MANAGER ETHNICITY AND EMPLOYMENT SEGREGATION

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The authors examine the effect of manager ethnicity on the ethnic composition of employment using nine years of personnel records from a regional grocery store chain in the United States. The workforce studied is composed almost entirely of a white majority and a large Hispanic minority; the authors focus on the role of Hispanic ethnicity. Estimating models with store fixed effects, the authors examine the effects of manager ethnicity on hiring, transfer, and separation patterns. Effects of manager ethnicity are compared across several types of jobs, with significant effects occurring on hiring patterns but not on transfers, and effects occurring on separation patterns in only one atypical case. The authors also find that the effects on hiring occur only in jobs or departments with very few employees.

Does manager ethnicity affect the ethnic composition of an establishment's workforce? In the United States, considerable workplace segregation occurs based on ethnicity. Such segregation may result partly from residential segregation and from segregation by ethnically correlated skills; however, other mechanisms are likely to be important. One possibility is that ethnic segregation of employees is directly linked to ethnic differences among managers. Several factors could cause such a link: discrimination by managers or employees, ethnically segregated labor market networks, and production complementarities due to a shared language or culture.

Using nine years of personnel records from a regional grocery store chain in the United States, we examine the effect of manager ethnicity on the ethnic composition of employment at the firm's 73 stores. Because the workforce we study is composed almost entirely of a white majority and a large Hispanic minority, we focus on the role of Hispanic ethnicity. We examine

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the effects of manager ethnicity on hiring, transfer, and separation patterns. And we compare the effects of manager ethnicity across several types of jobs and departments within the same stores.

Several features of our study set it apart from prior research. First, only a small number of studies have examined the effect of manager demographics on workforce demographics, and the present study is one of the few that can distinguish the effects of manager ethnicity from unobserved differences across workplaces. Second, despite the rise of Hispanics as the largest American minority, the role of Hispanic ethnicity in labor market outcomes has been relatively neglected. In particular, the importance of manager ethnicity for Hispanic employment patterns has been examined in only one other setting. Finally, this study is the first to look within establishments to examine whether the effect of manager ethnicity on workforce composition varies across different types of jobs and departments.

Literature Review

In a comprehensive study of workplace segregation in the United States, Hellerstein and Neumark (2008) document extensive segregation by race and by Hispanic ethnicity. Their database allows them to construct measures of segregation that are representative of most U.S. workplaces by matching records in the 1990 Decennial Census of Population to a Census Bureau list of most U.S. business establishments. Their data lack detailed information on individuals and establishments, however, and does not match employees to their managers. Hence, their ability to determine the sources of segregation is limited, and they cannot examine the link between manager race or ethnicity and the racial and ethnic composition of employees.

Only a small number of studies have addressed the question of whether segregation of employees is directly linked to differences among managers. First, four valuable studies have examined black employment in the United States—Bates (1994), Turner (1997), Carrington and Troske (1998), and Stoll, Raphael and Holzer (2004). These studies all find that blacks are employed at greater rates in establishments with black supervisors, managers, or owners. A disadvantage of these studies, however, is that they are based on cross-sectional data and cannot control for unobserved differences across workplaces that may be correlated with manager race (e.g., skill requirements and the demographics of the local labor pool). Hence, these studies have limited ability to conclude that variation in manager race is an important source of segregation.

More recently, three studies have used panel data to estimate the effects of manager demographics on workforce demographics and, by examining changes in management over time, the authors of these studies have been able to control for unobserved differences across workplaces. Overall, they suggest that manager race and ethnicity are determinants of the racial and ethnic composition of a workforce.

In two of these studies, Giuliano, Levine, and Leonard (2009, 2011) examine the same setting using a panel data set constructed from the personnel records of a U.S. retail chain. One (2009) finds that hiring patterns vary significantly across managers of different racial and ethnic groups. The largest differences are between black and non-black managers; but in locations with large Hispanic populations, Hispanic managers hire significantly more Hispanics and fewer whites than do white managers. The other study (2011) finds that when the manager is of a race or ethnicity that is dissimilar from an employee, both black and Hispanic employees are more likely to be fired and less likely to be promoted. The 2011 study also finds small effects of ethnic differences on the quit rates of Hispanics and of whites.[1]

In the third study, Aslund, Hensvik, and Skans (2012) analyze a Swedish data set that has the advantage of being representative of small- and medium-sized workplaces in Sweden. The authors find that immigrant managers are more likely to hire immigrants than are native managers. They also find evidence that new hires who share the manager's ethnicity have lower turnover rates and higher wages.

These studies also investigate the reasons for why manager ethnicity matters, though the evidence here is less conclusive. Giuliano et al. argue that the patterns in quits and dismissals suggest that both manager and employee preferences are important. But an analysis of residential zip codes suggests that segregated hiring networks may also play a role. Aslund et al.'s findings suggest that managers are able to attract higher quality workers when they recruit those whose ethnic background is similar to their own.

Data

We analyze the administrative personnel records from a large regional grocery store chain in the United States. The records cover a nine-year period from 1976 to 1984, and they contain information on every retail worker employed as of December 31 of each year.

Each year, the firm operated between 57 and 61 retail stores located in 24 cities, and roughly 60% of the stores were concentrated in one major metropolitan area. During our sample period, several stores were closed and several opened. Overall, our sample includes data on a total of 73 stores,

[1]To our knowledge, the effect of manager ethnicity on Hispanic labor market outcomes has been examined previously only in the setting used by Giuliano et al. Kenney and Wissoker's (1994) analysis of audit study data finds that Hispanics are less likely than their Anglo counterparts both to obtain job interviews and to be offered jobs. However, presumably because of insufficient variation, this study does not look at the role of employer or interviewer ethnicity. Other papers have studied the importance of racial and ethnic dissimilarity in varying types of superior–subordinate relationships. Antonovics and Knight (2009) find that racial or ethnic similarity of police officer to driver reduces vehicle search rates; and Dee (2005) finds that racial or ethnic dissimilarity between students and teachers causes teacher evaluation of students to be more negative. Although both of these studies include Hispanics, they group Hispanics with blacks; hence neither estimates separate effects of ethnic dissimilarity for Hispanics.

Table 1. Characteristics of Retail Stores and Workforces

Variable	*Mean*	*Standard deviation*	*Minimum*	*Maximum*
Number of retail employees in store	28.8	8.2	10	55
Number of baggers	3.2	1.9	0	13
Number of cashiers	8.0	3.5	2	20
Number of stockers	6.4	2.6	1	15
Number of meat wrappers	1.1	0.8	0	4
Number of meat cutters	2.1	1.0	0	6
Number of produce clerks	1.6	1.0	0	6
White, non-Hispanic employees (%)	82.4	16.1	8.3	100
Hispanic employees (%)	14.9	15.1	0.0	91.7
Non-white, non-Hispanic employees (%)	2.7	3.8	0.0	28.6
Hispanic of local population* (%)	13.4	15.1	0.6	71.3
Foreign-born of local population** (%)	5.6	3.4	1.6	25.3
Spanish-speakers who don't speak English well, of local adult population** (%)	1.6	2.9	0.0	18.5

Notes: Workforce size and demographic statistics based on panel of 73 stores with a total of N = 532 store-year observations.
*Based on 1980 Census; for all Census tracts within one-mile radius of store. For 14 stores in areas that were not tracted in 1980 Census, zip-code level statistic is used.
**Based on 1980 Census, STF3b; zip-code level statistics.

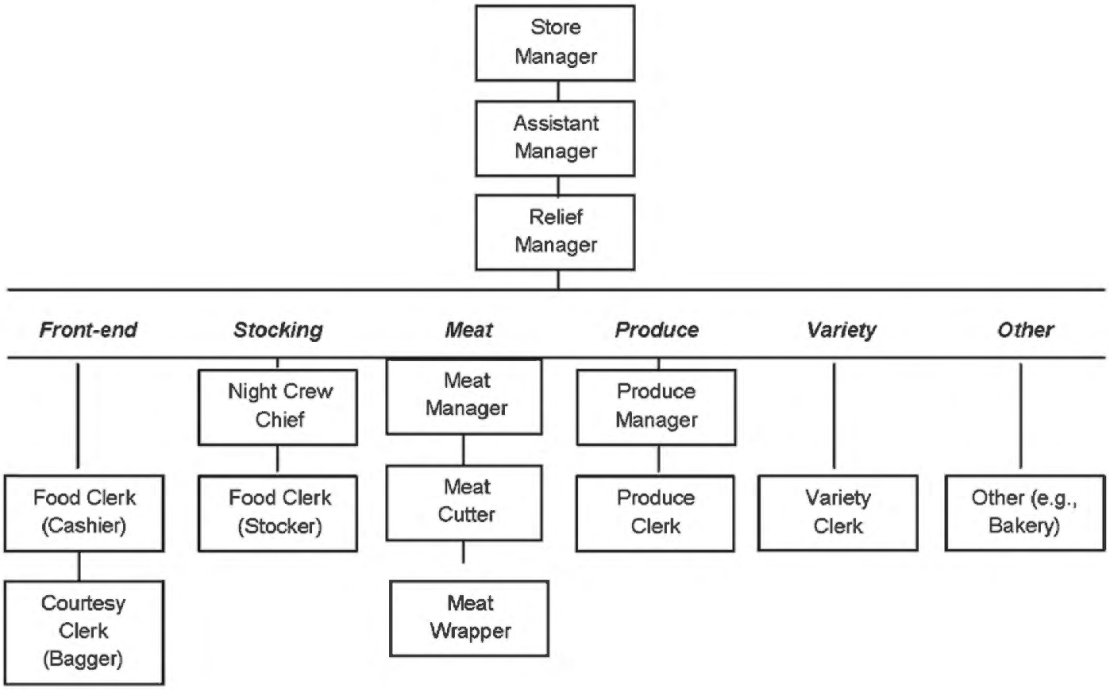
with an average of 7.3 years of data per store, forming a panel of 532 store-years.

Table 1 summarizes the characteristics of the stores. A typical store had about 29 retail employees. The average workforce was largely white and non-Hispanic (82%) but had a sizeable minority of Hispanics (15%). The remaining 3% were classified as black, Asian, or Native American, and are grouped together under the category "non-white." The share of Hispanics in the workforce reflected the local demographics. Of the population living in census tracts within one mile of a store, an average of 13.4% were Hispanic. An average of 5.6% were foreign born, and 1.6% were Spanish-speakers with limited English proficiency.

With the exception of three salaried managerial positions, all of the jobs in our sample were covered by collective bargaining agreements.[2] The union agreements addressed pay levels, work scheduling, holidays, vacations, and other benefits. However, important for our analysis, the employer retained full control over hiring and job allocation. When filling a vacancy, the employer was free to fill the position with a newly hired employee and was contractually obligated only to inform the union who was hired. If the firm decided to fill a vacancy through internal promotion, the union contract required only that the most senior employee in the relevant source job

[2]Most employees were represented by local affiliates of the United Food & Commercial Workers Union, International, but meat department employees were represented by a different union. Our information is based on examination of one of the contracts. For more details, see Ransom and Oaxaca (2005).

Figure 1. Store-Level Organization



be considered for the job. Thus the unions did not play a significant role in hiring, job assignment, or the assignment of managers.

Figure 1 shows an organizational chart for the firm.[3] Each store had three salaried positions—the store manager, the assistant manager, and the relief manager. In addition, there were three other positions whose job titles suggest managerial responsibilities: the night crew chief and the managers of the meat and produce departments. Those three positions were in the bargaining unit and thus were not technically part of store management. But for simplicity, we will often refer to all six positions as "management."

Of these six positions, the store manager had the most authority about employment decisions, but even the store manager's authority was limited. According to our interview with an individual who was a store manager during this time period, store managers had authority to hire only baggers (see below); other employees were hired at the corporate level and assigned to the store. Furthermore, transfers between stores were decided on at a level of management above the store level. Although we do not know the exact responsibilities of the three non-salaried managers, it is unlikely they had any authority over employment decisions. They may have been consulted by management on decisions about employees in their departments.

The employees we study worked in one of four departments: front-end, stocking, meat, and produce. Employees with the job title of "food clerk" worked either in the front-end operating the cash registers (henceforth

[3]This figure is a slightly modified version of Figure 1 from Ransom and Oaxaca (2005).

"cashiers"), or in the stocking department stocking shelves (henceforth "stockers"). These two positions made up the bulk of employees, with a typical store averaging 8 cashiers and 6.4 stockers (Table 1). Courtesy clerks, who bagged and carried groceries for customers (henceforth "baggers"), were also in the front-end department. Each store had 3.2 baggers on average. The meat department had two nonmanagerial positions: meat cutters (two per store) and meat wrappers (one per store); and the produce department had produce clerks (1.6 per store) who stocked the produce.

In addition to these four departments, most stores also had a variety (non-foods) department that typically had only one employee and no manager, and a few stores had other specialty departments such as a bakery. We exclude these employees due to small sample sizes.

Our analysis requires matching employees with their managers each year. The manager we are most interested in is the one who supervised an employee directly. For front-end employees (baggers and cashiers), the store manager is considered the direct supervisor. Stockers are assigned to the night crew chief, and employees in the produce and meat departments are assigned to their respective department managers.[4] We also match every employee to each of the salaried managers in the store.

When matching employees to managers, there are two ambiguous scenarios: when the managerial position is vacant on December 31 of a given year (i.e., no employee is assigned the managerial job code)[5] and when an employee's manager as of December 31 is replaced by a new manager during the following year.

With respect to missing managers, if the store manager position is vacant, we use the assistant manager. But if a department manager is vacant, there is no assistant manager and so we need another solution. Our solution to missing department managers depends on whether we are analyzing new hires or separations. For new hires, we replace the missing manager with the previous manager in the store; for separations, we use the department manager observed in the following year.[6] In cases for which there are new managers,

[4]In the case of stockers, our matching is imperfect because we do not have data on shifts and thus do not know whether there are some stockers who do not work the night shift. We have experimented with assigning stockers to the relief manager instead, and in general doing so does not lead to different conclusions.

[5]About 10% of store-years are missing one of the three salaried managers, but very few are missing more than one. Assistant and relief managers are missing with about the same frequency as store managers. Also, roughly 7% of meat and produce managers are missing. The frequency with which these managers are missing is not correlated with store employment, and the manager vacancies are temporary. The case of night crew chiefs is different. About 30% of store-years are missing a night crew chief, and many of these are consecutive years in the same store. The frequency with which stores lack night crew chiefs is highly correlated with store employment, suggesting that smaller stores often do not employ one.

[6]Since we do not know separation dates, the following year's manager is as likely as the current manager to have affected employee separation rates during the following year. Indeed, if employees have some prior knowledge of changes in management, then the future manager is probably the more relevant of the two. Roughly 15% of store-years remain without a night crew chief. In these cases, we have experimented with assigning the relief manager as the stockers' manager. In general, our conclusions do not change.

we use similar solutions. For new hires, we use the current manager; for separations, we use the future manager.[7]

When matching employees in one year to the manager in the following year, we must consider that one of this year's employees may be next year's manager. To avoid designating employees as their own manager, we exclude from the sample employees who became the manager in their own department.

Employee Characteristics

Table 2 provides summary statistics for the employees in our sample. Several systematic differences are observed in employee characteristics across jobs. The fraction Hispanic is smaller in the job categories with more employees (cashiers and stockers have 13.1 and 15.4%, respectively) and is largest among the produce clerks (26.5%). Substantial segregation of jobs by gender occurs: cashiers and meat wrappers are almost entirely female, while stockers, meat cutters, and produce clerks are largely male. Age differences are also noted: baggers are the youngest (average age of 19), and cashiers and meat department workers are the oldest (38–43 years).

Wage rates are shown as of December 31, 1980. These ranged from $2.90 (close to the minimum) for baggers to $8.90 for meat cutters. Produce clerks, cashiers, and stockers had an average wage of $7.30, and these three had the same union pay scale that encompassed several different pay rates based on seniority.[8] As expected, average tenure is highly correlated with wage rates and is lowest among baggers whose average tenure is less than one year.

Manager Characteristics

Table 3 summarizes the characteristics of our managers. The degree of ethnic diversity differs considerably across the managerial positions. At the store level, only 2.5% of store managers are Hispanic, but the Hispanic share increases to 6.5% for assistant managers, and 10.7% for relief managers. In the other positions, night crew chiefs are 17.7% Hispanic, and (as is true of nonmanagerial employees) the Hispanic share of managers is highest in the meat and produce departments, with produce managers having the largest share (29.6%). Only about 1% of all managers are classified as non-white (black, Asian, or Native American).

Notably, there are very few female managers at any level. During the latter part of the sample period, the employer faced a class action lawsuit over gender differences in promotion and pay.[9]

[7]In the case of management changes that occurred in the same year as a new hire, we typically do not observe whether the manager change occurred before or after the new hire was made. Hence, for the analysis of new hires, we also perform robustness tests that exclude years when the manager change occurred.

[8]These wage rates exclude night shift or overtime premia.

[9]Ransom and Oaxaca (2005) examine the lawsuit's impact on gender differences in promotions and pay.

Table 2. Characteristics of Employees by Job Title

Employee characteristics	*Baggers*	*Food clerks*		*Meat wrappers*	*Meat cutters*	*Produce clerks*
		Cashiers	*Stockers*			
White, non-Hispanic (%)	80.5	82.1	82.7	76.6	74.8	70.7
Hispanic (%)	17.7	13.1	15.4	21.8	20.1	26.5
Non-white (%)	1.8	4.8	1.8	1.6	5.1	2.7
Female (%)	28.2	97.6	4.0	98.6	0.8	6.3
Age	19.1 (5.7)	38.5 (12.0)	27.4 (8.7)	43.0 (11.4)	40.5 (11.7)	28.3 (10.3)
Part-time (%)	98.6	70.1	59.8	23.4	8.6	53.5
Tenure (years)	0.9 (0.9)	6.4 (5.5)	5.5 (4.5)	9.0 (7.1)	7.0 (5.5)	6.5 (6.2)
Wage (year-end, 1980)	$2.92 (0.26)	$7.36 (1.12)	$7.27 (1.19)	$8.50 (0.26)	$9.41 (0.43)	$7.39 (1.12)
Measures of ethnic dissimilarity						
Percentage whose manager is a different ethnicity/race[a] (%)	17.2	18.4	22.0	31.9	33.5	32.8
Percentage who are white with a non-white manager (%)	1.0	1.9	10.2	16.4	13.9	17.6
Percentage who are Hispanic with a non-Hispanic manager (%)	14.6	11.7	10.1	13.9	14.7	12.4
Percentage of salaried managers whose ethnicity/race differs from the employee's[b] (%)	18.7 (34.9)	20.6 (36.4)	18.3 (35.2)	25.8 (40.1)	25.7 (40.3)	28.3 (41.8)
Percentage of employee's coworkers whose ethnicity/race differs from the employee's[c] (%)	21.9 (32.4)	27.6 (31.0)	22.8 (30.0)	32.2 (35.8)	31.6 (36.1)	21.9 (32.4)
Measures of employment flows						
. . . into jobs						
Newly hired within past year (%)	68.3	10.0	8.9	7.5	8.0	6.8
Transferred from another store within past year (%)	0.5	10.1	12.1	17.1	21.2	9.6
Promoted from another job within past year (%)	0.0	2.3	5.8	0.0	1.2	7.1
. . . out of jobs						
Separated from company within year (%)	44.5	10.6	12.2	16.6	9.4	11.7
Transferred to another store within year (%)	0.3	10.6	12.2	16.3	20.1	8.9
Promoted to another job within year (%)	25.6	0.6	7.5	1.9	5.4	5.1
Number of employee-year observations	1,717	4,255	3,410	563	1,097	840

Notes: Standard deviations in parentheses (suppressed for dummy variables). Employment-weighted averages across store-years.

[a]"Manager" refers to the highest-ranking salaried manager present (e.g., store manager or assistant manager) for baggers and cashiers, the night crew chief for stockers, the meat manager for meat cutters and meat wrappers, and the produce manager for produce clerk.

[b]"Salaried managers" refers to the store, assistant, and relief managers at the store where the individual is employed.

[c]"Coworkers" refers to all employees with the same job title in the same store and year, excluding the individual. For meat wrappers and meat cutters, coworkers include all nonmanagerial meat department employees. Means based on employees who have at least one coworker.

Table 3. Characteristics of Managers by Job Title

	Salaried managers			*Other managers*		
Manager characteristics	*Store manager*	*Assistant manager*	*Relief manager*	*Night crew chief*	*Meat manager*	*Produce manager*
White, non-Hispanic (%)	97.0	92.5	87.8	81.4	79.6	69.6
Hispanic (%)	2.5	6.5	10.7	17.7	18.5	29.6
Non-white (%)	0.4	1.1	1.5	0.1	1.8	0.8
Female (%)	0.2	2.5	2.5	6.3	0.2	0.0
Age	39.0 (9.4)	33.6 (9.3)	30.0 (9.2)	29.2 (8.8)	41.6 (9.4)	37.0 (9.3)
Tenure (years)	15.6 (7.7)	10.4 (6.3)	6.9 (5.0)	5.9 (3.8)	12.3 (6.8)	14.7 (8.3)
Wage (year-end, 1980)	n/a	n/a	n/a	$8.21 (0.39)	$9.80 (0.21)	$8.41 (0.34)
Annual earnings (year-end, 1980)	$28,611 (4,718)	$23,880 (810)	$21,692 (1,380)	$17,370 (3,216)	$25,720 (1,370)	$20,947 (1,863)
Turnover within one year (%)	31.5	42.2	47.6	31.8	26.6	26.7
Number of store-year observations	473	465	466	333	491	496

The three salaried, store-level managers (store manager, assistant manager, and relief manager) typically earned substantially more than other employees. The one exception is that the average earnings of the meat department manager were greater than those of the assistant or relief managers. Night crew chiefs and produce managers earned less than relief managers but had a wage premium of about 13% over food and produce clerks.

While managers usually have between 6 and 16 years of tenure, considerable turnover within each position occurs due to a combination of separations, promotions, and transfers of managers between stores. The probability that a manager is replaced in a given year is about 31.5% for store managers and night crew chiefs, 40% for assistant and relief managers, and 26.6% for meat and produce managers. In nearly all cases, the managerial vacancies are filled through promotions or transfers; only 2% of those in our sample were filled through new hires.

The churning of managers is important for our analysis because it provides one source of variation in manager ethnicity within stores. Within the time frame of our sample, 46 out of 73 stores have some time-series variation in the ethnic classification of a manager due to turnover in the manager positions. In particular, 7 stores have both a Hispanic and a non-Hispanic individual in the position of store manager (or the highest-ranked salaried manager if the store manager is missing). For night crew chiefs, meat managers, and produce managers, the numbers of stores with changes in manager ethnicity are 16, 26 and 20, respectively. These stores provide the variation used to identify our models with store fixed effects.

Our analysis also exploits a second source of within-store variation in manager ethnicity: ethnic differences between department managers in the same store and year. Substantial variation is observed here, especially among night crew chiefs, meat managers, and produce managers. In 46 stores (and in 169 store-year observations), some ethnic variation takes place among the night crew, meat, and produce managers; and in 43 stores (150 store-years),

the produce manager's ethnicity differs from that of the meat manager. As explained further below, we use the combination of time-series and interdepartmental variation in manager ethnicity in two ways. First, we estimate models with store fixed effects that also control for the ethnic composition of employees and managers in all departments *other than* the one being analyzed. This allows us to ask, for example: Holding constant the ethnicity of managers and employees in the rest of the store in a given year, do more Hispanic stockers get hired that year if the night crew chief is Hispanic? Second, in our analysis of meat and produce employees, we estimate models with store-year fixed effects. These models are identified from store-years in which the produce manager's ethnicity differs from that of the meat manager.

Because our fixed effects estimates will be identified through variation that exists only in subsets of stores, it is useful to consider the characteristics of these stores. Appendix Table A.1 shows sample means of the variables in Table 1 for subgroups of stores that have some within-store variation in manager ethnicity. In general, these stores have about a 20% larger share of Hispanics in the workforce (roughly 18% as compared with 15%) and are located in areas with slightly more Hispanics in the population (15.6% as compared with 13.4%). The smaller subset of stores that contains variation in the *store* manager's ethnicity (which identifies the models for baggers and cashiers) has an even larger share of Hispanics in the workforce (36%) and the population (35.5%). However, all of the subsamples are similar with respect to the overall size and average numbers of employees in each job.

Measures of Ethnic Dissimilarity

To measure the ethnic relationship between employees and their managers, we construct a dummy variable that is equal to 1 if an employee's manager is an ethnicity different from the employee. This variable is summarized in the second panel in Table 2.

On average, approximately 18% of all baggers and cashiers work at a store in which their supervisor (i.e., the highest-ranking salaried manager) is of an ethnicity that is different from their own. This group is composed mainly of Hispanic employees with non-Hispanic managers, because most store managers are non-Hispanic whites.

Among employees supervised by non-salaried department managers, the fraction with dissimilar managers is much higher, and is more evenly split between Hispanics and non-Hispanics. Among stockers, 22% have a dissimilar night crew chief; and among meat and produce employees, roughly 33% have a dissimilar department manager. Among these employees overall, there are at least as many non-Hispanics with Hispanic managers as there are Hispanics with non-Hispanic managers.

Though many employees have dissimilar managers, there is nevertheless a tendency for managers and their employees to be the same ethnicity. Table 4 compares the ethnic composition of employees under non-Hispanic and Hispanic managers. On average, the proportion of employees who are

Table 4. Employee Ethnic Composition by Manager Ethnicity

	Manager's ethnicity		
	Hispanic	*White Non-Hispanic*	*Difference*
Store manager			
Baggers, % Hispanic	82.8	15.2	67.6
Cashiers, % Hispanic	43.4	12.1	31.4
Night crew chief			
Stockers, % Hispanic	34.9	11.7	23.2
Meat department manager			
Meat wrappers, % Hispanic	35.8	17.4	18.4
Meat cutters, % Hispanic	27.7	17.2	10.5
Produce manager			
Produce clerks, % Hispanic	44.7	18.0	26.6
All managers			
All employees, % Hispanic	39.2	13.5	26.0

Hispanic is 13.5% among those with non-Hispanic managers, but is nearly three times as high (39.2%) among those with Hispanic managers. This tendency toward manager–employee similarity is especially high among baggers.

Much of the correlation between manager and employee ethnicity is likely to result from the residential segregation of Hispanics and non-Hispanics. To investigate the role of residential segregation, we collected 1980 U.S. Census data on the Hispanic share of the population living within one mile of each store, and merged this with data from the cross section of stores that were open in 1980.[10] We then estimated linear probability models predicting the likelihood that an employee is Hispanic as a function of both the ethnicity of the employee's manager and the Hispanic share of the population living near the employee's store. The results (Table 5) confirm the importance of residential segregation. The coefficient on the Hispanic population share is always significant and large, and it is especially large in the analysis of baggers—who tend to live much closer than other employees to the stores where they work.[11] However, even after controlling for the ethnic composition of the local population, manager ethnicity remains a significant predictor of the workforce's ethnic composition. The coefficients on manager ethnicity are especially large in the analyses of baggers and of meat and produce employees.

Even the residual correlation between manager and employee ethnicity may be driven by residential segregation and the resulting differences in local labor pools; after all, our Census measures provide only an imperfect measure of labor pool differences across stores. This residual correlation could also result if 1) more Hispanic employees are hired under Hispanic managers than under non-Hispanic managers, or 2) employees with ethnically

[10]More precisely, we use data on the population living in all Census tracts that lie within a one-mile radius of each store.

[11]Residential zip codes are available for a subset of employees in our data. Using these zip codes, we estimated that baggers commute an average of 3.7 miles to their workplaces while other nonmanagerial employees commute between 8 and 11 miles.

Table 5. Cross-Section Analysis of Workplace Segregation in 1980

Baggers	*(1)*	*(2)*
Manager is Hispanic	**0.813**** (0.037)	**0.215** (0.155)
% Hispanic within 1 mile	—	1.112** (0.248)
Observations	333	333
R-squared	0.15	0.30
Cashiers	*(1)*	*(2)*
Manager is Hispanic	**0.359**** (0.082)	**0.023** (0.133)
% Hispanic within 1 mile	—	0.618** (0.160)
Observations	618	618
R-squared	0.03	0.10
Stockers	*(1)*	*(2)*
Manager is Hispanic	**0.227*** (0.113)	**0.084** (0.052)
% Hispanic within 1 mile	—	0.895** (0.249)
Observations	411	411
R-squared	0.06	0.19
Meat and Produce employees	*(1)*	*(2)*
Manager is Hispanic	**0.208**** (0.057)	**0.109‡** (0.064)
% Hispanic within 1 mile	—	0.830** (0.263)
Observations	344	344
R-squared	0.05	0.14
All employees	*(1)*	*(2)*
Manager is Hispanic	**0.276**** (0.095)	**0.101*** (0.040)
% Hispanic within 1 mile	—	0.836** (0.103)
Observations	1,706	1,706
R-squared	0.06	0.18

Notes: Entries are estimates from linear probability models in which dependent variable = 1 if an employee is Hispanic and 0 otherwise. Estimation sample includes all employees present either at the end of 1980 or the end of 1981. Parentheses contain robust standard errors adjusted for clustering on store. Regressions for meat and produce employees control for dummy variables indicating whether the employee is a meat wrapper, meat cutter, or produce clerk. The regressions that pool all employees control for a complete set of job title indicators. All regressions also control for a dummy variable indicating whether the manager is both non-white and non-Hispanic.
**Significant at 1%, *significant at 5%, ‡significant at 10%.

dissimilar managers have higher separation rates than employees with ethnically similar managers. We examine the latter two hypotheses in our regression analysis below. Specifically, we estimate models that rely on within-store variation in manager ethnicity; hence, any remaining correlation with the ethnic composition of employees cannot be due to unmeasurable differences between stores.

Measures of Employment Flows

The bottom panel of Table 2 describes the flow of employment in and out of each job title. Very little movement is observed between departments

within a store. Otherwise, employees enter a job by one of three ways: hires, transfers from the same position at another store, and promotions. Employees also exit a job by one of three ways: separations from the company, transfers to the same job at another store, and promotions (which may involve transfers between departments or stores).

Our main focus is on employment flows in and out of the firm, and so we are interested in new hires and separations. The probability that a given employee was hired within the past year is largest among baggers at about 68%. For all other positions, the probability is between 7 and 10%. Our sample contains a total of more than 2,000 new hires into the six job titles we examine. The probability that an individual's employment with the company is terminated within a year is again highest for baggers at 45%, and ranges from 10 to 17% for employees in the other positions.[12] Our data set documents roughly 1,700 separations from job titles we examine.[13]

Very little movement occurs between departments—except for baggers moving to stocking and produce when promoted, and the movement of produce clerks into the stocker position (about 10% per year). However, with the exception of baggers, transfers between stores within the same job title were common. The probability that a (non-bagger) employee is found in the same job but a different store one year later ranges from 9% for produce clerks to 20% for meat cutters.[14]

With regard to movement through promotions (in-store and transfer promotions), each year 26% of baggers are promoted to stocker, cashier, or produce clerks; 7.5% of stockers are promoted to night crew chief or relief manager; 2.3% of meat employees are promoted to meat cutter; and roughly 5% of meat cutters and produce clerks are promoted to the managerial position in their respective departments.

Manager Ethnicity and Hiring Patterns

We first estimate the effect that manager ethnicity has on the ethnic composition of new hires. A key challenge is that the characteristics of both managers and employees may be correlated with other characteristics of a workplace and its location. In our data, job descriptions and skill requirements are highly uniform across workplaces. So the main concern is variation in the ethnic composition of the labor pool due to the residential segregation of ethnic groups. As Table 5 suggests, stores located in Hispanic neighborhoods are likely to have more Hispanic managers and to hire more

[12]Because we don't observe employees who were hired after January 1 and separated before December 31 of a given year, estimates based on our sample are likely to underestimate true turnover rates. The sample selection bias in our estimates of turnover rates is likely to matter most for baggers. We discuss this issue below.

[13]Separations are inferred from the fact that the employee was not present in the following year. For stores that closed, we exclude employees in the year before closing. We also exclude observations from the last year of our sample period (December 31, 1984).

[14]Employees in stores that closed are excluded from this measure.

Hispanic employees simply because both managers and employees have a preference for working close to where they live.

Because we do not have precise measures of the ethnic composition of each store's labor pool, we cannot identify the role of manager ethnicity by making comparisons across stores. Our estimation strategy solves this problem by exploiting variation in manager ethnicity that occurs *within* stores. Our data contain two sources of within-store variation. The first is time-series variation due to manager turnover—such as when a Hispanic manager replaces a non-Hispanic manager or vice versa. The second is the ethnic differences among contemporaneous managers of different departments in the same store.

We start by using the time-series variation to estimate a model with store fixed effects. Our basic estimation equation is a linear probability model in which the dependent variable is a dummy variable equal to 1 if an employee i, hired in store j at time t, is Hispanic:

$$(1) \qquad Hispanic_{ijt} = \alpha + \beta\ Mgr\_Hispanic_{jt} + X_{jt}\,\gamma + T_t\,\delta + \mu_j + \varepsilon_{ijt}.$$

The parameter of interest is the coefficient β on a dummy variable (*Mgr_Hispanic*) that equals 1 if the manager is Hispanic in the department where the new hire occurs.[15] The store fixed effects, μ_j, summarize the effects of any permanent differences across stores, communities, and local labor markets on the probability that a new hire is Hispanic. The equation also includes a set of dummy variables, T_t, that corresponds to eight of the nine years in our sample. These year identifiers control for changes over time in labor supply and demand that might affect the ethnic composition of the labor pools for all stores. Finally, X_{jt} represents a vector of covariates that vary within stores over time. The error term, ε_{ijt}, is assumed to be independent across stores, but we allow for clustering at the store level.

We estimate several versions of Equation (1). In each case, we estimate the equation separately for baggers, cashiers, and stockers; but to increase our sample size and boost the precision of our estimates, we pool the three positions in the meat and produce departments (meat wrapper, meat cutter, or produce clerk). When using the meat and produce sample, we also control for dummy variables indicating the position for which the employee is being hired.

In our most basic specification of Equation (1), we include only three additional control variables (X_{jt}): a dummy variable equal to 1 if the manager is non-white, a dummy equal to 1 if no store manager is present, and the total number of salaried managers present. The omitted manager ethnicity category is "white, non-Hispanic"; hence β compares the rates at which Hispanic employees are hired under Hispanic managers and white, non-Hispanic managers.[16]

[15]As in Table 2, the department manager for baggers and cashiers is the store manager if one is present, and the assistant managers otherwise.

[16]There are too few non-white managers to obtain reliable estimates comparing non-white groups with whites or Hispanics, and pooling the non-white managers with white managers does not change the Hispanic manager coefficients significantly.

Table 6. Probability That a New Hire Is Hispanic as a Function of the Manager's Ethnicity

Baggers	*(1)*	*(2)*	*(3)*	*(4)*	
Store manager is Hispanic	**0.521**** (0.100)	**0.491**** (0.107)	**0.518**** (0.100)	**0.507**** (0.058)	
Salaried managers, % Hispanic	—	0.090 (0.097)	—	—	
Department managers, % Hispanic	—	—	0.044 (0.071)	—	
Other employees, % Hispanic	—	—	–0.110 (0.303)	—	
Observations	1,172	1,172	1,172	1,172	
R-squared	0.33	0.34	0.34	0.38	
Cashiers	*(1)*	*(2)*	*(3)*	*(4)*	
Store manager is Hispanic	**0.020** (0.058)	**0.002** (0.082)	**0.020** (0.089)	**0.400** (0.320)	
Salaried managers, % Hispanic	—	0.053 (0.212)	—	—	
Department managers, % Hispanic	—	—	–0.227‡	—	
Other employees, % Hispanic	—	—	0.364 (0.556)	—	
Observations	422	422	422	422	
R-squared	0.23	0.23	0.25	0.34	
Stockers	*(1)*	*(2)*	*(3)*	*(4)*	
Night crew chief is Hispanic	**0.045** (0.247)	**0.223** (0.261)	**0.205** (0.258)	**–0.160** (0.353)	
Salaried managers, % Hispanic	—	–0.646 (0.636)	—	—	
Other department managers, % Hispanic	—	—	–0.374* (0.165)	—	
Other employees, % Hispanic	—	—	–0.634 (1.185)	—	
Observations	232	232	232	232	
R-squared	0.44	0.44	0.45	0.61	
Meat and Produce Employees	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Department manager is Hispanic	**0.264*** (0.115)	**0.260*** (0.108)	**0.314**** (0.100)	**0.176** (0.256)	**0.595**‡ (0.352)
Salaried managers, % Hispanic	—	0.544* (0.248)	—	—	—
Other department managers, % Hispanic	—	—	0.211 (0.229)	—	—
Other employees, % Hispanic	—	—	1.306 (0.885)	—	—
Observations	175	175	175	175	175
R-squared	0.49	0.50	0.50	0.61	0.78
Model includes	*Store fixed effects (FEs)*	*Store fixed effects*	*Store fixed effects*	*Store FEs + store trends*	*Store-Year fixed effects*

Notes: Estimates from linear probability models in which dependent variable = 1 if new hire is Hispanic and 0 otherwise. Estimation sample includes all new hires made between 1976 and 1984. Robust standard errors in parenthesis, adjusted for clustering on store.
**significant at 1%, *significant at 5%, ‡significant at 10%.
Additional controls include a dummy variable for non-white managers (the omitted category is white non-Hispanic); a dummy for missing store managers; the number of salaried managers present; and dummy variables for eight out of nine years. Columns (2) control for the fraction of salaried managers who are non-white. The regressions based on meat and produce employees include dummy variables indicating the job title (meat wrapper, meat cutter, or produce clerk).

The results of this basic specification are shown in the first column of Table 6. The estimated effect of having a Hispanic manager varies dramatically across jobs. For cashiers and stockers, the estimates are small and statistically insignificant. But for baggers and for meat and produce employees, we estimate large and statistically significant effects.

For baggers, the estimates imply a 52 percentage point difference in the rate that Hispanics are hired under Hispanic and non-Hispanic managers. In our sample, under a typical non-Hispanic manager in a given store, an average of six non-Hispanic baggers are hired for every one Hispanic bagger. Thus, our estimate means that replacing the non-Hispanic manager with a Hispanic manager would yield a dramatic change in this ratio—with one non-Hispanic bagger being hired for every two Hispanics hired.

In the case of meat and produce employees, the column (1) estimate implies that when a department manager is Hispanic, 26 percentage points more Hispanic employees are hired into that department. When the manager is non-Hispanic, roughly one out of every eight hires is Hispanic in a typical meat or produce department. Hence our estimate means that when the department manager is Hispanic, three out of every eight hires is Hispanic.

To test for differences among meat wrappers, meat cutters, and produce clerks, we also estimate a model that includes the interaction of *Mgr_Hispanic* with the job title indicators. While the results suggest that the effects of manager ethnicity are smaller for meat wrappers than they are for meat cutters and produce clerks, the differences are not statistically significant.

In column (1), the focal manager is the supervising manager of the employees. For baggers and cashiers, it is the store manager (or assistant manager); and for stockers, meat department employees, and produce clerks, it is the relevant department manager (or crew chief). We estimate these effects as if the supervising managers had a role in hiring the employees in their departments, although we believe that such a role, if any, would be indirect. Our understanding is that for all employees except baggers, hiring decisions were made at a management level above the store level.

Nevertheless, that members of *store*-level management (store, assistant, and relief) may have played a role in this process is possible. It is plausible that the store-level managers would be involved in (if not ultimately responsible for) the hiring of cashiers, stockers, and meat and produce employees. Also plausible is that the assistant or relief manager would be involved in the hiring of baggers even if a store manager is present. In column (2), we explore these possibilities by including a variable measuring the fraction Hispanic among the store-level managers. This variable has a significant positive coefficient only in the case of meat and produce employees, suggesting that the ethnicity of the store-level managers is relevant in the meat and produce departments. However, the estimated effect of having a Hispanic *department* manager remains unchanged.

The fixed effect equations used in columns (1) and (2) control for permanent differences across stores and for time-series variation that is common to all stores. But they do not control for differences across stores that also vary over time. Hence, if some determinants of hiring patterns varied both across stores and over time, the estimates resulting from Equation (1) would be biased. For example, if trends in local demographics led to parallel trends in the applicant pool demographics of both managers and

employees, then the fixed effects estimates would overstate the role of manager ethnicity in determining who is hired.

To address this issue, we estimate three variations of Equation 1. First, we include as controls two variables that serve as proxies for the share of Hispanics in the local labor pool in each year. These control variables are the Hispanic share of department managers and the Hispanic share of employees in all departments *other than* the one being analyzed. The logic of this specification is that the ethnic composition of different departments should be correlated to the extent that they all reflect the ethnic composition of the labor pool. We exploit the combination of time-series and interdepartmental variation in manager ethnicity to ask, for example: Holding constant the ethnic composition of managers and employees in the rest of the store in a given year, do more Hispanic stockers get hired under Hispanic night crew chiefs than under non-Hispanic night crew chiefs?

The coefficients from this specification are shown in column (3). We find a significant coefficient on the new control variables in only one case—the negative coefficient on the Hispanic share of non-stocking department managers in the analysis of new hires for the stocker position. This negative coefficient implies that when there are more Hispanic managers in the meat and produce departments, the stocking department is less likely to hire Hispanics. A possible explanation is that when there are job openings in more than one department and when the meat or produce manager is Hispanic, Hispanic applicants tend to be hired as meat or produce workers and consequently are less likely to be hired as stockers.

In no case is the probability of hiring a Hispanic significantly correlated with the Hispanic share of employees in the rest of the store. And in no case does controlling for store demographics reduce the coefficient on *Mgr_Hispanic*. Hence, the results in column (3) generally support the conclusion that the estimates from columns (1) and (2) are not driven by changes in the labor pools of stores.

Our second version of Equation (1) includes store-specific trends in addition to store fixed effects. The estimates from this specification are shown in column (4), and can be interpreted as showing whether a change in the ethnicity of the manager leads to a deviation from the trend in the Hispanic share of the group being analyzed. Estimating store-specific trends with precision is difficult, however, because our panel is relatively short, and we have a small number of observations per store—except in the case of baggers.

In the analysis of baggers, we do have a reasonable degree of precision. Here the coefficient on *Mgr_Hispanic* remains very close to what it was in the first three specifications and also remains statistically significant. So here column (4) reinforces the conclusion drawn from the estimate in column (3). Within the same store and hiring from an ethnically similar labor pool, more Hispanic baggers are hired under Hispanic managers than under non-Hispanic managers.

For the other positions, when we include store-specific trends, the coefficients on *Mgr_Hispanic* do change but the standard errors become much

larger. As a result, none of the coefficients on *Mgr_Hispanic* is statistically different from zero. In the analysis of meat and produce employees, the positive coefficient drops from 0.26 (in the first three columns) to 0.18 and loses its statistical significance. Given the lack of precision, drawing firm conclusions from this result is difficult. But because the estimated coefficient remains positive and large, it is consistent with the conclusion that manager ethnicity affects hiring patterns in the meat and produce departments.

To examine the meat and produce departments further, we estimate a third version of Equation (1). This test exploits both interdepartment variation in manager ethnicity and variation over time. Using only meat and produce employees, this equation includes store-year fixed effects (μ_{jt}):

$$(2) \qquad Hispanic_{ijt} = \alpha + \beta\ Mgr\_Hispanic_{ijt} + Meat\_Cutter_{ijt}\gamma + Prod\_Clerk_{ijt}\delta + \mu_{jt} + \varepsilon_{ijt}$$

With β constrained to be the same across the three job categories in the meat and produce departments, this model is identified off of store-years in which the meat manager is an ethnicity different from that of the produce manager. Because it controls for job title, this specification also exploits the fact that some store-years have a non-Hispanic produce manager and a Hispanic meat manager, while in others the reverse is true. Thus a positive value for β would indicate that more Hispanics are hired into the department with the Hispanic manager than into the department with the non-Hispanic manager.

The estimated coefficient is shown in column (5), and it is positive. While only marginally significant ($p = .10$), it is large in magnitude and suggests nearly a 60 percentage point difference between departments with Hispanic and non-Hispanic managers in the probability that a Hispanic employee is hired.

A final issue for interpreting the coefficients on manager ethnicity: in years when management changes occurred, we do not observe whether the change occurred before or after the new hire was made. Hence, the coefficients could partly reflect the effect of new *employee* ethnicity on the ethnicity of the new manager. To assess this possibility, we re-estimated our models for the sample that excludes years when manager changes occurred. For this sample, the coefficients for baggers are larger and remain statistically significant. For meat and produce employees, the coefficients are roughly 15% smaller and the standard errors twice as large due to the reduced sample size; however, the coefficients remain positive and range from .15 to .26. Because we know with certainty that the managers in this restricted sample were already employed when the new hires were made, these results provide reassurance that the full sample estimates are not driven by reverse causality.

From the analysis of new hires, we conclude that in four of six job positions, Hispanics are significantly more likely to be hired if the manager is Hispanic. For cashiers and stockers, the estimates are small and statistically insignificant. But for baggers and for meat and produce employees, we estimate large and statistically significant effects.

Why and When Do Hiring Patterns Depend on Manager Ethnicity?

Our hiring conclusions raise two questions. First, *why* do hiring patterns differ under Hispanic and non-Hispanic managers? And second, why are differences observed for some jobs and not for others? While these questions cannot be answered conclusively with our data, this section provides some partial answers. To address the first question, we start by considering what potential explanations are suggested by the previous literature. We then ask which of these explanations are most consistent with the institutional features of our firm, and with the results of some additional analysis. Finally, we ask what features distinguish the jobs for which manager ethnicity affects hiring patterns from those for which we find no effect.

The existing literature on discrimination and segregation in the labor market suggests that the differences in hiring patterns between Hispanic and non-Hispanic managers may be caused by three factors: discrimination, job-search networks, and production complementarities. First, as in Becker's (1971) model, segregated hiring could result from taste-based discrimination by either managers or employees. In the next section we argue that employee discrimination is unlikely; here we consider only managerial discrimination. Previous empirical studies have found evidence of employer discrimination in hiring—including audit studies (e.g., Kenney and Wissoker 1994) and other experimental studies (e.g., Bertrand and Mullainathan 2004)—however, these studies have not directly linked discrimination to manager traits or preferences.

Second, differential hiring patterns could occur if segregated social networks are used either by job seekers to reduce search costs (Calvó-Armengol and Jackson 2004) or by employers to reduce uncertainty about applicant productivity (Montgomery 1991; Dustmann, Glitz and Schoenberg 2011). Recent studies have found convincing evidence that informal networks play an important role in hiring (e.g., Bayer, Ross, and Topa 2008) and that such networks are especially important for ethnic minorities—including Hispanics in the United States (Hellerstein, McInerney, and Neumark 2011) and immigrant groups in Germany (Dustmann et al. 2011).[17] However, these studies do not distinguish between the networks of coworkers and managers.

A third possible motive for the firm to hire employees who share the manager's ethnicity is the existence of production complementarities between ethnically similar managers and employees. Such complementarities may arise because communication and mentoring are facilitated by shared language or culture (Lang 1986; Lazear 1999; Athey, Avery, and Zemsky 2000).

Of course, these explanations are not mutually exclusive and the mechanisms may even reinforce one another. For example, firms might use managers' social networks to select new hires not only to reduce uncertainty about applicant productivity but also to exploit production complementarities that arise when manager and employee are socially acquainted. Also,

[17]Earlier studies also found evidence consistent with these conclusions; see Ioannides and Datcher Loury 2004 for a survey of this literature.

racial or ethnic preferences may cause social networks to be segregated, and may thus affect hiring patterns indirectly, even if managers do not discriminate directly among applicants.

Which of these mechanisms is most likely to explain the hiring patterns at our firm? As a first step toward answering this question, we consider what we know about how hiring decisions were made. As noted earlier, store managers had authority to hire baggers, but other employees were hired at the corporate level and assigned to the store. While managerial discrimination might explain the results for baggers, it cannot explain the patterns for meat and produce employees. If a common explanation is possible, therefore, it likely stems either from a reliance on ethnically segregated job-search networks or from the employer's desire to exploit production complementarities based on ethnic similarity.

While distinguishing between network-based mechanisms and the firm's intentional matching of employees to similar managers is difficult, two additional sets of results reveal more about how each of these mechanisms might operate. First, instead of new hires, we examine how manager ethnicity affects the composition of employees who *transfer* into a store from the same job at another store location. Transfers differ from new hires in at least three basic ways: 1) they likely have more information about job openings within the firm; 2) the firm has more information about their productivity; and 3) they should require much less training. In turn, these differences suggest two things. On the one hand, if the differential hiring patterns are driven either by job-seekers' use of networks to find jobs or by the employer's use of networks to reduce uncertainty about applicant quality, then we should *not* find similar patterns in the analysis of new transfers.[18] On the other hand, if the firm intentionally tries to match new hires to same-ethnicity managers because ethnic similarity improves productivity, then we might expect to find similar patterns for transfers. If we do not, then we can conclude that either production complementarities are unimportant or they are important only for new employees—for example, because ethnic similarity facilitates training.

The results of the analysis of new transfers are shown in Table 7.[19] Baggers are not included in this analysis because rarely does a bagger transfer to the same position at another store. In the meat and produce departments, there is no job position for which manager ethnicity affects the probability that a transfer is Hispanic. The estimates are all very close to zero and are estimated with at least as much precision as those from our hiring analysis.

[18]Aslund et al. (2012) perform a similar test by comparing the effects of manager origin on hiring patterns for all new hires to hires who previously worked with the manager at a different establishment. They find that similarity matters less in the latter cases for which, they argue, information asymmetries are likely to be greatly reduced.

[19]The analysis is identical to that which produced the results in Table 6 except that the dependent variable is defined with respect to new horizontal transfers into the store instead of new hires. The analysis excludes employees who are promoted when they transfer, and the two competing risks for horizontal transfers—separations from the company and transfers due to promotion—are treated as censored.

Table 7. Probability That a New *Transfer* Is Hispanic as a Function of Manager's Ethnicity

Cashiers	*(1)*	*(2)*	*(3)*	*(4)*	
Store manager is Hispanic	**–0.066** (0.105)	**–0.170** (0.169)	**–0.065** (0.154)	**–0.455**** (0.154)	
Salaried managers, % Hispanic	—	0.227 (0.296)	—	—	
Department managers, % Hispanic	—	—	–0.118 (0.118)	—	
Other employees, % Hispanic	—	—	0.111 (0.772)	—	
Observations	432	432	432	432	
R-squared	0.16	0.17	0.17	0.26	
Stockers	*(1)*	*(2)*	*(3)*	*(4)*	
Night crew chief is Hispanic	**–0.002** (0.096)	**–0.005** (0.097)	**–0.026** (0.108)	**0.017** (0.204)	
Salaried managers, % Hispanic	—	–0.012 (0.232)	—	—	
Other department managers, % Hispanic	—	—	–0.194‡ (0.097)	—	
Other employees, % Hispanic	—	—	0.697 (0.577)	—	
Observations	358	358	358	358	
R-squared	0.30	0.30	0.31	0.43	
Meat and Produce Employees	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Department manager is Hispanic	**–0.042** (0.081)	**–0.033** (0.078)	**–0.055** (0.079)	**0.042** (0.115)	**0.188** (0.315)
Salaried managers, % Hispanic	—	–0.588** (0.218)	—	—	—
Other department managers, % Hispanic	—	—	–0.235* (0.112)	—	—
Other employees, % Hispanic	—	—	–0.179 (0.589)	—	—
Observations	407	407	407	407	407
R-squared	0.22	0.23	0.23	0.32	0.58
Model includes	*Store fixed effects (FEs)*	*Store fixed effects*	*Store fixed effects*	*Store FEs + store trends*	*Store-Year fixed effects*

Notes: Estimates from linear probability models in which dependent variable = 1 if an employee who has newly transferred from the same position in another store is Hispanic and 0 otherwise. Separations from the company and transfers with promotion are treated as censored. See also notes from Table 6.

These results are therefore consistent with a role for network-based hiring and also suggest that if production complementarities are important, then they must be important mainly for new employees.

A second supplementary analysis considers the distinction between networks of managers and those of current employees. As noted above, while several recent studies find evidence that informal networks play an important role in hiring, the previous literature has generally not distinguished between manager and employee networks.[20] If the employer used networks to reduce uncertainty about job applicants, then managers' networks may be more important than employees' networks because the managers' recommendations are likely to carry more weight (even if the managers themselves are not directly responsible for the hiring decisions). Alternatively, if the main function of the networks is to inform job-seekers about job openings, then employee networks may be equally important.

We explore the potential role of employee networks by including in the hiring models two measures of coworker ethnic composition—the fraction

[20]An exception is Giuliano et al. (2009), who provide evidence based on residential zip codes that managers tend to hire employees who live closer to the area in which the manager resides.

of all coworkers (in the same job) who are Hispanic at the time an employee is hired and the presence of at least one Hispanic coworker. The results, presented in Appendix Table A.2, suggest that if informal networks are used in hiring, it is the managers' networks that matter. Indeed, all of the coefficients on the coworker ethnicity variables are negative—which is the opposite of what we would expect if new hires were referred by same-ethnicity coworkers.

Finally, to address the question of why manager ethnicity affects hiring in some jobs and not others, we look for features that distinguish the set of jobs for which we find an effect (baggers, meat wrappers, meat cutters, and produce clerks) from those for which we don't (cashiers and stockers). In Table 2, we saw several differences in employee characteristics across the six job types—including differences in gender composition and in average wage, age, and tenure. But in none of these variables is there a commonality among the four jobs for which hiring patterns are affected. Returning to Table 1, however, we see that one thing these positions do have in common is a relatively small number of employees per store. The average store has 3.2 baggers, 1.1 meat wrappers, 2.1 meat cutters, and 1.6 produce clerks. By contrast, the typical store has 8.0 cashiers and 6.4 stockers. This comparison suggests that manager ethnicity affects the probability of hiring a Hispanic employee only in departments with few employees.

To test this hypothesis more formally, we pool newly hired employees in all jobs and estimate versions of Equation (1) that include the interaction of *Mgr Hispanic* with a dummy variable indicating jobs or departments with two or fewer current employees.[21] The coefficient on the interaction term is 0.25 ($t = 1.64$), suggesting again that manager ethnicity matters much more where the number of employees is small.

Unfortunately, the finding that ethnic similarity matters only in smaller departments does not help us isolate the responsible mechanisms; however, it is at least consistent with our conclusion that either hiring networks or production complementarities are likely to play a role. In particular, hiring low-quality employees or those who have trouble interacting with the manager may be especially costly in small departments. When the numbers are small, not only does each employee have a relatively large impact on overall productivity, but new employees are also more likely to rely on their managers (rather than coworkers) for training and mentoring.[22] As a result, the use of hiring networks or intentional matching of new employees to ethnically similar managers may both operate with greater force in such departments.[23]

[21]In the case of meat wrappers and meat cutters, our definition of coworkers includes all meat department employees except the manager. The estimation equation includes dummy variables indicating each of the job titles. Also, because larger stores have larger departments and are also located in cities with more Hispanics, we also control for the interaction of *Mgr Hispanic* with the average Hispanic share of all employees in the store.

[22]To be sure, the bagger position is a low-skill job and may not require much training. Nevertheless, quality mentoring and supervision of employees in these entry-level jobs may be important because of their potential to be promoted to higher-paying positions.

[23]This explanation would be consistent with the evidence found in previous studies that network-based hiring practices are more widespread at smaller firms (Holzer 1998; Hellerstein et al. 2011).

Manager-Employee Ethnic Differences and Employee Separation Rates

We examine the effect of manager–employee ethnic differences on employee separation rates by estimating linear probability models for which the dependent variable is equal to 1 if an individual separated from the firm within the following year. We again exploit within-store variation in manager ethnicity to control for unobserved differences across workplaces, because it is again important to distinguish the effects of differences in manager ethnicity from unobserved workplace differences. For example, suppose that neighborhoods are segregated and that Hispanic managers tend to work at stores in Hispanic neighborhoods while white managers work in white neighborhoods. Hispanic employees who work at the stores with white managers might then have lower job attachment simply because they have longer commutes.

The information on ethnicity is fully contained in just two variables: the ethnicity of the employee and the ethnicity of the manager. To simplify the analysis slightly, we focus on the case in which there are only two ethnic groups—Hispanics and non-Hispanics.[24] Denote the ethnicity of the employee by the indicator "h," which takes on a value of 1 for Hispanic employees. Denote the ethnicity of the manager by "H," which takes on a value of 1 for Hispanic managers. An interaction of h and H describes completely the ethnic dissimilarity between the employee and the manager.

One useful model that summarizes the effects of ethnicity on separation rates is:

$$(3) \qquad \begin{aligned} Separated_{ijt} = {} & \beta_0 + \beta_1\, h_{it}H_{it} + \beta_2\,(1 - h_{it})H_{it} + \beta_3\, h_{it}(1 - H_{it}) \\ & + X_{it}\gamma + W_{jt}\delta + \lambda_t + \mu_j + \varepsilon_{ijt}. \end{aligned}$$

In this model, β_1 measures the separation rate of Hispanic employees with Hispanic managers relative to white employees with white managers (the omitted category). Likewise, β_2 measures the relative rate for white employees with Hispanic managers, and β_3 measures the relative rate for Hispanic employees with white managers. The vector X_{it} of employee characteristics includes gender, age and its square, and tenure and its square.[25] We also control for store and year fixed effects (μ_j and λ_t) and workforce characteristics that vary over time within stores (W_{jt}).

An alternative normalization yields this model:

$$(4) \qquad \begin{aligned} Separated_{ijt} = {} & \alpha_0 + \alpha_1\, h_{it} + \alpha_2 H_{it} + \alpha_3\,[(1 - h_{it})H_{it} \\ & + h_{it}(1 - H_{it})] + X_{it}\gamma + W_{jt}\delta + \lambda_t + \mu_j + \varepsilon_{ijt}. \end{aligned}$$

[24]When estimating our models of separations, we exclude non-white, non-Hispanic employees and managers. Because this "other ethnicity" is very small (especially among managers), this sample restriction has very little effect on the estimates.

[25]We have also estimated models that control for current wage rates. However, wages do not predict turnover, nor are they correlated with manager–employee ethnic differences. Hence, controlling for wages has no effect on our results. Though this finding might be surprising in other contexts, recall that wages at our firm are determined by the union contracts and are tied closely to seniority, and that the analysis here is within job category.

In this formulation, α_1 describes the direct effect of Hispanic ethnicity, α_2 the direct effect of having a Hispanic manager, and α_3 estimates the effect of having a manager who is ethnically dissimilar. This model normalizes the regression coefficients by requiring the effect of having an ethnically dissimilar manager to be the same for both Hispanic and white employees. (Clearly, at least one such normalization is required, since we have only *h*, *H*, and *hH* as possible regressors—we cannot estimate four independent slope parameters.) Thus, we think of α_3 as "the" dissimilarity effect. A positive value for α_3 would indicate that employees whose manager is an ethnicity different from the employee are more likely to separate from the firm within the following year. Conceptually, the effect of dissimilarity might be different across ethnic groups; however, it is not possible to estimate different dissimilarity effects if we also allow a direct effect of employee's and manager's ethnicity.[26]

We estimate several variations of Equations (3) and (4), and we run separate regressions for each of four groups: baggers, cashiers, stockers, and meat and produce employees.[27] The results are reported in Tables 8 and 9. First, Table 8 shows the estimates of (3). For all job groups, except stockers, the separation rate for Hispanic employees with Hispanic managers is significantly lower than for the reference group. These differences are statistically significant in most specifications. For baggers and for employees in the meat and produce departments, Hispanic employees who work under white managers also appear to have lower relative separation rates.

Table 9 reports our estimates of the dissimilarity effect (α_3) from Equation (4), as well as the direct effects of employee and manager ethnicity and the coefficients on the other key control variables in each model. Here, we see that the direct effect of employee ethnicity is often statistically significant, indicating that Hispanic employees generally have lower rates of separation. The effect of being an ethnicity different from one's manager is significant and robust for only one group—cashiers. Specifically, the estimates of α_3 suggest that cashiers are roughly 4.5 percentage points (40%) more likely to separate from the firm when they have an ethnically dissimilar manager. For baggers, the estimate of α_3 is positive in column (1), which controls only for employee characteristics plus store and year fixed effects, but it is not robust to the inclusion of additional controls. And for stockers and meat and produce employees, the estimates of α_3 are consistently very close to zero. The estimates are similarly close to zero when we estimate separate regressions for meat wrappers, meat cutters, and produce clerks, and there are no significant differences in the dissimilarity effects among these three job titles.

The effects of our additional control variables are seen in columns (2) to (5). Column (2) examines whether separations are related to the fraction of all salaried managers that share the employee's ethnicity. This could be the case,

[26]If the effect of having an ethnically dissimilar manager differs for whites with Hispanic managers and for Hispanics with white managers, then α_3 is the average dissimilarity effect with the two groups weighted equally.

[27]As in the hiring analysis, we adjust the standard errors to account for clustering at the store level.

Table 8. Probability of Separation by Ethnic Group of Employee and Manager

Baggers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Hispanic employee, Hispanic manager	–0.271** (0.089)	–0.254* (0.103)	–0.251** (0.089)	–0.272** (0.092)	0.080 (0.106)
White employee, Hispanic manager	0.076 (0.208)	–0.104 (0.234)	0.037 (0.217)	0.033 (0.214)	0.227 (0.174)
Hispanic employee, White manager	–0.063 (0.041)	–0.248** (0.086)	–0.113** (0.040)	–0.091 (0.078)	–0.122** (0.045)
Observations	1,495	1,495	1,495	1,495	1,495
R-squared	0.14	0.14	0.15	0.15	0.19
Cashiers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Hispanic employee, Hispanic manager	–0.095** (0.035)	–0.121** (0.039)	–0.073‡ (0.037)	–0.096* (0.043)	–0.119‡ (0.060)
White employee, Hispanic manager	0.015 (0.033)	0.002 (0.050)	0.030 (0.031)	0.020 (0.038)	–0.008 (0.059)
Hispanic employee, White manager	–0.017 (0.014)	–0.006 (0.036)	–0.004 (0.038)	–0.008 (0.053)	–0.022 (0.041)
Observations	3553	3553	3553	3553	3553
R-squared	0.07	0.07	0.07	0.07	0.09
Stockers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Hispanic employee, Hispanic manager	–0.008 (0.050)	0.009 (0.044)	0.017 (0.052)	–0.007 (0.053)	0.071 (0.063)
White employee, Hispanic manager	0.010 (0.038)	0.009 (0.038)	0.015 (0.040)	0.015 (0.046)	0.051 (0.043)
Hispanic employee, White manager	–0.041* (0.018)	–0.019 (0.031)	–0.005 (0.025)	–0.037 (0.031)	0.012 (0.029)
Observations	2192	2192	192	2192	2192
R-squared	0.06	0.06	0.06	0.07	0.09
Meat and Produce Employees	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Hispanic employee, Hispanic manager	–0.059‡ (0.034)	–0.143‡ (0.081)	–0.072* (0.036)	–0.122 (0.093)	–0.104** (0.039)
White employee, Hispanic manager	–0.021 (0.023)	–0.021 (0.023)	–0.023 (0.023)	–0.008 (0.025)	–0.052* (0.024)
Hispanic employee, White manager	–0.048‡ (0.025)	–0.138‡ (0.077)	–0.073* (0.029)	–0.154 (0.097)	–0.074* (0.030)
Observations	1982	1982	1982	1982	1982
R-squared	0.09	0.09	0.09	0.10	0.13
Model includes	*Store fixed effects (FEs)*	*Store fixed effects*	*Store fixed effects*	*Store FEs + % Hispanic in other depts.*	*Store FEs + store trends*

Notes: Estimates from linear probability models in which dependent variable = 1 if the employment with the company was terminated within the year. Estimation sample includes all employees present on Dec. 31 for each year from 1976–1984. Sample excludes non-white, non-Hispanic employees and managers, as well as employees in stores that closed the following year. Omitted category is white employee, white manager. Additional controls include employee gender, age, tenure, age squared, and tenure squared; the number of salaried managers present; a dummy equal to 1 if the highest-ranking manager is the assistant manager; a dummy equal to 1 if the highest-ranking manager is relief manager; dummy variables for eight of nine years. Column (3) controls for the fraction of salaried managers who are Hispanic and the fraction non-white. Columns (4) and (5) control for the fraction of coworkers who are Hispanic and the fraction non-white; the number of coworkers; and a dummy equal to 1 if the employee has no coworkers. (If the employee has no coworkers, then the fraction of each ethnicity and the fraction whose ethnicity differs are all set equal to 0.) Column (5) also controls for the fraction Hispanic and the fraction non-white of other department managers and of other employees. The models for meat and produce employees also include indicators for the employee's current job title (meat wrapper, meat cutter, or produce clerk). Robust standard errors (in parentheses) are adjusted for clustering on store. **significant at 1%, *significant at 5%, ‡significant at 10%.

Table 9. Probability of Separation as a Function of Ethnic Dissimilarity from Manager

Baggers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	–0.205** (0.065)	–0.199* (0.076)	–0.201** (0.070)	–0.198** (0.070)	–0.134* (0.058)
Store manager is Hispanic	–0.066 (0.146)	–0.055 (0.163)	–0.050 (0.150)	–0.074 (0.138)	0.214 (0.133)
Store manager is an ethnicity other than that of the employee	0.142* (0.066)	–0.049 (0.101)	0.088 (0.073)	0.107 (0.090)	0.013 (0.055)
% salaried managers whose ethnicity differs from that of the employee	—	0.219* (0.096)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	0.135 (0.056)	0.162* (0.053)	0.159** (0.058)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	–0.033 (0.073)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	–0.039 (0.152)	—
Observations	1,495	1,495	1,495	1,495	1,495
R-squared	0.14	0.14	0.15	0.15	0.19
Cashiers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	–0.064** (0.011)	–0.065** (0.010)	–0.053* (0.023)	–0.063* (0.029)	–0.067** (0.023)
Store manager is Hispanic	–0.031 (0.032)	–0.056 (0.038)	–0.020 (0.028)	–0.034 (0.034)	–0.052 (0.054)
Store manager is an ethnicity other than that of the employee	0.046** (0.008)	0.058‡ (0.033)	0.050** (0.018)	0.054* (0.026)	0.044* (0.020)
% salaried managers whose ethnicity differs from that of the employee	—	–0.014 (0.037)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	–0.016 (0.048)	–0.023 (0.054)	0.001 (0.053)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	–0.031 (0.031)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	0.020 (0.098)	—
Observations	3,553	3,553	3,553	3,553	3,553
R-squared	0.07	0.07	0.07	0.07	0.09

continued

Table 9. Continued

Stockers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	–0.018 (0.031)	–0.005 (0.045)	0.018 (0.040)	–0.071 (0.058)	–0.005 (0.037)
Night crew chief is Hispanic	0.053 (0.043)	0.055 (0.045)	0.056 (0.041)	0.059 (0.046)	0.045 (0.049)
Night crew chief is an ethnicity other than that of the employee	–0.015 (0.031)	–0.014 (0.032)	–0.008 (0.032)	–0.018 (0.030)	–0.001 (0.032)
% salaried managers whose ethnicity differs from that of the employee	—	–0.014 (0.032)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	–0.083 (0.052)	–0.121‡ (0.065)	–0.047 (0.048)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	–0.016 (0.028)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	0.175‡ (0.095)	—
Observations	2,192	2,192	2,192	2,192	2,192
R-squared	0.06	0.06	0.06	0.07	0.09
Meat and Produce Employees	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	–0.039 (0.023)	–0.120 (0.086)	–0.057* (0.027)	–0.107 (0.110)	–0.057* (0.026)
Department manager is Hispanic	–0.014 (0.020)	–0.013 (0.018)	–0.009 (0.019)	0.013 (0.023)	–0.042‡ (0.024)
Department manager is an ethnicity other than that of the employee	0.001 (0.015)	–0.003 (0.014)	–0.006 (0.015)	–0.015 (0.015)	–0.007 (0.018)
% salaried managers whose ethnicity differs from that of the employee	—	0.096 (0.090)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	0.053‡ (0.030)	0.036 (0.026)	0.046 (0.030)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	0.017 (0.026)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	0.074 (0.142)	—
Observations	1,982	1,982	1,982	1,982	1,982
R-squared	0.09	0.09	0.09	0.10	0.13
Model includes	*Store fixed effects (FEs)*	*Store fixed effects*	*Store fixed effects*	*Store FEs + % Hispanic in other depts.*	*Store FEs + store trends*

Note: See notes to Table 8.

for example, if the presence of same-ethnicity role models or mentors were an important determinant of job attachment. We find some evidence that this variable is related to separation rates for baggers, but not for other employees.

If employees prefer working with similar others, then separation rates could also be affected by changes in the ethnic composition of an employee's coworkers. We examine this hypothesis in column (3), which adds a variable measuring the fraction of coworkers who are an ethnicity different from the employee. This variable is set equal to 0 for employees with no coworkers, and we include a dummy variable for employees with no coworkers. We also control for the number of coworkers and for the fraction of coworkers in each ethnic group. We find significant effects of coworker dissimilarity on separations for only one job type: baggers. For baggers, a 50 percentage point increase in the share of coworkers who are a different ethnicity (e.g., an increase from one out of two to two out of two coworkers) corresponds to roughly a 7 percentage point (or 15%) increase in the probability of separation.

Columns (4) and (5) show the results from specifications that control for changes in the ethnic composition of each store's labor pool over time. Column (4) controls for the fraction of managers and employees in other departments who are an ethnicity different from the employee, and for the fraction of those other managers and employees who are Hispanic. Column (5) drops these variables but adds store-specific trends to the model. The estimated effect of having a dissimilar manager on cashier separation rates is robust to these last two model specifications, though the estimates become somewhat less precise. The effect of coworker dissimilarity on bagger separation rates is also robust. And finally, the estimated effects of manager–employee dissimilarity for stockers and for meat and produce employees remain very close to zero.

Decisions regarding separations are not always made by the employees, and unfortunately we cannot distinguish quits from dismissals. Under the union contract, however, employees may be dismissed only for cause, so overall separation rates should be closely tied to quit rates. And because quits are employee decisions, differential separation rates should largely reflect employee bias. Hence, the analysis of separations can help us assess whether employee discrimination plays a role in the overall ethnic segregation of the workforce. As we shall see, this includes whether employee discrimination explains the differential hiring patterns.

If employee discrimination manifests itself in higher separation rates among employees with ethnically dissimilar managers, then our results suggest that with the possible exception of cashiers, employee discrimination is not an important source of ethnic segregation at this firm.[28] It must be acknowledged, however, that even if employees are discriminating, there

[28]To the extent that employee separations reflect managerial decisions or treatment of employees, the separations results reinforce our earlier conclusion that managerial discrimination is unlikely to play an important role.

are reasons why manager–employee ethnic differences might not lead to higher separation rates.

First, our data have information only on employees who were present on December 31 of each year. Hence, if employees who dislike working for dissimilar managers tend to quit after only a few months, then many of those employees will be missing from our data. In this case, the estimates from our sample will understate the effect that ethnic dissimilarity has on separation rates.[29] The extent of this problem can be assessed by asking whether the estimated effects of ethnic dissimilarity on separations are larger among employees who have been hired very recently (e.g., within three, six, or nine months). We find no significant differences by employee tenure. Therefore our results are unlikely to be affected by the exclusion of short employment spells from our sample.

Second, employee discrimination might not affect separation rates if employees who would quit rather than work for an ethnically different manager simply refuse to take jobs with dissimilar managers in the first place. But at some point during their employment with the firm, many employees in our sample receive new managers (i.e., different from the ones they chose to work for). Hence employee selection at the hiring stage does not guarantee that employees with discriminatory preferences will never have an ethnically dissimilar manager. Moreover, we re-estimate our model using only the subsample of employees who received new managers, and our estimated effects of manager–employee dissimilarity remain very close to zero.

Third, employee discrimination might not affect separation rates if employees who want to stop working with their current manager have the option of transferring instead of quitting. Table 10 shows the results of regression analysis identical to that which produced Table 9—except that the dependent variable is a dummy variable equal to 1 if the employee transferred to another store within the next year. While the results suggest employee discrimination may have a small effect on transfers among stockers, the estimates are not statistically significant. And for the rest of the jobs, the estimates are close to zero. Furthermore, we re-estimate these models after restricting the sample to employees who receive new managers (as in the separations analysis), and again we find no significant effects of ethnic differences between manager and employee.

The weight of the evidence suggests that for all jobs except cashiers, employee discrimination probably is not an important source of segregation at our workplace. The evidence suggests it does not affect separation rates. What's more, our analyses of employees who receive new managers also suggest that employee discrimination cannot explain different hiring rates of Hispanic employees under Hispanic and non-Hispanic managers. If employees

[29]Such differential quit rates could also cause the estimates from our analysis of new hires to overstate the effects of manager ethnicity, because new hires whose ethnicity differed from the managers, having quit more quickly, would be underrepresented in our data. This is unlikely to be an issue for meat and produce employees, whose average tenure ranges from 6.5 to 9 years, but is a potential issue for baggers.

Table 10. Probability of Transfer Out as a Function of Ethnic Dissimilarity from Manager

Cashiers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	–0.011 (0.032)	–0.002 (0.032)	–0.032 (0.035)	–0.061 (0.038)	–0.006 (0.033)
Department manager is Hispanic	0.126* (0.061)	0.153* (0.061)	0.151* (0.060)	0.168** (0.063)	0.151‡ (0.078)
Department manager is an ethnicity other than that of the employee	0.008 (0.030)	–0.052 (0.047)	–0.017 (0.037)	–0.041 (0.043)	–0.030 (0.040)
% salaried managers whose ethnicity differs from that of the employee	—	0.061 (0.045)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	0.073 (0.047)	0.054 (0.053)	0.086‡ (0.051)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	–0.042 (0.035)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	0.123 (0.100)	—
Observations	3,339	3,339	3,339	3,339	3,339
R-squared	0.09	0.09	0.09	0.09	0.11
Stockers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	–0.031 (0.025)	0.024 (0.044)	–0.032 (0.031)	–0.049 (0.060)	–0.038 (0.034)
Department manager is Hispanic	0.037 (0.046)	0.034 (0.047)	0.038 (0.047)	0.049 (0.051)	0.044 (0.052)
Department manager is an ethnicity other than that of the employee	0.034 (0.026)	0.040 (0.027)	0.038 (0.027)	0.035 (0.029)	0.038 (0.028)
% salaried managers whose ethnicity differs from that of the employee	—	–0.069 (0.049)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	–0.011 (0.052)	–0.005 (0.062)	–0.020 (0.059)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	–0.048 (0.038)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	0.050 (0.112)	—
Observations	1,962	1,962	1,962	1,962	1,962
R-squared	0.10	0.10	0.10	0.10	0.14
Meat and Produce Employees	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Employee is Hispanic	0.040 (0.025)	0.027 (0.058)	0.037 (0.027)	0.000 (0.083)	0.034 (0.029)
Department manager is Hispanic	–0.026 (0.027)	–0.022 (0.028)	–0.025 (0.027)	–0.004 (0.029)	–0.026 (0.032)
Department manager is an ethnicity other than that of the employee	–0.004 (0.025)	–0.004 (0.025)	–0.004 (0.025)	–0.002 (0.026)	–0.002 (0.025)
% salaried managers whose ethnicity differs from that of the employee	—	0.015 (0.064)	—	—	—
% coworkers whose ethnicity differs from that of the employee	—	—	–0.002 (0.030)	–0.008 (0.033)	–0.016 (0.031)
% other dept. managers whose ethnicity differs from that of the employee	—	—	—	0.003 (0.030)	—
% other employees whose ethnicity differs from that of the employee	—	—	—	0.049 (0.123)	—
Observations	1,851	1,851	1,851	1,851	1,851
R-squared	0.20	0.20	0.20	0.21	0.23
Model includes	*Store fixed effects (FEs)*	*Store fixed effects*	*Store fixed effects*	*Store FEs + % Hispanic in other depts.*	*Store FEs + store trends*

Notes: Estimates from linear probability models in which dependent variable = 1 if employee transferred to the same job in another store within the next year. Separations from the company and transfers with promotion are treated as censored. See also notes for Table 8.

were choosing their managers at the hiring stage on the basis of ethnic similarity, then when such employees receive new dissimilar managers, we should find the effects of ethnic dissimilarity in separations and transfers.

Finally, we should ask why we do find some evidence that ethnic differences lead to higher separation rates for cashiers, but not other jobs. What separates cashiers from the other jobs is again interesting to consider. Returning to Tables 2 and 3, we see that while all management positions and all other non–entry level positions were occupied predominantly by men, the cashier position is occupied almost entirely by women. Further, the probability of promotion for these women was very close to zero during our sample period, and a class action lawsuit brought by several female employees against the firm in the early 1980s suggests that the employees were both aware of and resentful of this statistic. Cashiers were thus predominantly female employees with male managers who had very low expectations of ever advancing within the firm. Perhaps under these working conditions, ethnic differences were more of a catalyst.

Conclusion

Using nine years of personnel records from a regional grocery chain, we examine the effect of manager ethnicity on hiring, transfer, and separation patterns. Also, we compare the effects of manager ethnicity across several job titles and across departments of different sizes. We find that manager ethnicity has significant effects on hiring patterns, but does not affect transfers, and affects separation patterns in only one atypical case. What's more, we find that the effects on hiring occur only in smaller departments.

While it is difficult to determine the reasons as to why manager ethnicity matters, the fact that it matters even when managers have no direct hiring authority suggests that discrimination is not the explanation. Instead, the evidence suggests that when hiring new employees, the firm either uses managers' informal networks for help in selecting productive employees or tries to match new hires to ethnically similar managers to exploit production complementarities. On the one hand, the network-based explanation is consistent with the absence of effects for transfers, since the firm already has information about its current employees. On the other hand, production complementarities are consistent with the findings for transfers only if the complementarities are limited to new employees (for example, because ethnic similarity facilitates training).

How well our study may generalize to other firms is difficult to determine, especially since our results suggest the role of manager ethnicity may vary even within firms and establishments. However, our findings do suggest that manager ethnicity matters more in jobs and departments in which the number of employees is small.

Appendix

Table A.1. Characteristics of Stores with Variation in Manager Ethnicity

	Sample				
Variable	*All stores*	*Any source of variation in manager ethnicity*	*Change in ethnicity of ≥1 manager due to manager turnover*	*Change in ethnicity of store manager due to manager turnover*	*Meat and produce managers are different ethnicities in ≥1 year*
Number of retail employees in store	28.8	28.6	28.9	28.3	28.5
Number of baggers	3.2	3.3	3.3	3.5	3.3
Number of cashiers	8.0	8.0	8.1	8.7	7.9
Number of stockers	6.4	6.3	6.3	5.3	6.3
Number of meat wrappers	1.1	1.1	1.1	1.0	1.0
Number of meat cutters	2.1	2.0	2.0	1.6	2.0
Number of produce clerks	1.6	1.6	1.6	1.6	1.6
% store's retail employees who are white, non-Hispanic	82.4	79.4	79.3	63.3	80.1
% store's retail employees who are Hispanic	14.9	17.7	17.9	35.9	17.0
% Hispanic of local population*	13.4	15.6	15.8	35.5	15.6
% Foreign-born of local population**	5.6	6.2	6.2	11.8	6.4
% Spanish-speakers who don't speak English well, of local adult population**	1.6	2.0	2.0	6.5	2.1
Number of stores	73	51	46	7	43

Note: See notes to Table 1.

Table A.2. Effect of Manager and Coworker Ethnicity on Probability That a New Hire Is Hispanic

Baggers	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
Store manager is Hispanic	0.518*** (0.100)	0.554*** (0.119)	0.507*** (0.105)	0.507*** (0.058)	0.618*** (0.072)	0.499*** (0.082)	—	—	—
% Hispanic of coworkers	—	–0.144 (0.092)	—	—	–0.359** (0.128)	—	—	—	—
≥1 Hispanic coworker	—	—	–0.095* (0.045)	—	—	–0.189*** (0.053)	—	—	—
Observations	1,172	1,172	1,172	1,172	1,172	1,172	—	—	—
R-squared	0.34	0.34	0.34	0.38	0.40	0.40	—	—	—
Cashiers									
Store manager is Hispanic	0.020 (0.089)	–0.186 (0.099)	0.002 (0.092)	0.400 (0.320)	1.127* (0.435)	0.314 (0.356)	—	—	—
% Hispanic of coworkers	—	–1.512** (0.438)	—	—	–3.373*** (0.731)	—	—	—	—
≥1 Hispanic coworker	—	—	–0.170* (0.078)	—	—	–0.345* (0.150)	—	—	—
Observations	422	422	422	422	422	422	—	—	—
R-squared	0.25	0.35	0.27	0.34	0.58	0.37	—	—	—
Stockers									
Night crew chief is Hispanic	0.205 (0.258)	–0.061 (0.276)	0.163 (0.293)	–0.160 (0.353)	–0.642 (0.702)	–0.293 (0.440)	—	—	—
% Hispanic of coworkers	—	–1.475* (0.651)	—	—	–3.057* (1.302)	—	—	—	—
≥1 Hispanic coworker	—	—	–0.071 (0.110)	—	—	–0.284 (0.163)	—	—	—
Observations	232	232	232	232	232	232	—	—	—
R-squared	0.45	0.51	0.45	0.61	0.72	0.63	—	—	—
Meat and Produce Employees									
Department manager is Hispanic	0.314** (0.100)	0.315** (0.105)	0.293** (0.098)	0.176 (0.256)	0.183 (0.273)	0.147 (0.260)	0.595‡ (0.352)	0.750 (0.520)	0.557 (0.400)
% Hispanic of coworkers	—	–0.098 (0.244)	—	—	–0.052 (0.418)	—	—	–0.501 (0.658)	—
≥1 Hispanic coworker	—	—	–0.227 (0.121)	—	—	–0.323 (0.206)	—	—	–0.575 (0.355)
Observations	175	175	175	175	175	175	175	175	175
R-squared	0.50	0.51	0.53	0.61	0.61	0.64	0.78	0.80	0.84
Store fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
% Hispanic in other departments	Yes	Yes	Yes	No	No	No	No	No	No
Store trends	No	No	No	Yes	Yes	Yes	No	No	No
Store-year fixed effects	No	No	No	No	No	No	Yes	Yes	Yes

Notes: See Notes to Table 6. For reference, columns 1, 4, and 7 reproduce columns 3, 4, and 5 from Table 6. Columns 1 to 3 include the same controls as in Table 6, column 3. Columns 4 to 6 include the same controls as in Table 6, column 4. Columns 6 to 9 include the same controls as in Table 6, column 5.

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