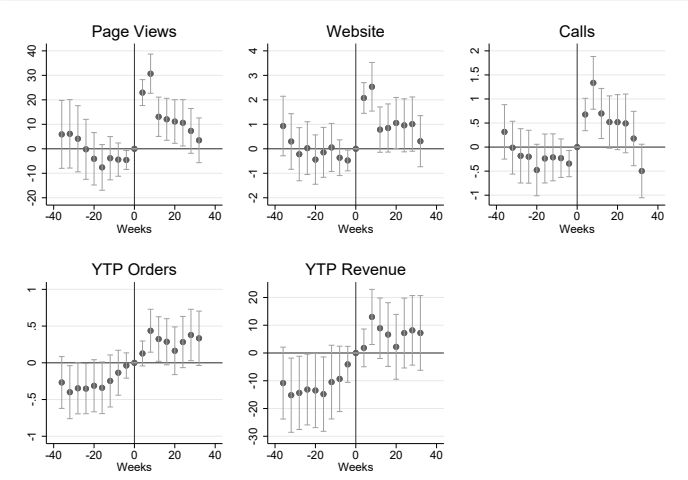
Notes: The panels in the figure display the results based on a regression of the form: $y_{it} = \alpha + \sum_{k \neq 0} \beta_k^1 Black_{ik} + \sum_{k \neq 0} \beta_k^2 Black_{ik} \times IAT_i + X_{it}\gamma + \theta_i + \tau_t + \varepsilon_{it}$, where the notation is the same as for Equation 2, and IAT_i is a zip code-level measure of implicit attitudes that are favorable towards White individuals, for the zip code in which firm i is located. y_{it} represents each of five primary consumer demand and firm performance outcomes. Panel A presents the estimated coefficients for β_k^1 , and Panel B presents the estimated coefficients for $\beta_k^1 + \beta_k^2$. Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Figure AX: Heterogeneity in the Effect of the Label by Firms' Ratings

Panel A: Above-median Ratings



Panel B: Below-median Ratings



Notes: The panels in the figure display the results based on a regression of the form: $y_{it} = \alpha + \sum_{k\neq 0} \beta_k^1 Black_{ik} + \sum_{k\neq 0} \beta_k^2 Black_{ik} \times Ratings_i + X_{it}\gamma + \theta_i + \tau_t + \varepsilon_{it}$, where the notation is the same as for Equation 2, and $Ratings_i$ is an indicator for whether firm i has above/below median Yelp ratings. y_{it} represents each of five primary consumer demand and firm performance outcomes. Panel A presents the estimated coefficients for β_k^1 , and Panel B presents the estimated coefficients for $\beta_k^1 + \beta_k^2$. Each panel also reports 95% confidence intervals. Standard errors are clustered at the business level.

Tables

Table AI: The Effect of the Label on Business Outcomes (Full, Unmatched Sample)

	(1) Page Views	(2) Website	(3) Calls	(4) YTP Orders	(5) YTP Revenue
	Panel A: All Black-owned Businesses				
Black-labeled	9.98***	3.01***	2.00***	0.76***	23.67***
	(2.69)	(0.31)	(0.15)	(0.11)	(3.52)
Observations	26,249,582	31,093,025	31,093,025	7,507,898	7,507,898
# of Clusters	271,102	271,150	271,150	59,405	59,405
Dep Var. Mean	50.79	3.18	2.23	1.67	51.93
	Panel B: Claimed Black-owned Businesses				
Black-labeled	17.58***	3.22***	1.88***	0.93***	29.75***
	(3.28)	(0.41)	(0.20)	(0.16)	(5.13)
Observations	26,249,582	31,093,025	31,093,025	7,507,898	7,507,898
# of Clusters	271,102	271,150	271,150	59,405	59,405
Dep Var. Mean	50.79	3.18	2.23	1.67	51.93
	Panel C: Reviewed as Black-owned Businesses				
Black-labeled	7.50*	3.95***	2.76***	0.93***	28.07***
	(4.19)	(0.47)	(0.23)	(0.15)	(4.86)
Observations	26,249,582	31,093,025	31,093,025	7,507,898	7,507,898
# of Clusters	271,102	271,150	271,150	59,405	59,405
Dep Var. Mean	50.79	3.18	2.23	1.67	51.93
	Panel D: Only Late Adopters Black-owned Businesses				
Black-labeled	15.49***	1.96***	1.23***	0.58***	17.80***
	(3.41)	(0.38)	(0.18)	(0.09)	(3.16)
Observations	26,146,380	30,971,612	30,971,612	7,433,658	7,433,658
# of Clusters	270,124	270,172	270,172	58,846	58,846
Dep Var. Mean	50.28	3.15	2.21	1.67	51.88
	Panel E: Only Late Adopters Reviewed as Black-owned Businesses				
Black-labeled	19.76***	2.30***	1.37***	0.78***	23.38***
	(6.01)	(0.59)	(0.29)	(0.17)	(5.62)
Observations	26,165,274	30,993,303	30,993,303	7,446,639	7,446,639
# of Clusters	270,325	270,373	270,373	58,951	58,951
Dep Var. Mean	50.35	3.15	2.21	1.67	51.89

Notes: This table presents OLS regression results relating firm outcomes to the adoption of the Black-owned business label in a difference-in-differences design (see description around Equation 1). $Black-labeled$ is an indicator for whether a restaurant is designated by Yelp as having a Black proprietor in a given week. The unit of observation is the business week. The dependent variables are the weekly number of Yelp restaurant page views (Column 1), the number of restaurant website views (Column 2), the number of calls to the restaurant via the Yelp online platform (Column 3), the weekly number of online orders (Column 4), and the platform-based revenue and weekly revenue (Column 5). All regressions include business and week fixed effects. Standard errors are in parentheses and are clustered at the business level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AII: Robustness to Heterogeneous Dynamic Treatment Effects

	(1) Page Views	(2) Website	(3) Calls	(4) YTP Orders	(5) YTP Revenue
	Panel A: TWFE With Heterogeneous ATTs (Wooldridge 2021)				
Black -labeled	22.83***	2.12***	1.10***	0.77***	22.83***
	(3.92)	(0.45)	(0.23)	(0.20)	(6.65)
Observations	2,525,648	2,986,628	2,986,628	460,756	460,756
	Panel B: "Stacked" DiD (Cengiz et al. 2019)				
Black-labeled	20.28***	2.50***	1.46***	0.70***	23.24***
	(3.70)	(0.44)	(0.22)	(0.17)	(5.51)
Observations	1,2065,995	14,281,228	14,281,228	1,925,918	1,925,918
	Panel C: Multiple Periods DiD (Callaway & Sant'Anna 2021)				
Black-labeled	19.55***	1.15***	1.58***	0.81***	23.02***
	(4.17)	(0.32)	(0.15)	(0.12)	(3.98)
Observations	208,350	208,350	208,350	32,835	32,835

Notes: This table presents robustness checks related to our main OLS regression in Panel A of Table II. All results relate firm outcomes to the adoption of the Black-owned business label in a DID design (see description around Equation 1). In Panel A, we modify our framework to use the two-way Mundlak (TWM) regression as described in Wooldridge (2021). In Panel B, we adopted the "stacked" DID, design in which data for teach treatment "episode" (defined in the text) is restacked before estimating our DID design, as in Cengiz et al. (2019). Finally, in Panel C, we account for treatment effect heterogeneity, as described in Callaway and Sant'Anna (2021). $Black-labeled$ is an indicator for whether a restaurant is designated by Yelp as having a Black proprietor in a given week. The unit of observation is the business week. The dependent variables are the weekly number of Yelp restaurant page views (Column 1), the number of restaurant website views (Column 2), the number of calls to the restaurant via the Yelp online platform (Column 3), the weekly number of online orders (Column 4), and the platform-based revenue and weekly revenue (Column 5). All regressions include business and week fixed effects. Standard errors are in parentheses and are clustered at the business level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AIII: The Effect of the Label on Businesses Not Labeled on Other Platforms

	(1) Page Views	(2) Website	(3) Calls	(4) YTP Orders	(5) YTP Revenue
	Panel A: Black-owned Businesses Not Labeled on EatOkra				
Black-labeled	16.06***	2.39***	1.34***	0.98***	30.04***
	(4.14)	(0.51)	(0.26)	(0.22)	(7.20)
Observations	1,716,192	2,029,493	2,029,493	280,403	280,403
# of Clusters	19,423	19,430	19,430	2,605	2,605
Dep Var. Mean	35.90	2.28	1.33	2.55	79.07
	Panel B: Black-owned Businesses Not Labeled on Google				
Black-labeled	15.55***	2.08***	1.28***	0.79***	24.22***
	(3.57)	(0.42)	(0.23)	(0.19)	(6.06)
Observations	1,796,710	2,125,258	2,125,258	324,893	324,893
# of Clusters	20,141	20,145	20,145	2,875	2,875
Dep Var. Mean	39.41	2.54	1.46	2.22	68.55

Notes: This table presents OLS regression results relating firm outcomes to the adoption of the Black-owned business label in a DID design (see description around Equation 1), excluding businesses labeled as Black-owned on other platforms. $Black-labeled$ is an indicator for whether a restaurant is designated by Yelp as having a Black proprietor in a given week. The unit of observation is the business week. The dependent variables are the weekly number of Yelp restaurant page views (Column 1), the number of restaurant website views (Column 2), the number of calls to the restaurant via the Yelp online platform (Column 3), the weekly number of online orders (Column 4), and the platform-based revenue and weekly revenue (Column 5). All regressions include business and week fixed effects. Standard errors are in parentheses and are clustered at the business level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AIV: Heterogeneity in the Effect of the Black-owned Business Label by Political Ideology (Continuous Vote Share)

	(1) Page Views	(2) Website	(3) Calls	(4) YTP Orders	(5) YTP Revenue
	Panel A: Majority Democrats (by County)				
Black-labeled	36.53***	1.98*	0.64	0.43	2.81
	(9.47)	(1.12)	(0.60)	(0.35)	(11.52)
Black-labeled × Perc. Dem.	-11.18	3.42**	2.52***	1.17**	53.58***
	(13.74)	(1.68)	(0.87)	(0.50)	(17.44)
Observations	2,115,499	2,502,000	2,502,000	392,098	392,098
# of Clusters	23,665	23,669	23,669	3,575	3,575
Number of Counties	32	38	38	9	9
Mean Majority Dem.	0.56	0.54	0.54	0.51	0.51
Dep Var. Mean	39.87	2.57	1.42	2.32	71.40
	Panel B: Majority Democrats (by Zipcode)				
Black-labeled	39.95***	2.38**	0.54	0.33	2.25
	(9.36)	(1.08)	(0.52)	(0.29)	(9.40)
Black-labeled × Perc. Dem.	-20.55	2.83*	2.82***	1.15**	50.96***
	(13.16)	(1.60)	(0.76)	(0.45)	(15.39)
Observations	2,522,108	2,982,465	2,982,465	459,481	459,481
# of Clusters	28,267	28,274	28,274	4,196	4,196
Mean Majority Dem.	0.72	0.72	0.72	0.74	0.74
Dep Var. Mean	38.47	2.50	1.34	2.06	63.52

Notes: This table presents OLS regression results relating firm outcomes to the adoption of the Black-owned business label, examining heterogeneity by pre-treatment political characteristics (a city or county Democrat vote share). $Black-labeled$ is an indicator for whether a restaurant is designated by Yelp as having a Black proprietor in a given week. Democrat is the vote share for the Democratic presidential candidate in 2016 in a county (Panel A) or zip (Panel B). Democratic vote share is determined by collapsing precinct-level returns from the Dave Leip's Atlas and MIT Election Lab to the relevant geographic level. The unit of observation is the business week. The dependent variables are the weekly number of Yelp restaurant page views (Column 1), the number of restaurant website views (Column 2), the number of calls to the restaurant via the Yelp online platform (Column 3), the weekly number of online orders (Column 4), and the platform-based revenue and weekly revenue (Column 5). All regressions include business and week fixed effects. Standard errors are in parentheses and are clustered at the business level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AV: Heterogeneity in the Effect of the Black-owned Business Label by Franchisee Status

	(1) Page Views	(2) Website	(3) Calls	(4) YTP Orders	(5) YTP Revenue
Black-labeled	21.39***	2.76***	1.37***	0.86***	26.10***
	(3.22)	(0.37)	(0.19)	(0.15)	(4.69)
Black-labeled × Franchisee	-11.63*	-2.83***	-1.92***	-0.06	-10.75
	(6.20)	(0.60)	(0.33)	(0.32)	(8.18)
Observations	2,526,484	2,987,471	2,987,471	460,756	460,756
# of Clusters	28,330	28,337	28,337	4,219	4,219
Dep Var. Mean	38.48	2.50	1.34	2.06	63.38

Notes: This table presents OLS regression results relating firm outcomes to the adoption of the Black-owned business label, examining heterogeneity by whether the restaurant is a franchisee. $Black-labeled$ is an indicator for whether a restaurant is designated by Yelp as having a Black proprietor in a given week. Franchise is a dummy variable indicating whether a restaurant is a franchise establishment associated with a parent restaurant. The dependent variables are the weekly number of Yelp restaurant page views (Column 1), the number of restaurant website views (Column 2), the number of calls to the restaurant via the Yelp online platform (Column 3), the weekly number of online orders (Column 4), and the platform-based revenue and weekly revenue (Column 5). All regressions include business and week fixed effects. Standard errors are in parentheses and are clustered at the business level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AVI: Heterogeneity in the Effect of the Black-owned Business Label by Cuisine

	(1) Page Views	(2) Website	(3) Calls	(4) YTP Orders	(5) YTP Revenue
	Panel A: Asian, European, and South/Central American Restaurants				
Black-labeled	16.39**	3.08***	1.38**	0.77*	26.63**
	(7.26)	(0.94)	(0.59)	(0.40)	(13.28)
Observations	452,454	493,797	493,797	158,731	158,731
# of Clusters	8,789	8,790	8,790	1,444	1,444
Dep Var. Mean	71.12	4.39	3.10	2.84	89.25
	Panel B: Asian and European Restaurants				
Black-labeled	27.20*	2.81	1.52	2.18***	74.99***
	(15.67)	(1.98)	(1.05)	(0.65)	(24.79)
Observations	274,705	299,243	299,243	97,071	97,071
# of Clusters	5,400	5,401	5,401	886	886
Dep Var. Mean	77.61	5.01	3.37	3.52	115.33

Notes: This table presents OLS regression results relating firm outcomes to the adoption of the Black-owned business label, examining heterogeneity by the type of cuisine offered by a restaurant. $Black-labeled$ is an indicator for whether a restaurant is designated by Yelp as having a Black proprietor in a given week. In Panel A, we limit restaurants to only those that (according to Yelp's type of food designation) offer food from either an Asian country or a European country. In Panel B, we limit restaurants to only those that offer food from either an Asian country, a European country, or a Latin American country. The dependent variables are the weekly number of Yelp restaurant page views (Column 1), the number of restaurant website views (Column 2), the number of calls to the restaurant via the Yelp online platform (Column 3), the weekly number of online orders (Column 4), and the platform-based revenue and weekly revenue (Column 5). All regressions include business and week fixed effects. Standard errors are in parentheses and are clustered at the business-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B Conceptual Framework

The main finding of the paper is that receiving the Black-owned label has a direct positive effect on restaurant demand. This result stands in contrast to previous research on online platforms, which finds that revealing minority ownership often has a negative effect on consumer demand. There are multiple potential explanations as to why the results in this setting diverge from previous findings. Below, we present a stylized model formalizing one potential mechanism.[41] The main idea of the model is that, unlike previous settings in which all users immediately became aware of minority ownership, in this setting, consumers had to actively learn about owners' race. The main result of the model is that specific types of users, particularly those with strong preferences towards owners' race, select into using the label. This self-selection can lead to positive effects of the label on Black-owned businesses, even when the average sentiment in the population is anti-Black.

B.1 Model

We describe a partial equilibrium model in which consumers have to decide whether to purchase a good or an outside option. Consistent with the empirical setting, we abstain from price-setting behavior and assume price remains fixed.

Formally, we assume there exists an economy with a set of consumers of measure 1 and a single good that generates baseline utility (net of price) of $u_i \sim N(0, \sigma_u) \equiv \Phi_u$. u_i represents a draw from the distribution of individual-level utility from purchasing the product. We normalize the baseline utility from the outside good to zero for all consumers. The product is produced by a Black-owned supplier with probability α, and the outside good is always produced by a non-Black-supplier. Consumers are endowed with a preference, v_i, toward Black-owned suppliers. For $v_i > 0$, a consumer has a preference for Black-owned businesses, and vice versa. We make the simplifying assumptions that v_i is a warm glow utility from supporting Black-owned businesses, and that consumers do not realize the utility benefit v_i if they do not know the owner's race with certainty. Thus, for $v_i > 0$, Black ownership increases the utility from the product to $u_i + v_i$, and for $v_i < 0$, Black ownership increases the utility from purchasing the non-Black product (the outside good) to $0 + v_i$. We assume that $v_i \sim N(\mu_v, \sigma_v) \equiv \Phi_v$, and is independent of u_i. We assume that $\mu_v < 0$, implying that the average sentiment in the

[41] Given the data we have, we are unable to assess the relative importance of this particular mechanism compared to alternative explanations.

population is anti-Black bias, consistent with previous research. Finally, each consumer knows their u_i and v_i with certainty.

We explore three different information environments: The baseline, is an environment with no information regarding owners' race. The second is the case where the owners' race is costlessly revealed to all consumers in the market. This resembles policies studied in previous research, which reveal suppliers' identities via names and photos. Third, to model the Black-owned label adopted by Yelp, we consider the case where consumers must actively search on the platform to learn about owners' race. In particular, we consumers pay a (hassle) cost, c, to learn about owners' race. The main assumption we make for this search technology is based on the fact that Yelp offers a filter to search for Black-owned businesses but does not offer a filter to search for non-Black-owned businesses. The only way for consumers to avoid Black-owned businesses is by first applying the filter to identify Black-owned businesses and then conducting a second search in which they ignore all the businesses previously identified as Black-owned. However, this process is likely to be significantly more complicated and demanding than simply searching for a Black-owned business. Accordingly, we assume that learning about an owner's race and then choosing a non-Black-owned business is going to entail a higher hassle cost to users, $c' > c$.

Lemma 1. *If consumers have, on average, anti-Black bias, then revealing Black-owned status to all consumers reduces the demand for Black-owned products compared to the baseline of no ownership information.*

Proof. At baseline, there is no ownership information, and consumers will only purchase the product if $u_i > 0$, which happens with probability $1 - \Phi_u(0) = 0.5$. Once ownership is revealed, consumers will only purchase if $0 < (u_i + v_i) \sim N(\mu_v, \sigma_u + \sigma_v) \equiv \Phi_{u+v}$. When $\mu_v < 0$ (i.e., the average consumer prefers non-Black products), consumers will purchase the product with probability $1 - \Phi_{u+v}(0) < 0.5$.

□

Lemma 2. *Assume that $c' - c$ is sufficiently larger than $-\mu_v$, then: Allowing consumers to learn about Black ownership increases demand for Black-owned products compared to the baseline of no ownership information, even if the average consumer has anti-Black bias.*

Proof. Starting with consumers with $v_i > 0$: if $u_i < -v_i$, then they will never purchase the product

(and will never search for the label); if $u_i > 0$, then they will always buy the product, as they did in the no-information case. Finally, a share $\{0.5 - \Phi_u(-v_i)\} \times \{1 - \Phi_v(0)\}$ of consumers with $-v_i < u_i < 0$ and $v_i > 0$ will search (and buy a Black-owned product) if $0 < \alpha(u_i + v_i) - c$, which happens with probability:

$$\{1 - \Phi_{u+v}(c/\alpha)\} \times \{0.5 - \Phi_u(-v_i)\} \times \{1 - \Phi_v(0)\} \tag{3}$$

Equation 3 represents the measure of consumers switching from the outside good to purchasing the product after actively learning about ownership. Similarly, we can derive the measure of consumers who would stop buying the product after revealing it is Black-owned; i.e., the share of consumers with $0 < u_i < -v_i$ and $v_i < 0$, who are are willing to engage in search:

$$P(u_i < \alpha(0 - v_i) + (1 - \alpha)(u_i) - c') => \{\Phi_{u+v}(-c'/\alpha)\} \times \Phi_u(-v_i) - 0.5\} \times \{\Phi_v(0)\} \tag{4}$$

Thus, the Black-owned product will experience a net increase in demand if the share of consumers searching and switching to the product exceeds that of the share of consumers searching and switching to the outside good. Formally, this occurs when the share in Equation 3 exceeds the one in Equation 4:

$$\{1 - \Phi_{u+v}(c/\alpha)\} \times \{0.5 - \Phi_u(-v_i)\} \times \{1 - \Phi_v(0)\} > \{\Phi_{u+v}(-c'/\alpha)\} \times \Phi_u(-v_i) - 0.5\} \times \{\Phi_v(0)\} =>$$

$$\frac{1 - \Phi_{u+v}(c/\alpha)}{1 - \Phi_{u+v}(c'/\alpha)} > \frac{1 - \Phi_v(0)}{\Phi_v(0)} \tag{5}$$

The LHS of Equation 5 decreases in c and increases in c', thus increasing in $c' - c$; and the RHS increases in μ_v. Hence, the condition holds when $c' - c$ is sufficiently large compared $-\mu_v$. □

Equation 5 also reveals the main forces driving the model. We first observe that if there is no anti-Black bias in the population $\mu_v = 0$ and the cost of searching for Black- and non-Black-owned businesses are the same $c' = c$, then both sides equal exactly 1. The RHS, which captures consumers' tendency to avoid Black-owned businesses and introduces more anti-Black bias in the population (decreasing μ_v), increases consumers' preference to avoid Black-owned businesses, reducing the effectiveness of

the label. The LHS captures the relative cost of avoiding Black-owned businesses. As c' increases compared to c, it becomes increasingly costly for consumers to discriminate against Black-owned businesses. At the extreme, if the label cannot be used to identify non-Black-owned businesses ($c \to \infty$), then the label will increase the demand for Black-owned business regardless of the mean anti-Black bias in the population.

C Data Appendix

C.1 Primary Data Sources

Our main analysis builds on data generously provided by Yelp. The company agreed to provide data on restaurants in only seven metropolitan areas, which were constructed based on the list of zip codes within each MSA. The metro areas in the sample were chosen to be large and diverse MSAs. They capture a relatively representative cross-section of urban America in terms of geography and demographic composition. The data cover a period of approximately two-and-a-half years, from April 2019 through August 2021. They consist of several files at the business and business-week levels. Business-level files contain time-invariant business characteristics such as restaurant location. Business-week data includes time-varying characteristics, such as ratings, attributes, consumer engagement metrics, and transactions through Yelp Transactions Platforms (YTP). From our experience working with Yelp data, we found that restaurants' opening and closing dates (i.e., entry and exit) are sometimes incomplete. When available, we use the data provided by Yelp. Alternatively, when the data is unpopulated, we use the first (last) date in which we find any positive engagement with a business, whether through Yelp or YTP, as its entry (exit) date, and code missing values as zeros.

Our three main engagement outcomes of interest are a restaurant's weekly number of page views, website visits, and calls. Notably, we only observe website visits and calls initiated through the Yelp platform. For reasons unknown to us, the vast majority of data on these three measures of engagement are missing from Yelp's records for the last three months of 2019. Yelp has not been able to provide an accounting of these missing months. For this reason, we omit these months when analyzing those outcomes. We note, however, that our results remain unchanged when they are included in the analysis.

Our two main business performance measures are YTP-based restaurant transactions: the number and value of restaurant orders made on the platform. YTP, launched in 2013 by Yelp, allows users to order from local restaurants. YTP operates as a part of the standard Yelp website but represents a subset of restaurants that consumers can browse on Yelp. These data on YTP transactions are much better populated, although only for this subset of restaurants that conduct such transactions.

Data for our explanatory variable of interest - the set of restaurants that are treated by Yelp's Black-owned Business label – are obtained from two different sources of Yelp information. First, for busi-

nesses claimed as Black-owned, the attributes dataset details the precise week at which a restaurant adopted the label. Second, and in contrast, for businesses reviewed as Black-owned by Yelp users, we only observe the month of review. In general, Yelp only labels a business as Black-owned after receiving at least two reviews mentioning Black ownership. To be conservative about classifying restaurants as "treated" by the label, we always code reviews as being received at the beginning of the month. If a businesses claims to be Black-owned and is also reviewed as such, we code the Black-owned label as the earlier of the two: either the self-claim or the second review. We also control the time between the first review as Black-owned to second review or claim, and allow for an additional differential impact of having just one review.

C.2 Supplementary Data Sources

We collect additional data sources to both examine robustness and to explore channels. To identify the impact of the minority-owned business label, relative to minority-owned businesses that were not labeled on the Yelp platform, we use the 2019 National Establishment Time-Series (NETS) dataset. We restrict attention to businesses labeled as part of the food industry (according to their NAICS) and identify all businesses on our sample zip codes labeled "Minority-owned." These businesses are matched using Stata's reclink command on business (cleaned) name, address, and exact match on zip code. We use a cutoff of 0.85 match score. We are able to confidently match 240 businesses with the Yelp data.

Because the Yelp data on outcomes captures only a subset of economic activity related to customer demand and performance, we wanted to explore the effect of the label off the Yelp platform. To this end, we use data from SafeGraph, which provides anonymous aggregated mobile phone location data collected from devices in the United States. Specifically, SafeGraph collects and manages points of interest (POIs) in the United States (e.g., latitude and longitude, physical address, and postal code). We use Safegraph data to obtain the number of weekly visits to each POI. We explore three alternative methods to match between the Yelp and Safegraph data: (1) two decimal longitude-latitude, zip code, and fuzzy name (above 0.8); (2) zip code, and slightly looser coordinate matching (one decimal) and name (above 0.5); and (3) also adds zip code and fuzzy street name and name (above 0.5). In addition, since this analysis examined the effect on a different, off-Yelp, outcome, we rematch the date using weekly visits pre-levels.

The analysis of the sample of Latinx-owned businesses is constructed from the raw data, similar to the Black-owned sample. The main difference is that Yelp doesn't allow users to review a business as Latinx-owned; thus, the labels are based solely on businesses self-claims. The analysis of the Wayfair intervention is described in detail in Appendix D.

Heterogeneity by neighborhood demographics is based on the Zip Code Tabulation Area (ZCTA)-level demographic information in the American Community Survey (ACS) 2015, using the fraction of Black residents. We collected reviewers' public profile photos from the platform. Since the Yelp website does not search by address, we instead used Google search. In particular, for each business in our sample, we search Google using the name and exact address to find its Yelp page. When we could not find a perfect match, a research assistant manually checked whether the search results match the business. Then, for each business, we collected all of the reviews left via Yelp. We obtained more than one million profile pictures, which were then fed into the DeepFace facial recognition using Python, as described in subsection 2.2 of the main text.

Heterogeneity based on political ideology comes from voting data in the 2016 Presidential election. Matching voting data across datasets is challenging, as voting precincts do not perfectly align with either counties or zip codes. We thus rely on two sources. First, we use county measures of political identity based on the Election Atlas (Leip, 2019). We use these data to calculate county-level vote share, which we then use to classify each geography as majority Democratic or Republican. We also rely on more finely grained measures of *estimated* political identity at the zip-code level from the American Ideology Project, created by (Tausanovitch and Warshaw, 2022). AIP's estimates of political preferences by zip code incorporate survey respondents' demographics and geography to estimate subcounty levels of candidate vote share and public opinion.

C.3 Matched Subsample

To mitigate threats to identification, our preferred empirical strategy relies on the selection of a matched control restaurant for each restaurant that adopts the Black-owned business label. To systematically choose a set of non-Black-owned businesses that is comparable with the set of Black-owned businesses, we implement a Coarsened Exact Matching (CEM) procedure. We then used this matched sample to run our DID models. This design is similar in spirit to several recent papers, such as Azoulay et al. (2010) and Sabety (2022).

To capture both vertical and horizontal measures of differentiation, we base the matching on several predetermined characteristics. First, to control for quality, we use restaurants' Yelp Star Ratings, which are based on the average cumulative Yelp user rating. Since ratings may be directly affected by the introduction of the label, we use the rating at the week prior to the introduction of the label. We coarsen the average rating to the nearest star, also allowing for no star rating in the pre-period. Second, to control for differences in the services offered by restaurants, we include an indicator for whether a restaurant offers delivery during our sample period. This measure is based both on delivery directly through YTP, as well as other channels, as indicated by restaurants' attributes. Third, since Yelp does not collect chain status for its restaurants, we impute a chain restaurant status indicator based on whether a restaurant's name appears ten or more times in the data. Fourth, to control for other, unobserved restaurant-level characteristics, we also match on pre-label performance levels.

Since YTP orders and revenue move similarly, we match only on the weekly number of orders. Similarly, for our measures of consumer engagement, we focus on the measure of general interest in a business, number of page views. Since these measures tend to be noisier, and in order to alleviate concerns about reversion to the mean, we use levels well before the label was introduced. In particular, we use the numbers in March 2020, almost four months before the label was originally launched. We then coarsen the variable into three levels based on the median and 90th percentile (for YTP orders we add a fourth level for businesses not participating in the service). Finally, and perhaps most restrictively, we control for special heterogeneity by precisely matching on restaurants' five-digit zipcodes.

As we show in Table I, the raw Yelp data include almost 300,000 business in over 4,000 zip codes. After coarsening our main variables, we divide the full sample into 64,000 unique stratas. Of these, we are able to match within 1,091 stratas, which account for approximately 65% of businesses ever labeled as Black-owned. We calculate the matching weights, which are then used for our main specification. In addition, each time we restrict the analysis to a subsample, such as late adopters of only reviewed-as-Black-owned businesses, we drop any unmatched businesses and recalculate the matching weights for the relevant subsample.

D Wayfair Black-owned Label

Setting

We seek to explore the generalizability of our findings beyond our main context by exploring the impact of a Black-owned label in a different setting. Specifically, we examine the effect of Wayfair's launch of a similar label that identifies Black small business owners – in this case, furniture suppliers. Wayfair is one of the ten largest e-commerce websites in the United States and focuses on selling furniture and home goods online.

During the first week of February 2023 (over two-and-a-half years after the launch of Yelp's Black-owned business label), Wayfair launched a Black-owned Business label, "Black-owned or Designed," on its website. The launch of the label was accompanied by an informational campaign on social media outlets such as LinkedIn and Facebook, as well as via mass emails to Wayfair customers. The label is presented at the top of the product pages of each one of the products affiliated with the particular seller. Wayfair users are able to search specifically for Black-owned products using the free text search bar or use the Black-owned filter to refine their search results. Unlike Yelp, Wayfair actively verifies, through video calls and third-party verification, that the products are Black-owned or designed. In total, the treated Wayfair sample included approximately 30 sellers with over 18,000 unique products.

Data & Design

Wayfair provided us with limited access to administrative sales and customer engagement data to evaluate the effectiveness of its Black-owned business label. The time period of our data from the company spans the first four months of 2023. For each seller (treated and control units), we observe (1) the total number of page visits of all products sold by the supplier in a given week (engagement) and (2) the total weekly revenue on the platform. We note that no identifiable information of customers or suppliers was shared with the research team. In addition, to protect sensitive business information, raw numbers were divided by the mean weekly engagement or revenue of all sellers in the pre-period, the first four weeks of 2023. Using this data, we conduct a similar analysis to the main specification as described in Equation 1. Each observation represents a supplier-week combination, and standard errors are clustered at the supplier level. As with the Yelp sample used to conduct our primary analyses, we select control suppliers using a Coarsen Exact Matching algorithm that includes the number of orders, active unique products, and total products' webpage visits in the first month of 2023. The final sample consist of 1,464 businesses, of which 21 are labeled as Black-owned or designed, selling almost one million unique items.