

CUSTOMER DISCRIMINATION

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April 2009

Abstract: We test for customer discrimination with data from more than 800 retail stores employing over 70,000 individuals matched to Census data on the demographics of each store's community. While our tests detect some increase in sales when the workforce more closely resembles potential customers, the effects we find are modest in magnitude. Customer discrimination is neither strong nor pervasive. We find little payoff to matching employee demographics to those of potential customers except when the customers do not speak English.

JEL codes: J7, K31, L23

Keywords: Racial discrimination, customer discrimination, organizational performance, labor law

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Acknowledgements: We thank the employer for providing the data, BOLD, Thomas Kochan, and the U.C. Berkeley Institute of Industrial Relations for financial support. Comments from Florian Zettelmeyer and seminar participants at U.C. Berkeley, UCLA and the University of Massachusetts were helpful.

Decades after employment discrimination was outlawed by the Civil Rights Act of 1964, the CEO of Shoney's Inc. personally investigated one of its restaurants because it suffered from lagging sales. Noticing many black employees in visible positions and many white customers, he directed the restaurant manager to employ more whites up front so as to increase sales (Watkins, 1997). How well founded is this CEO's perception of customer discrimination, and how important is customer discrimination in explaining differences in the product and labor markets?

Economic theory suggests that in perfectly competitive markets, discrimination by managers to satisfy their personal preferences reduces profits (Becker, 1957). In contrast, discrimination to satisfy customers' preference can increase profits. Customer discrimination is potentially an explanation for the persistence of discriminatory employment practices. Shoney's CEO's directive can be read as telling his managers that they have failed to comply with the implication of Becker's model: if customers discriminate, sales and profits can be increased by segregating workforces and matching them to potential customers.

Such cases of discrimination, supposedly on behalf of customers, are not isolated. The court records are replete with judicial findings of employment discrimination in the retail sector, where the race and sex of employees is readily observed by the public.¹ This paper asks whether Shoney's CEO was correct: do customers impose a sales penalty on firms that are "too black," "too Hispanic," or "too Asian"?

We employ longitudinal evidence from more than 800 similar business establishments of a single large employer to examine how the change over time within establishment in the demographic match between customers and employees affects performance. Our measure of workplace performance is an objective one of central importance to business: sales. These establishments are all retail outlets of one corporation. As a matter of corporate policy, the company pursues a uniform brand image. This cloning policy serves as the econometrician's ally, reducing potentially

confounding heterogeneity that might otherwise affect sales. Within this single chain, we examine how changes over time in workplace demographics affect sales within a store.

In theory, profit-maximizing managers should select employee demographics to have no effect on profits at the margin. The starting point for our analysis are two facts: 1) store employee demographics are far from segregated; and 2) store demographics change substantially over time in contrast to the relatively stable demographics of surrounding communities. Over the two and a half year period we observe them, the employment shares of women, blacks, Hispanics, and the young (<24 years) will change by more than ten percentage points in 29, 21, 12 and 52 percent of establishments respectively. If these employers are aiming at a Beckerian optimum, they must often be missing. Store demographics change much more rapidly and frequently than that of their surrounding neighborhoods. Differencing out unchanging store and neighborhood characteristics, we use these changes within establishment over time to test whether changes in employee demographics affect sales.

The ability to understand a common language provides an additional reason why matching employee demographics to that of customers may raise sales. We analyze Hispanics² and Asians who speak English versus those who do not, to test the importance of employee-customer similarity when language is a potential barrier.

Our tests can and do detect significant differences in sales along some demographic dimensions. Sales fall over time in establishments that become blacker in white neighborhoods, and in establishments with some language mismatches. While our tests can detect the impact of mismatch on sales, the effects we find are modest in magnitude compared to the usual fluctuations in sales. More often we find that customer discrimination is neither strong nor pervasive.

I. Previous Work

Customers might prefer demographically similar employees because of discrimination, as in Becker's classic 1957 theory of segregation. Separately from its effects on preferences, racial similarity might also improve communication (Lang, 1986; Jackson and Alvarez, 1992; Cox, 1993). In settings such as the one we study, employees may also attract customers using connections within the community (Cox, 1993; Ibarra, 1992, 1995)³.

Communication costs grow when a large number of potential customers do not speak English well. Although most immigrants learn English rapidly (Friedman and DiTomaso, 1996), large immigrant enclaves in many cities contain a substantial number of people who cannot or prefer not to speak English. These can lead profit-maximizing employers to desire a workforce that appears demographically similar to its customers. Costly search for customers leads to the hypothesis that sales are higher when workforce demographics are similar to customer demographics, notwithstanding the legal risk incurred by discriminating in employment.

The empirical literature suggests that employers in the retail and service sectors often act as if customers discriminate, even though the evidence of customer discrimination is mixed. A number of studies find employers trying to match employee to customer demographics. Newly hired low-wage workers who have direct contact with customers are more likely to match the demographics of those customers than are new hires who have no customer contact (Holzer and Ihlanfeldt, 1988). Moreover, about 20 percent of urban low-wage employers feel their customers dislike black service providers, and such employers are much less likely to hire black men (controlling for the racial mix of applicants and of customers (Moss and Tilly 2001: 146-7; Holzer 1999). More broadly, employers as different as federal agencies (Borjas, 1982) and restaurants (Neumark, 1996) have been shown to hire workforces that approximate that of their clients. However, not all studies reach this conclusion. For example,

Raphael, Stoll and Holzer (2000) find that the probability that blacks experience hiring discrimination is not greater in the (whiter) suburbs than in central cities.

There is much less evidence regarding the impact of such a hiring strategy on business performance. Although the judicial record makes clear that some employers act as if customers discriminate, few academic studies measure how customer discrimination affects sales.⁴ One particularly compelling exception, related to ours in concept, studies customer discrimination in professional sports. White basketball players attract more fans than do black players of similar quality (Kahn and Sherer, 1988). Kahn (2000) reviews the literature showing own-race preferences by consumers in the sports entertainment market. Waldfogel (2003) shows evidence of own-race preferences in television broadcasts. In a study of tipping by taxi customers, Ayres et. al. (2005) finds that within the same locale, black taxi-drivers are paid less in tips than are white drivers. In the market for housing, consumers preferences for own-race neighbors are shown in a number of studies, including Vigdor (2003) and Card, Mas and Rothstein (2008). A few small-scale studies in the marketing literature offer a mixture of results with no clear pattern that sales are higher when customer and employee demographics are similar (e.g., contrast Churchill, Collins, and Strang [1975] with Dwyer, Richard, and Shepherd [1998]). It would be useful to know how far these results generalize.

II. Model

This section lays out an illustrative model of the effects of customer discrimination. The model is radically simplified to highlight a few points relevant to the sector we study. To reduce notation, for this section assume only two races: white and black.

Demand for sales

As in Becker's (1957) model of customer discrimination, assume that consumers prefer to purchase from same-race employees. In this chain, prices are fixed across stores. Therefore, when potential customers face a decision of whether to purchase at a store, that purchase is more likely if there are more same-race employees. Suppose that each individual i purchases α_{ij} from store j with probability p . Individual demand α_{ij} depends on the consumer's preferences, income, and distance to the store. Let p be equal to one if all employees in the store are the same race as the employee, but lower if there are fewer same-race employees. Specifically:

$$\begin{aligned} p_{ijt} &= 1 - \beta (\% \text{employees in store } j \text{ at time } t \text{ whose race is different from consumer } i\text{'s}) \\ &= 1 - \beta + \beta (\% \text{employees in store } j \text{ of consumer } i\text{'s race})_{ijt} \end{aligned}$$

Then we have the following equation for individual-level sales S to consumer i in the catchment area of store j in month t :

$$1. \quad S_{ijt} = \alpha_{ij}(1 - \beta) + \alpha_{ij} \beta (\% \text{employees in store } j \text{ of consumer } i\text{'s race})_{ijt} + u_{ijt}$$

Total demand from consumers in the catchment area of store j (S_{jt}) is the sum of the individual demand curves. Let N_j be the number of consumers in store j 's catchment area, and let α_j be the average (potential) purchase at store j . Assume that α_{ij} is not correlated with consumer race. Then, with W_c and $B_c (=1-W_c)$ measuring the proportion white and black in the community catchment area of the store⁵, and with w_{jt} and $b_{jt}, (=1 - w_{jt})$ representing the share of each race among the employees in store j month t total demand is:

$$2. S_{jt} = \sum S_{ijt} = N_j \alpha_j (1 - \beta) + N_j \alpha_j \beta (W_c * w_{jt} + B_c * b_{jt})$$

which can also be written:

$$3. S_{jt} = N_j \alpha_j - N_j \alpha_j \beta (W_c + w_{jt}) + 2 N_j \alpha_j \beta (W_c * w_{jt})$$

Supply of employees

In Becker's model of customer discrimination, stores segregate and only hire employees that match the most common expenditure-weighted customer group in the community. In practice, segregated stores are rare. There are multiple reasons why a store may not segregate its workforce. First, segregated stores are liable to face litigation. The probability of litigation rises (at an increasing rate) as the racial composition of the store moves away from the composition of its local labor market. The chain we study explicitly instructs managers not to discriminate. Second, managers have median tenure of less than a year at the store; too short of a period to estimate the optimal racial composition of employment. Third, the costs of hiring (or of vacancies when hiring takes a long time) rise if the desired employment mix of new hires differs from the mix of those who would naturally apply for jobs. Again, the cost of divergence rises at an increasing rate as the racial composition of the store moves away from the composition of its local labor market. For example, assume a store manager decides to turn down a qualified applicant of a race that fewer customer prefer and risk a vacancy while waiting for an applicant that matches more customers' preferred race. In low-wage retail, a few vacancies are easy to accommodate as many workers work irregular shifts. As the vacancy rate rises, though, the costs of shuffling shifts and of regularly putting employees in their less-preferred times

risers. As the racial composition of the store moves away from that of applicants, it is increasingly costly to replace all of the exits with applicants of a specific race.

This suggests modeling⁶ the costs of having a workforce of composition w_{jt} as increasing at an increasing rate as w_{jt} diverges from the flow of applicants from the local labor market w_{Ljt} :

$$4. D_{jt} = d * (w_{jt} - w_{Ljt})^2.$$

Profit maximization

We assume the goal of the store is to set its share of white and of black employees (w_{jt} , and $b_{jt} = 1-w_{jt}$) to maximize profits. Profits, in turn, equal a mark-up (μ) times sales minus employment costs. In this firm there are no economically meaningful racial or ethnic wage gaps among employees hired the same month at the same branch. Thus the relevant employment cost is given by eq. 4, and profit is:

$$5. \pi_{jt} = \mu S_{jt} - D_{jt}$$

$$= \mu(N_j \alpha_j - N_j \alpha_j \beta (W_c + w_{jt}) + 2 N_j \alpha_j \beta (W_c * w_{jt})) - d * (w_{jt} - w_{Ljt})^2.$$

The first order condition is:

$$6. w_{jt}^* = w_{Ljt} + (\mu N_j \alpha_j \beta (2W_c - 1)) / 2d$$

The store will hire employees so that its labor force composition is roughly equal to its labor market (w_{Ljt}), but hire more whites than the labor market if whites are the majority of potential customers ($W_c > 1/2$) and hire more blacks than the labor market if blacks are a majority of the potential customers.

Customer demographics are more important when demographics affect sales strongly (large β), when sales affect profits strongly (large μ) and when it is inexpensive to hire a workforce that diverges strongly from the applicant pool (small d).

The comparative statics implied by equation (6) are clear: If a store has an increase in the applicant flow from a specific group (e.g. blacks) over the next few months the store will move to its new preferred composition w_{jt}^* [from equation 6] that reflects this shift in the applicant pool. The increase in black employment when black application rates rise is profit maximizing in all stores. Nevertheless, the increase in black employment will raise sales in majority black communities but harm sales in majority white communities (see equation 3)⁷. More generally, equation 3 tells us that the sales change depends on the product of the change in black employment and the community percent black. Our estimation focuses on the effects on sales of this changing match between employees and potential customers.

From theory to estimation

We observe in data from the 1990 U.S. Census the white and black share in the ZIP codes surrounding each store (w_c and b_c), which we assume is an approximation to the true community customer base,

$$w_c = W_c + e_c,$$

and similarly for b_c . We assume the residual e_c is well behaved.

Our analysis examines each month's change from its level a year earlier, or twelve observations of changes for each establishment each year. For example, one observation might be June 1998 minus June 1997. This difference in monthly data one year apart removes seasonal effects and

all fixed characteristics of the establishment, its community, and its potential customers, including the unobserved sum of the community's idiosyncratic demand for this chain's product ($N_j\alpha_j$ in equations 2 or 3). The estimates adjust for auto-correlated errors. We also replace the demographics of the true catchment area with those measured in the Census (represented by lower-case letters). Because the Census data provide an imperfect measure of the demographics of the true catchment area there will presumably be some attenuation bias in our estimates of β . This yields the difference equation that forms the basis for our estimates:

$$7. \Delta S_{jt} = N_j \alpha_j \beta (W_c * \Delta w_{jt} + B_c * \Delta b_{jt})$$

Or:

$$\Delta S_{jt} / N_j \alpha_j = \beta (W_c * \Delta w_{jt} + B_c * \Delta b_{jt})$$

In words: holding all else equal, sales increase more when a store's workforces become more black in a highly black community than in a highly white community (and conversely for increases in white employment). On the left-hand side of this equation, we have the change in sales divided by the scaling factor $N_j\alpha_j$. The denominator is what total sales would be in the absence of customer discrimination (if $\beta=0$ or if there were no racial differences). The empirical work estimates the change in log sales, which is approximately equal to the percent change in sales.

Our estimated equation extends this model to include the Hispanic (h) and Asian (a) racial groups:

$$8. \Delta S_{jt} / N_j \alpha_j = \beta (w_c * \Delta w_{jt} + b_c * \Delta b_{jt} + h_c * \Delta h_{jt} + a_c * \Delta a_{jt})$$

Extensions

In this section we discuss several extensions to the basic model.

Preferences for same-race employees that vary by race

We can relax the assumption that the strength of preference for same-race salespeople is identical for all races by letting the coefficient β in equation 1 differ by race. Allowing white preference for whites β_w , to differ from black preference for blacks β_b , etc yields a more general⁸ estimating equation:

$$9. \quad \Delta S_{jt} / N_j \alpha_j = \beta_w (w_c * \Delta w_{jt}) + \beta_b (b_c * \Delta b_{jt}) + \beta_h (h_c * \Delta h_{jt}) + \beta_a (a_c * \Delta a_{jt})$$

Who buys from whom?

In equation (9), the change in sales to whites depends on the change in the white share of the store: $\beta_w (w_c * \Delta w_{jt})$. This can also be written: $\beta_w (w_c * \Delta (1 - b_{jt} - h_{jt} - a_{jt}))$. That is, the specification imposes the restriction that whites like to purchase from whites, but are equally averse to buying from all others races. We can relax the assumption that whites avoid all other races equally by expanding the several interactions of white share in the community with each of the other races' changing share in the store:⁹

$$10. \quad \Delta S_{jt} / N_j \alpha_j = \beta_{wb} (w_c * \Delta b_{jt}) + \beta_{wh} (w_c * \Delta h_{jt}) + \beta_{wa} (w_c * \Delta a_{jt}) \\ + \beta_b (b_c * \Delta b_{jt}) + \beta_h (h_c * \Delta h_{jt}) + \beta_a (a_c * \Delta a_{jt})$$

This specification allows us to estimate whether whites treat different minority groups differently.

Main Effects of Racial Employment Shares

In some models of status and identity potential customers of all races may prefer to be served by employees of a particular race whose status is high and/or appropriate for jobs such as these. In that case, there can be main effects on racial shares in the store, with a positive main effect reflecting cross-race customer preferences. Similar results hold if some races routinely attend schools of higher quality, for example. To control for these possibilities, we also include main effects on racial shares in our estimating equations.

III. The Setting

Studies of employment are plagued by unmeasured differences in policies, practices, and working conditions across different employers. To test the effect of employment demographics on performance, an ideal experiment would randomly vary demographics while holding all other possibly confounding factors fixed. We examine over 800 workplaces with over 70,000 employees of a single large service-sector employer.¹⁰ The low-wage retail sector is known for its short job spells. We exploit the fact that store demographics do change over time within store at a much shorter frequency and to a more dramatic extent than population changes. The workplaces in this study hire the equivalent of roughly three entire workforces a year, as is standard in entry-level jobs in this sector. As a result, store demographics change much more frequently, rapidly, and substantially than do community demographics. In a twelve-month period, the proportion of employees in an establishment who are female, black, Hispanic or below age 24 will change by more than ten percentage points in 22, 15, 9, and 40 percent of establishments respectively. Given the relatively slow changes in community population, any claim that one month's store demographics perfectly matches its community is undercut by the changing establishment demographics.

As in all workplace studies to date, the employer did not allow us to randomize employee demographics. But our design does minimize unmeasured differences across workplaces. Retail chains, as a matter of policy, seek to reduce heterogeneity across locations. This employer has purposefully attempted to replicate the same outlet characteristics in every U.S. market of significance, as is common among national chains that promote a brand image. In most field studies, demographics are correlated with other features of the workplace or job. The workplaces in our study, however, exhibit little of this variation. Each workplace has minimal local discretion, as each must implement the detailed policies set by corporate headquarters. Occupational structure, internal hierarchy, fringe benefits, and job content are for the most part centrally set and uniformly implemented. Wages do not vary meaningfully with the racial composition of the workforce. Prices do not vary with the racial composition of the community. The employer imposes few hiring prerequisites. Educational requirements are minimal, and educational attainment varies little. Corporate uniformity extends well beyond HR policy. Advertising, product selection, and pricing are all centrally determined to promote uniformity. The employer's goal is that customers and employees perceive workplaces in different locations as essentially interchangeable. This standardization limits possible confounds between demographics and omitted job, product, or establishment characteristics.

Establishments operate in different local labor and product markets. Our estimates are one-year differences of monthly data on sales and store demographics. All fixed location-specific factors, measured or not, of the workplace, labor market, and customers that may affect both demographics and sales are differenced out. In addition, dispersion in sales per employee across establishments should be reduced by entry into lucrative markets and exit from poorly performing ones.

The employer is in an industry characterized by numerous small outlets that sell somewhat differentiated products. Each workplace we study is company owned and operated, and typically employs 15 to 40 part-time employees with one full-time store manager and one or more assistant managers. Because employees work scattered shifts through the week, they work with a changing mix

of the other employees. Most frontline employees rotate through the several tasks in the store, spending some of their time dealing with customers and other time in support tasks. Non-managerial employees receive minimal training when they are hired. These employees interact with each other to maintain stock and service customers, but these interactions are not complex. The Taylorist production techniques, with highly centralized decision making and limited local discretion, may limit the potential impact of any employee differences on productivity.

Empirically, total factor productivity (that is, sales adjusted for employees, size in square feet, and the many observable characteristics of the workplace and community listed in Table 2) varies substantially across workplaces. Overall, a fourth of the variation in sales remains even after adjusting for observable features of the workplace and community. Thus, even with this company's standardization, organizational factors have room to affect sales.¹¹

Data and Variables

We combine employee-level data on demographics, store-level data on sales, and data from the 1990 Census on community characteristics. We use monthly data over a 30 month period at the establishment level on both sales and on employee demographics to calculate one year changes.¹² By construction, this holds seasonal factors fixed. For each establishment and month we regress the one year change in the natural logarithm of real sales on variables showing the change in employment share by demographic group, and on variables interacting these changes in employment share with the levels of community demographics.

Store-Level Variables

The employee data are the complete personnel records from February 1996 to July 1998. We analyze data on frontline workplace employees, dropping workplaces with fewer than ten employees.

We organize the data into store-month observations. From the company's human resource database, we construct a store-month dataset of employee demographics, including the proportion female, average age, and the shares of four categories for race or ethnicity (black, Asian, Hispanic, and white). The race and ethnicity codes are the company's coding, and they create a set of mutually exclusive and collectively exhaustive categories that for simplicity we refer to as "race."

We also control for a rich set of store characteristics including store age and its square, time since the last store remodel and its square, store size (measured in square feet) and its square, employment growth, and variables indicating if the store is on the street, a commercial strip, or in a mall.

Community Variables

To construct community demographics, we use each store's ZIP code to identify a zone of "nearby" Census tracts, defined as those in its ZIP code or within two miles of the centroid of its ZIP code. We then merge 1990 Census data for this zone to each store. We construct the proportion black, Hispanic, and Asian surrounding each store using Census data. The employer has mutually exclusive codes of white, black, and Hispanic (as well as Asian). The 1990 Census asks questions on race (black vs. white, etc.) separately from ethnicity (Hispanic vs. non-Hispanic). Thus, on the Census, respondents can categorize themselves as both black and Hispanic or as both white and Hispanic.

Because of the advantage that may arise from speaking the language of customers who do not speak English, we test whether the presence of Hispanic (or Asian) employees predicts higher sales when many nearby residents are Hispanic (or Asian) and do not speak English. We examine the impact of the share of Hispanic employees interacted with the share of nearby residents who speak Spanish but not English. We also examine the share of Asian employees interacted with the share of residents who speak Asian-Pacific languages but not English. Our estimates will understate the

benefits of employees who speak the language of linguistically isolated customers to the extent employees who self-identify as Hispanic do not speak Spanish. Similarly, Asian employees who speak an Asian language may not share a common language with all non-English-speaking immigrants from Asia in the community.

IV. Results

Summary Statistics

Table 1 presents summary statistics. The employer hires a diverse workforce.¹³ The customer base contributes to, but does not fully determine, workplace composition. These are entry-level jobs; the stores are more black, more Hispanic, more Asian, more female, and younger than their communities. The mean age of employees in our data is only 24 years. The racial composition of the stores is correlated with the composition of the community. For example, the white shares are correlated at 0.67.

Nevertheless, substantial variation remains across and within stores. Racial employment shares vary substantially over time. The standard deviation of the year-on-year change in percent black, Hispanic and Asian are all 5 to 7 percentage points – at least 2/3 of each group’s mean level. Importantly, trend changes in the racial composition of employees are essentially uncorrelated with community demographics.

Employee-Customer Match

Table 2 shows the estimated impact of the match between community and store demographics in a set of estimates that allow increasingly more complex interactions, following eq. 8 (in col. 1), eq. 9 (in col. 2) and eq. 10 (in col. 3). The dependent variable is the year-on-year difference in the natural

logarithm of real monthly sales. In Column 1, the coefficient on “Sum of Interactions” shows the effect of the sum of racial interactions from eq. 8 (This equals $(\Delta\text{Store \%White}) * (\text{Comm. \%White}) + (\Delta\text{Store \%Black}) * (\text{Comm. \%Black}) + (\Delta\text{Store \%Hispanic}) * (\text{Comm. \%Hispanic-all races}) + (\Delta\text{Store \%Asian}) * (\text{Comm. \%Asian})$). The estimate in col. 1 provides no support for the hypothesis that, across all races of customers, customers prefer to purchase from members of their own race. The coefficient is both small and insignificant. Note also that the main effects of employee demographics, apart from age, are insignificant.

Column 2 tests for own-race preference separately within each race, allowing the strength of this own-group preference to differ within each race. The estimated effects are insignificant jointly and individually. A Chi-squared test does not reject the restriction that these effects are equal across groups, as imposed by the specification in col. 1. On the basis of these first two regressions, matching employee demographics to that of potential customers generally has little impact on sales.

A more subtle impact becomes apparent when we relax the restriction that whites do not distinguish among different minority groups. Column 3 allows whites to respond differently to different minorities. The responses of white communities to different minority groups are significantly different. In highly white communities, sales fall significantly in stores that increase black employment shares, but sales increase significantly in stores that increase Hispanic employment shares. These estimated effects are modest in magnitude, and tend to offset each other (leading to the small and insignificant effect on $(\Delta\text{Store \%White}) * (\text{Community \%White})$ in col. 2). An establishment in an average community that increases its Hispanic employment share by one standard-deviation (6%) above the mean experiences about a two percent increase in sales ($= .47 * .06 * .80$) through the interaction with the white customer base. If it increases its black employment share by one standard-deviation (7%), sales decrease by about two percent. These impacts are not dramatic compared to the normal fluctuations in sales.¹⁴ For reference, the standard-deviation of changes in sales is 18 percent. In addition, in this specification sales increase modestly but significantly in Hispanic communities

when Hispanic employment share increases. A one standard-deviation increase in Hispanic employment share in a community with an average Hispanic population share increases sales by about 2 percent ($=.64*.06*.046$). These gains tend to be offset in mixed communities. The significantly positive impact on sales of increasing Hispanic employment shares in Hispanic and in white communities (col. 3), when considered alongside the overall negligible and insignificant impact in col. 2, suggests that increasing Hispanic employment shares hurts sales in Black and/or Asian communities.¹⁵ Curiously, increasing Asian employment shares appears to reduce sales in Asian communities, but this effect will be offset once we take language into account. This is not evidence of strong and undifferentiated discrimination towards all minorities.

These modest impacts do not appear to be the result of stores coming close to perfectly matching customer demographics. Store demographics change too much and too quickly to be explained as responses to changing community demographics.¹⁶

Immigrant Enclaves

Mutual incomprehension would seem to offer an ideal case for segregation. If customer discrimination and segregation models are going to be important anywhere, one would think they would be valuable in the case of groups that cannot converse with each other. Column 4 presents tests of whether additional Hispanic or Asian employees are particularly valuable in communities with nearby enclaves of Hispanic or Asian immigrants who do not speak English. The effects for Hispanics are not statistically significant. In contrast, matching is important for stores in communities with many non-English speaking Asians. Stores that increase Asian employees have higher sales if the community has many Asian immigrants who do not speak English. Because we necessarily group together Asian employees of varying languages and fluency, the effect of hiring an employee who speaks the language of the enclave is presumably larger than the estimate reported here.

To understand the magnitude of the coefficient of 9.0 on the interaction of the change in the share of the store's percent Asian and the community's percent speaking an Asian-Pacific language but not English, consider a store in community in which 3 percent speak only an Asian language. A one-standard deviation (.054) increase in the change in this store's Asian employment share is associated with a 1.5 percent increase in sales (relative to such an increase in the store's Asian employment in a community with no residents who speak only an Asian language). Having a rising proportion of the store's workforce who share the background of linguistically isolated Asians increases sales. Given the small population share of linguistically isolated Asians, the impact on sales is, not surprisingly, modest.

Limitations

The retail and restaurant industries employ roughly one sixth of the U.S. workforce and is often the sector of first employment. Even though these results may not generalize to other employers or to other sectors of the economy, results limited to this sector are still important.

Employee demographics may matter less in this sector than elsewhere. This employer has a strong national brand. It is an open question whether potential customers react more to the brand than to the demographics of current employees. These workplaces demand relatively little employee-customer interaction. The low status of these jobs may imply that customers care less about the race of those that serve them. Diversity may also matter less because frontline workers have so little discretion. In jobs with more decision-making power, diverse backgrounds may raise the benefits while rising communication costs may raise the costs of diversity. All of these forces are muted here.

Other reasons suggest it is also possible that the effects of employee demographics on sales may be greater in this sector than in others. Most of these workplaces are in malls and shopping districts that contain multiple stores selling close substitutes. In such settings it is easy for retail

customers who care to look in the store window, see if there is no demographic match, and, if not, choose a nearby store. Because the costs of both information and switching are low in these settings, customers may be particularly responsive to demographic differences with potential salespeople.

V. Conclusion

In contrast to the often heated rhetoric surrounding discrimination, and the often unfounded assertions surrounding diversity, we have a modest result. In this sector, most customers are not very sensitive to the race of the employees who serve them. Sales do fall in white communities when black employment shares rise, and sales do increase with rising Hispanic employment shares, but both effects are small. These results do not generally support the claim that employee racial composition is important because customers have strong preferences to be served by those of the same race. This result is important because many employers in this sector appear to hire based on fears of such customer discrimination (Moss and Tilly 2001: 146-7).

We find little payoff to matching employee demographics to those of potential customers except when the customers do not speak English. Asian immigrants who do not speak English apparently buy more from those of similar background. But this linguistic isolation is the (fairly rare) situation most favorable to the segregation model.

To those concerned with the long and troubled history of discrimination and with its continuing specter in this country, these results should be heartening. After all, one of the painful paradoxes of customer discrimination is that it could lead employers to discriminate in pursuit of greater profits even if they are themselves indifferent to race and gender. The paradox is heightened by diversity proponents who sometimes assume both that customers discriminate and that customer discrimination should be pandered to. At least at this firm, sales are not much affected by the racial composition of the workplace or by the racial match between customers and employees.

Table 1: Summary Statistics

| Variable | Pooled data | | One-year changes | |
|---|-------------|-----------|------------------|-----------|
| | Mean | Std. Dev. | Mean | Std. Dev. |
| log real sales | (omitted) | 0.658 | (omitted) | 0.180 |
| log employment (Average employment is about 30 frontline employees per store, mostly part-time) | (omitted) | 0.505 | 0.127 | 0.237 |
| Store Demographics | | | | |
| Average age | 24.38 | 2.34 | -0.21 | 1.73 |
| %Female | 0.754 | 0.136 | -0.004 | 0.089 |
| %White | 0.710 | 0.228 | -0.023 | 0.095 |
| %Black | 0.115 | 0.130 | 0.013 | 0.071 |
| % Hispanic | 0.097 | 0.146 | 0.007 | 0.060 |
| %Asian | 0.064 | 0.085 | 0.006 | 0.054 |
| Community Demographics | | | | |
| %Female | 0.513 | 0.017 | | |
| %White | 0.795 | 0.168 | | |
| %Black | 0.077 | 0.097 | | |
| % Hispanic | 0.046 | 0.066 | | |
| %Asian | 0.046 | 0.073 | | |
| % Speak only Spanish | 0.005 | 0.011 | | |
| % Speak only an Asian language | 0.004 | 0.014 | | |
| Changes use levels of community variable and change in %of store staff | | | | |
| Store-Community Interactions | | | | |
| (Store %Black)*(Community %Black) | 0.015 | 0.039 | 0.002 | 0.014 |
| (Store % Hispanic)*(Community % Hispan-all races) | 0.018 | 0.061 | 0.001 | 0.014 |
| (Store %Asian)*(Community %Asian) | 0.007 | 0.033 | 0.001 | 0.009 |
| (Store %Black)*(Community %white) | 0.087 | 0.094 | 0.010 | 0.055 |
| (Store % Hispanic)*(Community %white) | 0.060 | 0.073 | 0.005 | 0.043 |
| (Store %Asian)*(Community % white) | 0.047 | 0.054 | 0.005 | 0.041 |
| (Store % Hispanic)*(Community %speak only Spanish) | 0.001 | 0.006 | 0.0001 | 0.0013 |
| (Store %Asian)*(Community %speak only Asian lang.) | 0.001 | 0.004 | 0.0001 | 0.0014 |

The sample contains over 20,000 store-months at over 800 stores. Between-store summary statistics resemble pooled.

Table 2. The Impact of Demographic Change on Sales
Dependent Variable: 1 year Percentage Change in Monthly Sales

| | (1) | (2) | (3) | (4) |
|---|-------------------------|--------------------------|----------------------------|----------------------------|
| ΔStore Avg. Age | 0.003** (0.001) | 0.003** (0.001) | 0.003** (0.001) | 0.003** (0.001) |
| ΔStore %Female | 0.015 (0.014) | 0.015 (0.014) | 0.015 (0.014) | 0.014 (0.014) |
| ΔStore %Black | -0.057 (0.033) | 0.026 (0.087) | 0.246 (0.127) | 0.011 (0.087) |
| ΔStore % Hispanic | 0.006 (0.034) | 0.082 (0.089) | -0.429* (0.190) | 0.068 (0.088) |
| ΔStore %Asian | 0.044 (0.036) | 0.146 (0.083) | 0.240 (0.137) | 0.119 (0.083) |
| Sum of Interactions | 0.026 (0.043) | | | |
| (ΔStore %White)*(Comm. %White) | | 0.124 (0.098) | | 0.107 (0.097) |
| (ΔStore %Black)*(Comm. %White) | | | -0.375** (0.144) | |
| (ΔStore %Hispanic)*(Comm. %White) | | | 0.471* (0.217) | |
| (ΔStore %Asian)*(Comm. %White) | | | -0.234 (0.164) | |
| (ΔStore %Black)*(Comm. %Black) | | -0.039 (0.156) | -0.318 (0.190) | -0.027 (0.156) |
| (ΔStore % Hispanic)*(Comm. % Hispanic-all races) | | -0.002 (0.160) | 0.638* (0.262) | 0.112 (0.231) |
| (ΔStore %Asian)*(Comm. %Asian) | | -0.276 (0.151) | -0.420* (0.205) | -0.952** (0.191) |
| (ΔStore % Hispanic)*(Comm. % speaking only Spanish) | | | | -1.367 (1.938) |
| (ΔStore % Asian)*(Comm. % speaking only an Asian-Pacific Language) | | | | 8.958** (1.676) |
| Observations | 23034 | 23034 | 23034 | 23034 |
| Number of stores | >800 | >800 | >800 | >800 |
| R-squared | .238 | .238 | .240 | .240 |

Notes: Standard errors in parentheses. * significant at 5%; ** significant at 1%. Additional controls include %change in employment, store age and its square, time since last remodel and its square, store size in square feet and its square, store division, store location type (mall, street, etc.), Δ% Native Americans, Δ% other races, and month dummies. Standard errors are adjusted for first-order autocorrelation within stores and for heteroskedasticity across stores.

Sum of Interactions reports the coefficient on [(ΔStore %White)*(Comm. %White) + (ΔStore %Black)*(Comm. %Black) + (ΔStore % Hispanic)*(Comm. % Hispanic-all races) + (ΔStore %Asian)*(Comm. %Asian)].

Test of Hypothesis that coefficients on interaction terms in column 2 are equal: chi2 = 4.18; prob>chi2 = 0.2425

Test of Hypothesis that coefficients on the (comm.%white) interaction terms in column 3 are equal: chi2 = 12.07; prob>chi2 = 0.0024

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Endnotes

¹ A partial listing of such cases in recent years includes Abercrombie and Fitch, Albertsons, Home Depot, Kroger, Lucky Stores, Safeway, Shoney's, Wal Mart and Winn-Dixie. If we were to include customer service jobs outside the retail sector, the list would include a number of financial services firms.

² Due to data limitations described below, we refer to the categories white, black, Asian, and Hispanic as "race," although Hispanic is more accurately described as an ethnicity.

³ In her study of retail stores in largely black neighborhoods, Lee (2001) identified a variant of communication as a motive for storeowners to hire employees who match customers' demographics. Storeowners in her inner-city sample prefer to have at least one black employee in the store who can resolve a tense situation without reinforcing racial conflict. Urban policing in the U.K. and in the U.S. provides similar examples (U.K. Home Office, The Scarman Report 1981).

⁴ Our concern here is whether customers discriminate against firms based on the demographics of their employees. This is distinct from the question of whether firms discriminate against customers which is usefully reviewed by Yinger (1998).

⁵ We will use decennial census data for community demographics.

⁶ This formulation of the cost of hiring a workforce that diverges from the pool of qualified applicants is only an approximation because many of the costs of such divergences are due to mismatches in the demographics of the flows of qualified applicants and of hires. Modeling dynamics explicitly adds to notation without changing the results. We assume identical productivity and wages for all groups.

⁷ One could imagine other models of customer discrimination and particular circumstances under which our tests would have little power. For example, if composition were on average sales maximizing across all the changes we observe in each establishment ie. All changes were symmetric about the sales maximizing composition. More generally, it is difficult to discern second-order losses. More complex models in which we allow customers to respond non-linearly to employee demographics are considered in an earlier version of this paper.

⁸ Note that if there is a distribution of preferences for same-race salespeople within each race, the β (from equation 8) or β_{race} ($race = w, b, h, a$ in equation 9) coefficients are just the average preference of that race.

⁹ Conceptually one can put in the full set of interactions, but in practice that specification runs into two challenges. First, including the full set of interactions precludes including the main effects on each race. Thus, the interactions no longer have an economically meaningful interpretation. Second, we have less variation in Asian and Hispanic shares in both the stores and communities, so we lose statistical power.

¹⁰ To safeguard the employer's confidentiality, we do not disclose exact numbers.

¹¹ For example, in results not shown we find that when a high-sales manager shifts to a new store, the new store has increased sales.

¹² Each store is then represented by at most 18 observations of one year changes in monthly data.

¹³ This employment pattern arises partly because the employer has a reputation for gender and race diversity in its marketing and employment. In addition, in interviews, managers noted that they hire many employees from among the ranks of customers.

¹⁴ They may be large relative to profit margins. According the U.S. Bureau of the Census (2008), after tax profits among large U.S. retailers were about 3 percent of sales.

¹⁵ In an analogous specification, we also find that increasing black employment share has a more positive effect on sales in communities with more Asians.

¹⁶ In addition, while the test is weak, we do not see greater dispersion across stores in employee demographics as the number of stores increases in cities of similar size and demographics.