
The Effect of Workplace Gender and Race Demographic Composition on Hiring Through Employee Referrals

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This quantitative study tests whether the gender and race composition of the workplace helps explain why there are systematic differences in how employees are hired across gender and race. We find evidence that differences across racial groups in the use of employee referrals may be explained partly by differences in the race composition of the workplace. We also find evidence that recruiting source models that do not include workplace demographic composition may misestimate the effect of the new employee's race on the hiring source.

Increasing diversity of the workforce has made the recruitment and hiring process much more complex than in the past. Effectively and efficiently managing a diverse workforce is partly dependent on effectively and efficiently recruiting a diverse workforce. This study explores the issue of how the gender and race composition of a company's workforce affects hiring through different recruiting sources.

This study builds on recruiting source theories by combining them with organizational demography theory. We suggest that recruiting models concerned with the gender and race of recruits should consider the gender and racial demographic composition of the company's workplace. It is our belief that recruiting models that account for only the race and gender of the newly hired employee without controlling for organizational demographic composition may come to incorrect conclusions. Specifically, the race and gender of applicants may be less important empirically than previous research suggests.

Although there is no consensus about the effects of recruiting source on post-hiring outcomes, there is evidence that the use of informal recruiting

sources, and specifically employee referrals, is positively related to employee tenure, satisfaction, and productivity (Breaugh, 1981; Breaugh & Mann, 1984; Reid, 1972; Taylor & Schmidt, 1983; Fernandez, Castilla, & Moore, 2000). Employee referral is the most commonly used source (Marsden, 1994). However, despite the benefits of employee referrals, job seekers and employers use other recruiting sources as well. Furthermore, there is some evidence of systematic differences in the use of employee referrals across gender and race.

Recruiting sources can be divided usefully into two groups: formal and informal sources of recruitment. The more common informal source of recruitment is employee referrals. The more common formal sources of recruitment are campus recruiting, advertisements, and private agencies. Our analysis focuses on hiring through employee referrals compared to formal sources. Focusing on employee referrals is particularly pertinent not only because they have been shown to influence post-hiring outcomes positively but because applicants may not have access to employees if they are of a different race or gender from the current employees. A widely held belief is that people network with people like themselves and therefore people refer people like themselves (Doeringer & Piore, 1971; Montgomery, 1991). This suggests that the demographic composition of the organization may influence who is recruited through employee referrals and who is ultimately hired. More specifically, this suggests that the greater the percentage of employees of the same gender and race as a newly hired employee, the greater the probability that the newly hired employee was recruited through employee referral.

Although there has been a great deal of interest in the effects of organizational demographics on organizational outcomes, there is a dearth of research testing whether organizational demographic composition affects the relationship between applicant gender and race and recruiting source used. This is primarily due to the lack of data on the racial and gender compositions of companies. This study tests whether the percentage of current employees in the workplace of the same gender and race as the new employee influences the probability that that person was recruited through employee referral or a formal source.

Research on the effect of recruiting source on post-hiring outcomes must naturally be conditional on the applicant's actually being hired. In this study, we also focus on successful applicants. Our data allow us to investigate the relationship between the method of entry into the firm and the gender and racial makeup of the workplace. If a systematic relationship is observed between the method of hiring and the gender and racial makeup of the workplace, then many of the positive effects of employee referrals may be overstated. Recruitment source research may be picking up the effect of organizational demographic composition.

In the next section we discuss the evidence regarding systematic differences in the use of employee referrals across gender and race and explain

why differences in the gender and race demographic composition of the workplace may help explain these differences in recruiting source use. Then we generate and test hypotheses regarding the relationship between the gender and race makeup of the workplace and the use of employee referrals relative to more formal sources of entry into the firm.

Differences in the Use of Employee Referrals by Gender and Race

Using employee referrals, in comparison to other sources, minimizes search costs for both the potential recruit and the firm (Montgomery, 1991; Wanous, 1992). If enough qualified applicants could be generated by this procedure, we might expect to see only limited use of other informal and formal recruiting sources.

Using employee referrals can help both the applicant and the firm find better job matches. Rees (1966) and Ullman (1966) hypothesized that information about both the applicant and job that is provided by informal sources and specifically employee referrals would lead to reduced turnover and improved performance. In addition, Wanous (1992) suggests that providing realistic information through employee referrals to lower job expectations before recruits enter the organization can be thought of as a “vaccination” against the negative aspects of actual organizational life. In sum, there is evidence that use of employee referrals leads to decreased employee turnover and (although a weaker result) increased employee satisfaction and performance (Blau, 1990; Breaugh, 1981; Breaugh & Mann, 1984; Decker & Cornelius, 1979; Gannon, 1971; Granovetter, 1995; Reid, 1972; Saks, 1994; Ullman, 1966; Fernandez et al., 2000).

The relative costs of recruiting sources and the benefits from better job matches should lead both employers and applicants to choose employee referrals as the source of recruitment. However, researchers have hypothesized, and in some cases found, that not only do applicants and organizations use other sources, but that there may be systematic differences in the use of employee referrals across applicant gender and race (Campbell & Rosenfeld, 1985; Granovetter, 1995).

Although there is no consensus, evidence suggests that when controlling for occupation, women and blacks are less likely to use employee referrals than other sources. There are very strong correlations between occupation and the gender and race of the occupation holder. For example, Campbell and Rosenfeld (1985) found that blacks are more likely to use friends and relatives to search for jobs. However, they noted that this difference might reflect occupational segregation by race, because blacks are more likely than whites to have blue-collar occupations. Wanous (1992) noted that blue-collar workers obtain job opening information from informal sources about 80 percent of the time and white-collar workers about 50 percent of the time.

Campbell and Rosenfeld (1985) also found that women appear to be less likely to use personal contacts as recruiting sources. However, women are disproportionately more likely to be in mid- and low-level white-collar jobs, where use of personal contacts is less common. Kirnan, Farley, and Geisinger (1989), controlling for occupation by looking at life insurance agents only, found, unlike Campbell and Rosenfeld, that both blacks and women consistently used formal recruiting sources more frequently than informal sources.

Given the benefits of using employee referrals, it is not clear why women and blacks would be less likely than white men to use employee referrals. In the following section we explore the theoretical reasoning and suggest that this difference in recruiting source use may be due to network segregation and the gender and race composition of the workplace.

The Role of Workplace Demographic Composition in Recruiting Source Choice

Pfeffer (1983) was the first to give definition to the concept of organizational demography, although many researchers (Kanter, 1977; Spangler, Gordon, & Pipkin, 1978) studied organizational composition previous to Pfeffer's work. Pfeffer defines organizational demography as the distribution of basic attributes (such as age, length of service, race, and sex) of the organization, with *distribution* being the operative word. He makes clear that organizational demographic effects are more than simply the sum of the effects of individual demographic differences.

Previous research has shown that the similarity of the demographics of an organization to an employee affects post-hiring outcomes such as turnover. Most of the organizational demography research has focused on age and tenure as the explanatory variables for turnover (O'Reilly, Caldwell, & Barnett, 1989; Tsui, Egan, & O'Reilly, 1992). In general, organizational demographic composition is viewed as affecting employee post-hiring outcomes. We suggest a model where organizational demographic composition affects how an employee is hired and moderates the relationship between gender, race, and hiring source.

Our belief that use of employee referrals is affected by the demographic makeup of the organization rests on the assumptions that people's networks generally contain people like themselves and employees refer people like themselves. Both of these assumptions are explored below.

For years, social scientists have hypothesized that network segregation influences job search. As summarized by Braddock and McPartland (1987), social scientists have thought that black job seekers' networks are composed of other blacks who, on average, are not as well situated as the white members of white job seekers' networks to know about many desirable job openings.

Although most studies have not directly tested whether people's recruiting networks generally contain people like themselves, many have answered

this question indirectly. Rossi, Berk, Boesel, Eidson, and Groves (1968) found that personnel officers of major employers in fifteen cities reported that blacks had few white contacts and therefore were systematically overlooked because the firms used employee referrals. Roos and Reskin (1984) suggest that women's lack of informal male contacts explains some of the difficulty women have had gaining entrance to blue-collar apprentice programs and nontraditional blue- and white-collar jobs.

Systematic differences in the use of employee referrals by females and minorities as compared to males may be linked to systematic differences in the probability of sources leading to "better" jobs. Use of employee referrals will increase the probability of an individual's obtaining a better job match only if the individual searching for a job has people in her network who are employed in jobs and organizations that she prefers. Network theorists call contacts that pay off (for example, in a job or promotion) *instrumental contacts*.¹ Historically, white males were more likely to have instrumental contacts simply because their contacts were white males.

The belief that the more employees an organization has of the same gender and race as an applicant, the more opportunity the applicant may have to be recruited through those employees, additionally depends on the assumption that employees refer people like themselves. One explanation of why people refer people like themselves is that the value of employee referrals could be reduced when applicants come from groups different from the employees. An underlying premise of the value of networking and employee referrals is that employees and applicants will have a comparable framework for assessing information. Employees and potential employees who interact with one another for recruiting purposes can more accurately assess the validity and value of each other's information with little or no deciphering. This is possible because they have similar enough backgrounds (where background can be defined, for example, as culture and education). Mehrabian (1971) and Schefflen (1972) provided evidence that people are able to use cultural signals other than the spoken word, such as dress or mannerisms, in evaluations of one another.

When employees and applicants have a comparable framework for assessing information (that is, their backgrounds are similar), employees (and employers) have a higher probability of being able to predict the quality of a job match. Cornell and Welch (1996) show that the uncertainty about an applicant's future productivity can lead to statistical discrimination that penalizes applicants who come from backgrounds dissimilar from potential employers.

Staiger (1990) found that females were substantially less likely than males to be referred by a male. Berger (1995) found that men who use contacts were more likely to use male contacts, and women who use contacts were more likely to use female contacts. Leicht and Marx (1997) found that same-gender job referrals are more likely to occur than cross-gender job referrals. They

suggest that the persistence of gender-segregated employment exacerbates the gender segregation of networks.

Historically, organizations predominantly have been made up of white males. Therefore, one would expect white male applicants to have more opportunities than females or minorities to be recruited by employee referral. One would also expect this to change over time as the gender and race makeup of organizations changes over time.

Thus the use of employee referrals should be affected by the demographic makeup of the organization. Recruiting source use may be different across gender and race due to the demographic makeup of the organization. The more employees an organization has of the same gender and race as an applicant, the more opportunity the applicant may have to be recruited through employees. These theoretical considerations as well as previous empirical work form the basis for the following hypotheses tested in this research:

HYPOTHESIS 1. The lower the percentage of employees in the workplace of the same gender as the new employee at the time of hiring, the less likely the employee is to be hired through employee referral compared to formal sources.

HYPOTHESIS 2. The lower the percentage of employees in the workplace of the same race as the new employee at the time of hiring, the less likely the employee is to be hired through employee referral compared to formal sources.

HYPOTHESIS 3. Controlling for the percentage of employees in the workplace of the same gender as the new employee at the time of hiring will change the effect of gender on the probability of the employee's being hired through employee referral compared to formal sources.

HYPOTHESIS 4. Controlling for the percentage of employees in the workplace of the same race as the new employee at the time of hiring will change the effect of race on the probability of the employee's being hired through employee referral compared to formal sources.

When we control for gender and race composition in the workplace, the coefficients on the newly hired employee's race and gender are purged of network effects. Thus, in hypotheses 3 and 4, we are testing for the existence of influences other than gender and race composition of the workplace on the effects of gender and race of the new employee on hiring sources. If these other influences are unimportant, then the race and gender coefficients should approach zero.

We believe that unambiguous predictions can be made when we compare the use of employee referrals, which depend on networking, to formal sources, which do not. In actual application, there are a number of recruitment sources that fall in a gray area of having some component of both informal and formal attributes. This makes any comparisons theoretically ambiguous. In

the results that follow, we therefore focus on employee referrals versus clearly formal sources.

Most previous research has had only limited ability to separate gender and race influences from job demographic (for example, blue collar or white collar) influences on recruiting source use. These two effects have been confounded due to occupational segregation. We are able to control for job classification, education, and region in this analysis. Furthermore, we are also able to present results for Asians and Hispanics, two groups that largely have been ignored in the previous literature.

Methods

These hypotheses are tested using data on employees from the personnel files of a U.S.-based, international products and services company. The company is in the top 80 percent of all Standard & Poor's 500 firms in market value, sales, and number of employees and in the top 50 percent in assets. Thus this is a case study of a single large firm.

Data. We were able to obtain information on all employees who were hired from 1990 through 1994 (16,775) and all employees who were hired previously who still were present during those years (about 33,000 additional employees). Although all employees were used in the calculation of racial and gender percentages, we excluded from the analysis individuals who worked out of their homes (all in sales), individuals who worked outside the United States, individuals who were assigned to the racial category "others," and individuals who worked in buildings with fewer than 20 employees. The data set of newly hired employees consists of 15,253 cases. They were 52 percent female, 65 percent white, 17 percent black, 10 percent Hispanic, and 8 percent Asian.

The company coded a hiring source for each new employee. Twenty-one categories were used. We recoded these categories into five groups: employee referrals (22 percent), other informal sources (for example, referrals that did not come from employees—14 percent), employees with previous experience with the firm (for example, temporary employees who were hired as regular employees—17 percent), "other" sources (some employees were coded into this category, which we assume consists of many different hiring sources—17 percent), and "formal" sources (for example, employment agencies, ads in the paper, job fairs, and on-campus recruiting—31 percent).² In the analysis that follows, we use the term *recruiting source* to indicate the primary recruiting source used by the employee of the firm to gain his or her job.

We have information only on applicants who actually were hired and therefore cannot investigate issues relating to the applicant pool. Instead, we are focusing on recruiting sources that led to both a job offer from the firm and a job acceptance from the recruit. This is consistent with the few empirical studies of networking, with the exception of Fernandez et al. (2000). From the personnel files, we obtained information on the region of the United States

where the employee was hired, education level, job class, and the building where the employee worked (see Table 1). Region is coded into seven categories, with the industrial Midwest serving as the reference group. Education is coded into the six groups of less than high school, high school, two-year college degree, three or four years of college without a degree (some college), college (four-year degree), and advanced degree. We use high school as the reference group. Job classification is broken down into four categories: exempt employees (13.9 percent of the total), field sales (6.1 percent), nonexempt administrative employees (23.4 percent), and hourly employees

Table 1. Proportions in the Data

	<i>Independent Variables</i>	<i>Proportion</i>	<i>Dependent Variable</i>	<i>Proportion</i>
<i>Race</i>	Asian	0.075	Other informal	0.138
	Black	0.166	Employee referral	0.210
	Hispanic	0.100	Temporary to regular	0.163
	White	0.659	Other not classified	0.242
			Formal	0.214
<i>Gender</i>	Female	0.517		
	Male	0.483		
<i>Percentage same gender</i>	≤15%	0.006		
	16%–39%	0.193		
	40%–59%	0.396		
	60%+	0.404		
<i>Percentage same race</i>	≤15%	0.177		
	16%–39%	0.114		
	40%–59%	0.194		
	60%+	0.515		
<i>Region</i>	Mid-Atlantic	0.042		
	New England	0.009		
	Pacific coast	0.183		
	Rural Midwest	0.035		
	South	0.367		
	West	0.048		
	Midwest	0.317		
<i>Level of schooling</i>	Less than high school	0.134		
	High school	0.468		
	Junior college	0.043		
	Some college	0.060		
	College	0.185		
	Graduate school	0.111		
<i>Occupation dummies</i>	Exempt	0.139		
	Administration	0.237		
	Sales	0.061		
	Blue collar	0.563		

(56.3 percent). The exempt employee group is primarily made up of managers and professional workers. The nonexempt group contains clerical workers and technicians.³ The hourly workers work primarily in manufacturing and associated positions. The field sales employees typically sell to other companies rather than to the public.

Because our data come from a single firm, variation in the gender or race makeup of the workplace could be measured at the plant, building, or individual work group level. Each has appealing theoretical arguments. We were able to gather data on plant location and building but not on work group. We follow Tsui et al. (1992), who use the building as a measure of the work unit. They argue that individuals can identify with and derive positive self-identity from groups without interacting with all or any members of the groups. Use of the building as the unit of analysis has the attractive feature that the sample sizes to compute race or gender makeup are generally large and there is substantial variation in race and gender makeup. In many cases, the building will be coincident with the work group. We would have liked to do the analysis at the work group level as a comparison, but these data were unavailable.

To test for the effect of the gender and race composition on recruiting source associated with hiring, we computed two variables from the building information: (1) percentage of employees in the building of the same race as the new recruit (mean = 58 percent) and (2) percentage of employees in the building of the same gender as the new recruit at the time of hiring (54 percent). These were computed by calculating the percentages based on all employees in the building in the month prior to the person's being hired. Using a breakdown suggested by Kanter (1977), the percentage variables are collapsed into four categories: 0 to 15 percent, 16 to 39 percent, 40 to 60 percent, and 61 to 100 percent. Kanter labels the first three categories as tokens, minorities, and potential subgroup. The 61 to 100 percent category comprises what Kanter refers to as the majority (those in the approximately 60 to 80 percent range) and the dominants (those in the approximately 80 to 100 percent range). About half of the employees fall in the 61 to 100 percent group for both same gender (50.5 percent) and same race (51.5 percent). The distributions across the first three groups are quite different. The percentage of employees of the same race is evenly distributed: 17.1 percent are in the 0 to 15 percent category, 11.4 percent are in the 16 to 39 percent category, and 19.4 percent are in the 40 to 60 percent category. However, there are very few employees who are hired into buildings that are dominated by the other gender. Only 0.6 percent fall into the 0 to 15 percent category, whereas 19.3 percent are in the 16 to 39 percent category, and 29.6 percent are in the 40 to 60 percent category.

Analysis. We have tested each hypothesis by using the five-category dependent variable defined earlier (employee referral, other informal, temporary to regular, other unspecified, and formal), with formal sources as the omitted or comparison category. We elected to use this procedure as opposed to a simple

bivariate comparison of employee referrals with formal sources because important information would be discarded if we simply excluded the other hiring sources. This required the use of multinomial logit. Multinomial logit allows estimation of the effects of explanatory variables on a dependent variable with unordered response variables.⁴ However, because our theory relates only to the direct comparison of the use of employee referrals to the use of formal sources, we report only the coefficients from this portion of the estimation.⁵

Each of the hypotheses is tested using dummy variables as controls for gender, race, region, education, and job classification. The primary variables of interest in testing these hypotheses are dummy variables for the categories for the percentage of employees of the same gender and the percentage of employees of the same race as the new employee.

Results. Table 2 presents the results of the multinomial logit analyses, showing the probability of an employee's being recruited by employee referral compared to formal sources. Two models are presented. Both include the gender and race effects as well as education and region controls (coefficients not shown for parsimony) and job classification. Model 2 additionally includes the independent variables percentage of same-gender and percentage of same-race to test for the impact of the workplace demographic composition on the hiring source used.

The entries in Table 2 represent the relative risk ratios (RRR), which show the probability that an employee will be hired through employee referral compared to formal sources.⁶ Under the null hypothesis of no difference in impact of the independent variable on recruiting source choice, these table entries should be 1.0. This corresponds to no difference in the probability of hiring through employee referrals compared to formal sources. A value below one indicates that the variable is associated with a lower probability of hiring through employee referral than through a formal source. A value greater than one indicates a higher probability. For example, in Table 2 the entry in the first column for black indicates that blacks are about 67 percent as likely as (and therefore 33 percent less likely than) whites to have been hired through employee referrals compared to formal sources. The entry in the second column for Hispanic indicates that Hispanics are 42 percent more likely than whites to have been hired through employee referrals compared to formal sources.

Both hypotheses 1 and 2 are tested in model 2, which contains the same-gender and same-race categorical variables. All of the coefficients are less than one, with four of the six significant at the .01 level or better. Use of employee referrals compared to formal sources for hiring is less likely when the person is not of the same gender or race as the majority group in the building. Thus, networking with current employees is important in explaining differences in hiring sources. For example, when an individual comes from a distinct racial minority in the workplace (0 to 15 percent of the workers are of the same race),

Table 2. Multinomial Logit Analyses for the Probability of Employees Being Recruited by Employee Referral Compared to Formal Sources

	<i>Model 1</i>	<i>Model 2</i>
<i>Gender^a</i>		
Female	.95	.88*
<i>Race^b</i>		
Black	.67***	1.19*
Asian	.99	2.04***
Hispanic	.81*	1.42**
<i>Job class^c</i>		
Field sales	.55***	.56***
Administrative	.67***	.70***
Exempt	.27***	.28***
<i>Percentage same gender^d</i>		
0%–15%		.64
16%–39%		.83**
40%–60%		.86**
<i>Percentage same race^d</i>		
0%–15%		.39***
16%–39%		.54***
40%–60%		.90

Note: Values are reported in antilog form; therefore, values below 1 should be construed as negative log odds. Results for the other recruitment categories in the estimation (other referrals and walk in/write in) are not shown. Dummy variables for regions of the country and educational level were included in the estimation, but their results are not shown. (These results are available from the first author.) Formal sources include recruitment through advertisements, recruiting on campus, and recruiting through private agencies and the military. Individuals in buildings with fewer than twenty employees in the preceding month, individuals who identified with “other” racial groups, and individuals who were recruited through recruiting sources other than those enumerated above were excluded from the analysis.

^aBase category male.

^bBase category white.

^cBase category hourly.

^dBase category 61 to 100 percent.

* $p < .05$, ** $p < .01$, *** $p < .001$.

that person is almost three times more likely to have been hired through formal sources than employee referral. If individuals are hired into buildings where the gender makeup of the building has only 16 to 39 percent of employees matching their gender, they are only 83 percent as likely to have been hired through employee referral as compared to formal sources.

Hypothesis 3 is tested by noting the difference between the coefficients on the dummy for female in models 1 and 2. When we add controls for workplace gender makeup, the probability of females as compared to males of using employee referral as opposed to formal sources falls. The estimates are quite close to each other (about a 7 percent drop), but this difference is statistically

different from zero.⁷ Thus there is relatively more use of formal sources for women than for men when we control for workplace networking effects.

Hypothesis 4 is tested by comparing the results for the race dummy variables in models 1 and 2. The results in model 1, which do not control for the gender or racial makeup of the workplace, combine the workplace makeup effect with other differences across gender or race. The race coefficients in model 1 are all below or equal to 1. These indicate that the minority groups are less likely (blacks and Hispanics) or about as likely (Asians) to be hired through employee referral (compared to formal sources) as are white workers. However, when we control for workplace makeup, all these groups are *more* likely to have been hired using employee referral than their white coworkers. In all cases, the changes in coefficients between models 1 and 2 are significantly different from zero. Thus, previous research that has documented the lower use of employee referrals for hiring among minority groups has been picking up the fact that these groups tend to be minorities in the workplace also. There is evidence that minority employees actually are more likely to be hired using employee referral for a given workplace racial environment.

Discussion

Our results show that the more employees an organization has of the same gender and race as a newly hired employee, the more likely that employee was to have been hired through employee referral. The results support the idea that networking helps explain the use of employee referrals. More important, the results support the idea that because networks are gender and racially segregated, the gender and race composition of the workplace helps explain the use of employee referrals.

Regarding race and gender main effects, results of past research have been mixed (Campbell & Rosenfeld, 1985; Kirnan et al., 1989). This was partly due to the inability of studies to control for occupation. Controlling for occupation but not organizational demography, we find that Hispanics and blacks are less likely and Asians as likely to have been hired through employee referrals compared to whites. We also find that women are as likely as men to have been hired through employee referrals. When we in addition controlled for workplace organizational demography, we found that Hispanics, blacks, and Asians were all more likely than whites to have been hired through employee referrals.

The results also show, however, that there are other factors that are not explained by this networking, which seem to influence the hiring of females and racial minorities. If networking solely explained the relationship of race, gender, and hiring source use, all the race and gender coefficients in model 2 would be 1. Everyone would be equally as likely to use employee referrals.⁸

The results suggest that minorities seem to take advantage of knowing people in the workplace to get jobs much *more* frequently than their white counterparts. They simply know fewer people to recommend them. Women, however, do not appear to use networking to get jobs as often as men do in this organization. Men actually constitute a smaller percentage than females in this firm. If males are viewed as a numerical minority, then the results are the same as for other minority groups, although nowhere near the magnitude.

Clearly, there is reason to believe that past recruiting research has misestimated the effects of race and gender by not controlling for gender and racial composition of the workplace. This suggests, then, that employers wanting to reap the benefits of hiring employee referrals, should recognize that the gender and race composition of the workplace affects who is hired through referral, and controlling for workplace demographic composition, racial minorities and men are more likely to use employee referrals than women and whites. Although these results are for one company, the data consist of over fifteen thousand employees located in workplaces throughout the United States.

These findings have important implications not only for recruitment but also for socialization and orientation. The socialization and orientation process of employees is crucial to numerous outcome measures (such as turnover and productivity). Increasingly, employers are relying on employee referrals. The conventional wisdom is that using employee referrals provides a shortcut through the socialization process. Women and racial minorities, being less likely to have been hired through employee referrals, already are at a disadvantage in terms of the socialization and orientation process.

In addition, our finding that workplace demographic composition may moderate the relationship of race, gender, and hiring source use implies that women and racial minorities may be at a disadvantage specifically because they are less likely to have networks upon entry into the organization. Louis (1980) suggests that new employees have inadequate sense-making skills due to a lack of "local interpretation schemes" and "others' interpretations." Louis notes the importance of those newly hired having insiders to act as sounding boards and guides to important background information for diagnosing, interpreting, and assigning meaning to events and surprises. The greater the percentage of employees of the same gender and race as the newly hired, the greater is the likelihood that these new employees will find networks of people to help them with the adjusting process.

The question remains what explains the differences in use of employee referrals across gender and race. It is clear from the results that organizational demographic composition, and thus networking, is an important factor in explaining the differences; however, it does not tell the complete story. Although controlling for workplace gender and race composition causes racial minorities to be more likely than whites to be hired through employee referral, why they are more likely remains to be answered.

Study Limitations and Future Research

Two limitations of this study should be mentioned. First, this study (and studies on recruiting source use generally) uses a case study type sample. Although the sample contains individuals hired into buildings all over the United States, one firm hired all those individuals. This means that hiring source use reflects the choice of both the applicant and the firm. We have no data on recruiting sources used by unsuccessful applicants or information on recruiting sources used by the firm that produced offers that were not accepted by potential employees. In our opinion, however, the really important issue ultimately is the hiring sources that provide successful matches for the firm and potential employees. Although we do have data from a myriad of sites with varying percentages of employees' gender and race composition, we analyze data from a single firm, and the results reflect the makeup of the firm. For example, women in this firm are a slight majority, which is a bit unusual. Analysis of data from a different firm with an overall larger percentage of minorities or a much smaller percentage of women might yield different results.

Second, although a contribution of this study is the inclusion of Asians in the sample, we are unable to divide Asians into more specific ethnicities. Asians are not a homogeneous group and should not be treated as such. In order to answer questions about systematic differences in recruiting source use among minorities, future research needs to include Asians broken down into more specific ethnicities.

Finally, future research should be focused on separating the effects of recruiting source used from the effects of the race composition of the workplace on organizational outcomes. This study finds support for including the race and gender composition of the organization as a moderator in recruitment models. Previous research has shown that the similarity of the employee demographics of an organization influences posthiring outcomes such as satisfaction, turnover, and productivity (O'Reilly et al., 1989; Pfeffer, 1983; Tsui et al., 1992). It is therefore possible that research on the impact of recruitment source on posthiring outcomes may be picking up the similarity of employees' effect or the reverse. Perhaps it is the similarity of employees, and not recruiting source, that affects employee satisfaction, turnover, and productivity. Given the results reported here, it seems clear that we need to attempt to disentangle employee similarity and recruitment source effects in future work on the quality of employment matches.

Notes

1. Increasingly, network theorists are studying network composition within organizations. For example, Ibarra (1992) studied one firm and found that within the organization, men were more likely to form same-sex networking ties than women. However, networking relevant to recruiting is more concerned with networks external to organizations.

2. Our interviews with the company indicated that the state agency did an extremely poor job in referring members of minority groups to their firm. As a result, they relied only on referrals of white applicants. With this knowledge, we categorized the state agency into the "other referral" group, because its inclusion with formal sources would bias the estimation of the general effect of this source.

3. We also estimated models that separated out clerical workers from technicians. There was a slight increase in the significance of the estimates, but the estimates did not change enough to warrant the decrease in parsimony.

4. This probability model can be expressed as

$$PROB(y = j) = \frac{e^{\sum_{k=1}^k \beta_{jk} X_k}}{1 + \sum_{j=1}^{j-1} e^{\sum_{k=1}^k \beta_{jk} X_k}},$$

where e denotes the base of the natural logarithm, j is the response category exclusive of the reference category, the β 's are the coefficients associated with each independent variable for each response category, y is the dependent variable, and the x 's are independent variables (Liao, 1994). The results of the multinomial model show the influence of the x 's on the relative probability of choosing category j as compared to the excluded category. This probability is computed by assuming that the presence or absence of the other categories does not influence it.

5. The remaining coefficients can be obtained by contacting the first author.

6. Because all our independent variables are measured as zero-one dummy variables, these relative risk ratios are simply the antilogs of the estimated coefficients for each recruiting source.

7. We estimated the standard error of the difference in coefficients by estimating the same specifications one hundred times with a sample of two thousand with replacements each time. The standard deviation of these differences in the two coefficients was used to compute the t -statistic for the null hypothesis that the differences were zero. This "bootstrapping" method is more fully explained in Brownstone and Valletta (2001). Results of the tests are available from the second author.

8. We arrive at this result by testing for the change in the main effects of racial dummies in models that include measures of workplace racial and gender distribution (hypotheses 3 and 4). This is a slightly different approach from a model that allows the race and gender variables to interact with the workplace variables. We chose this approach because it circumvents the problem of small cell sizes that would occur for many of the minority group-workplace dummy interactions and because it is a more parsimonious representation. Even in cells where greater than ten cases occur, it is likely that the power of the test for moderation is quite small due to the intercorrelations of the main and moderator effects.

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