Networks of Opportunity: Gender, Race, and Job Leads

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Researchers have commonly invoked isolation from job opportunities as an explanation for persistence of gender and race inequality in the labor market, but few have examined whether access to information about job opportunities varies by race and gender. Findings from nationally representative survey data reveal significant white male advantage in the number of job leads received through routine conversations when compared to white women and Hispanics. Differences in social network resources (social capital) partly explain the deficit among Hispanics, but fail to account for the job lead gap between white women and men. Further analyses show that inequality in the receipt of job information is greatest at the highest levels of supervisory authority, where white males receive substantially more job leads than women and minorities. Keywords: social capital, networks, job information, inequality, gender, race.

Progress toward equal opportunity in the U.S. labor market since the Civil Rights Act of 1964 has been relatively slow and has stalled since the 1980s (Tomaskovic-Devey et al. 2006). Despite modest gains made by women and racial minorities, white male advantage has remained essentially undisturbed in the most sought after blue-collar and white-collar occupations (Tomaskovic-Devey and Stainback 2007). Researchers have offered a number of explanations for the persistence of gender and race inequality (see Padavic and Reskin 2002 for a review). We focus our attention on the role of social networks in information flow and specifically on differential access to information about job openings. Given the widespread use of informal hiring practices, the distribution of job information plays a central role in determining success and failure in the labor market. Information about job opportunities is unevenly spread throughout society (Burt 1992). Numerous people are qualified to fill any given position in the labor market, so simply knowing about a position opening is an important factor in determining who gets which jobs. The receipt of job information is therefore paramount for understanding how people gain access to their jobs (Granovetter [1974]1995).

Access to information can be an impediment for women and racial/ethnic minorities' attempts to gain entry into "good jobs." Information about jobs passes through gendered and racialized social networks (Green, Tigges, and Diaz 1999). White males are presumed to have access to high quality jobs through old boy networks (Saloner 1985), while women

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and racial minorities are often isolated from information about good jobs. In this way, the flow of job information is hypothesized to serve as a mechanism in the reproduction of existing gender and racial inequality. Surprisingly, few have empirically examined gender or race variations in the distribution of information about jobs. Rather than directly measuring the receipt of job information, most prior research on this topic has made inferences about the flow of job information based on proxy measures, such as social network composition. Consequently, little is known about how job information is distributed across gender and racial groups or about the processes that lead to gender/race differences. This study attempts to fill this gap by using nationally representative survey data to examine gender and race variation in the amount of unsolicited of job information received through routine conversations.

Social Networks and Gender/Race Inequality

Researchers have focused a great deal of attention on explaining the unequal returns that women and racial minorities receive in the labor market relative to white males. Barbara Reskin (2003) has called for greater attention to the micro-level processes that reproduce these ascriptive inequalities. Sociologists have emphasized various mechanisms of social closure, wherein dominant groups attempt to preserve their privileged positions in the status hierarchy by excluding subordinate group members from access to positions of power (Weber [1922]1968). Much of the recent research in this area has focused on discrimination against women and minorities in the workplace through processes of exclusion (restricting access to jobs), expulsion (firing or forcing resignations), promotion, demotion, or harassment (for example, see Roscigno, Garcia, and Bobbitt-Zeher 2007). These studies have emphasized the overtly discriminatory actions of employers (Neckerman and Kirschenman 1991) and the socio-cognitive stereotyping processes that predicate differential treatment (Ridgeway 1997).

Another way that gender and race inequality are reproduced is through social network segregation (Braddock and McPartland 1987; Waldinger 1995) and informal isolation (Kanter 1977). The basic idea is that women and minorities are trapped in segregated social networks, which isolate them from the kind of information and influence that can help them advance in their careers. Therefore, this process serves as an alternative mechanism through which discrimination may operate.

Research on this topic has taken many forms. Some studies have examined gender and race differences in social network characteristics and how these differences are related to promotion possibilities within firms (e.g., Brass 1985; Gorman 2006; Ibarra 1992, 1995, 1997; Kanter 1977). Other research has explored the role of social networks in hiring processes, examining gender and race differences in job contacts and informal hiring outcomes (e.g., Elliott 2000; Elliott and Sims 2001; Fernandez and Fernandez-Mateo 2006; Fernandez and Sosa 2005; Green et al. 1999; Kasinitz and Rosenberg 1996; Kmec 2007; Petersen, Saporta, and Seidel 2000; Smith 2000). The focus of these studies, though, has been on network structure and contact characteristics, rather than on the content of interpersonal relationships that link persons to jobs. Network contacts are useful because they provide individuals with a set of resources that they can draw upon in their careers. The characteristics of contacts are assumed to be indicators of resources, yet the availability of resources has rarely been measured. As Sandra Smith's (2005) research shows, the mere presence of contacts does not necessarily lead to the provision of information about job openings. The diffusion of information is therefore the critical link between social structural circumstances and labor market outcomes. To better understand how gender/race inequality in the labor market is reproduced, more needs to be learned about inequality in the distribution of job information.

Relatively little is known about how information about job opportunities is distributed or whether its distribution is related to gender or race. The transmission of job information

has rarely been studied directly. The flow of job information has, at times, been mathematically represented (Boorman 1975; Saloner 1985; Stigler 1961) and inferred on the basis of other characteristics, such as the social network structure (Brass 1985). Female/minority concentration within a firm has also been taken as a correlate of information flow (among other things) (Hultin 2003; Kanter 1977). A few recent studies have engaged in qualitative analysis of the processes of providing job information (Marin 2007; Smith 2005), examining the factors that would lead individuals to pass along information about jobs. To our knowledge, only a single study has directly examined the factors associated with receiving job information. Matt Huffman and Lisa Torres (2002) used a sample of California job seekers to examine the relationship between job lead quality (i.e., salary of the job lead) and the social characteristics of the people who provided those job leads. Overall, the results suggest that job lead quality is negatively related to the proportion of female network contacts. However, the negative association was largely confined to female job seekers, as the quality of the job leads that male job seekers received was largely unrelated to the gender distribution of their contacts.

We extend this research in a number of ways. First, the California study examined gender differences in job lead quality. In this study, we examine both gender and race differences in the volume of job leads received. As such, this research highlights the ways that simultaneous gender and race affiliations interact to produce distinct labor market experiences (Browne and Misra 2003). Although we lack data on the quality of job leads received, our examination of the quantity of job leads provides a similar test of labor market stratification. While more job leads will not always equate to better job leads, prior research considers both quality and quantity to be highly associated (see Montgomery 1992). People who receive more job offers can be more selective when making decisions about job changes and set higher reservation wages—which represent the lowest wage that people are willing to change employment for (Devine and Kiefer 1991). In short, a larger number of job leads enhances the scope of labor market opportunities.

Second, the California sample included only workers who had joined "job clubs" in order to aid in their search for jobs. The uniqueness of the sample threatens the generalizability of the findings. Our study is based on a general survey of participants in the labor force in the United States. Third, the authors did not distinguish between job information that the respondents sought out and job information that they had received without solicitation. This is an important distinction to make. Many people receive job information without engaging in a job search (Granovetter [1974]1995) and the information received in this way can be more valuable than information received through a job search (Lin 2000; Lin and Ao 2008; McDonald and Elder 2006). Focusing on information that is received rather than sought out is also necessary given the endogenous nature of job search processes (see Mouw 2003). Consequently, it is more useful to focus on the receipt of unsolicited job information, because it serves as an indicator of opportunities that people have readily available to them through their everyday interactions.

Moreover, the processes by which ascriptive distinctions are translated into different labor market opportunities require further elaboration. Social relationships facilitate access to labor market opportunities through the passage of information about job openings, but those relationships are structured by gender and race. The following section considers why one might expect to find significant inequality in the receipt of job leads.

Unequal Access to Job Information

Job information is not randomly distributed throughout the population. Rather, it is a function of a person's social capital—that is, the resources embedded in social relationships, which can provide a variety of returns when accessed or mobilized by an individual (Lin

2001). In the context of labor markets, social capital operates in the ways that personal contacts provide access to information about job opportunities, exert influence on the hiring process, and offer their social credentials to increase the status of workers. Similar to the way that people have differential access to wealth, status, and power, they also have differential access to social capital (Lin 2000; Portes 1998). Prior research demonstrates that network extensity (i.e., size and diversity of network) and the quality of resources embedded within networks (often indicated by occupational status of network members) are positively related to status attainment (Lin 1999). As such, the quantity and quality of social capital can help people achieve success in the labor market.

Ascriptive characteristics (such as gender and race) provide the basis for social network membership (Tilly 1998), shaping the character of social networks through homophilous interaction and friendship formation (Homans 1950). Prior research has noted substantial gender and race homophily in social networks (Marsden 1987; McPherson, Smith-Lovin, and Cook 2001). Since males and whites tend to occupy labor market positions endowed with richer resources, women and minorities, on average, have access to fewer social resources (Lin 2000). Women are more likely than men to experience work career instability (Williams and Han 2003) and therefore have fewer social resources to draw on (Campbell 1988; Ensel 1979). Research on men and women within work organizations has found that women's networks are less central to work organizations, are less influential, and provide less work-related help than the networks of men, even after controlling for position within the firm (Brass 1985; Ibarra 1992; McGuire 2002). Women are also less integrated into elite governance networks than men (Moore 1988; Scott 1996). Other research has demonstrated that neighborhood segregation and poverty limit access to labor market opportunities for African Americans and Hispanics, and other racial minorities (Tigges, Browne, and Green 1998; Wilson 1997). Overall, whites maintain larger and more diverse networks than minorities (Marsden 1988). Within work organizations, blacks are less likely than whites to develop mentoring relationships with white supervisors (Dreher and Cox 1996) and black managers have often been marginalized in corporations (Collins 1989, 1997).

Social network composition affects the kinds of jobs that people obtain through informal job matching—that is, hiring through job referrals and personal contacts. In general, women tend to learn about job opportunities from other women and men from other men (Fernandez and Sosa 2005; Hanson and Pratt 1991). Therefore, women who use informal job search methods and female personal contacts to obtain jobs are more likely to find employment in female-dominated workplaces (Drentea 1998; Mencken and Winfield 2000; Straits 1998). Also, informal job matching often leads blacks and Hispanics into racially homogeneous jobs (Braddock and McPartland 1987; Elliott 2001; Falcón 1995; Mouw 2002a). This has important consequences for job rewards. Female-dominated occupations tend to pay lower wages than other jobs (Reid 1998). The use of personal contacts among blacks and Hispanics also results in jobs that pay less (Elliott 1999; Green et al. 1999; Smith 2000). Informal hiring practices reduce the odds of a woman filling a managerial position (Reskin and McBrier 2000). For jobs that required a college degree, employers who used informal referrals in hiring were more likely than those who did not to have filled the positions with white workers (Braddock and McPartland 1987). These findings suggest that the use of personal contacts in hiring consolidates the labor market advantages for those "rich" in social resources, while isolating those "poor" in social resources (Green et al. 1999).

In sum, the availability of social resources in a given network is, at least in part, patterned by the gendered and racialized character of that network. Social networks influence the amount of job information that people receive, which in turn, helps to shape their opportunities in the labor market. Given that (1) gender and race groups occupy stratified locations in the labor market and (2) people maintain gender/race homophilous social networks and (3) access to jobs is mediated through informal social interaction, we would expect gender and race stratification to reproduce itself. The employment advantages that white men maintain

over women and racial minorities can therefore be sustained in the absence of direct discrimination (Loury 1977). The critical link in this process is the informal provision of job leads. These leads offer useful information about job openings that give job seekers an advantage in the hiring process. Female and minority access to this information could facilitate entry into to highly sought-after jobs, whereas a relative deficit in job leads could effectively lock these workers out of such jobs.

Hypotheses

We used data from a national survey to gain a better understanding of the processes described above. In doing so, we address a number of issues. First, we examine variation in social capital across gender and race. Few studies have addressed this issue empirically, particularly from a national sample. Studies that have done so have tended to rely on the name generator methodology (McPherson, Smith-Lovin, and Brashears 2006), which taps into close-knit or strong-tie contacts. These kinds of contacts are generally less useful than weak ties when considering access to employment (Granovetter 1973). Our study utilizes the position generator methodology (described below), which measures the characteristics of occupational networks (Lin, Fu, and Hsung 2001). This measure taps into both the quantity and quality of social capital resources. We also draw from another indicator of social capital that measures the frequency of daily contact. The daily contact measure has been shown to be related to expressive and instrumental network dimensions of other social capital indicators (Fu 2005). This examination also goes beyond the basic male-female, black-white dichotomies by examining variation in social capital across intersections of gender and race (Collins [1991] 2000). We expect to find, on average, that white males maintain more social capital than women and racial minorities.

Second, we examine gender and race variation in the quantity of job leads. Based on prior theory and research described above, we expect to find that women and racial minorities indeed receive fewer job leads than white males. Multivariate analyses are employed to help explain gender/race inequality in job leads. In particular, social capital should be highly associated with the receipt of job leads, since well-connected individuals would almost certainly be more likely than others to hear about job opportunities. White male advantage in the number of job leads received should therefore be due primarily to their superior social capital resources.

Other factors are likely to structure the receipt of job leads. For example, employers and coworkers would seemingly be more likely to pass along information about job openings to individuals who are the most likely to take advantage of the opportunities—that is, people with useful skills, credentials, and experience. However, the relationship could also operate in the opposite direction, with individuals failing to be informed about openings for which they are overqualified. Huffman and Torres (2002) found that education and experience are positively associated with the salary of job leads received, which might suggest that a positive relationship with the quantity of job leads also exists. Attachment to the labor force should also be positively related to the receipt of job information. While not explicitly examined in prior research, individuals who are employed in full-time positions, those who are in high authority jobs, and those with longer job tenures should receive more job leads than others. Furthermore, certain occupational environments provide greater opportunities for accessing job information. For example, informal job search and recruitment practices tend to vary across occupations (Holzer 1996; McDonald 2009), which leads one to suspect that the flow of job information would also vary across these environments. Similarly, workers in prestigious occupational environments may be the targets of job leads more often than individuals working in less prestigious jobs. Due to equal opportunity employment policies, information about positions in the public sector is required to be dispersed more broadly and for a longer

period of time. Workers in the public sector would seemingly have greater access to information about job openings than workers in the private sector. Consequently, deficits in human capital as well as a lack of structural positioning within the labor market could mediate the relationship between gender/race and access to job information. As such, we expect these personal and employment characteristics to further explain gender and race inequality in the receipt of job leads.

Finally, inequality in access to job information will be assessed across various levels of supervisory authority. Prior research indicates that inequality between white men and women and minorities tends to be more pronounced at higher levels of workplace authority (Elliott and Smith 2004; Grodsky and Pager 2001; Huffman 2004a, 2004b). Average differences in the number of job leads received across all levels of supervisory authority may obscure more trenchant patterns of informal isolation in management. Therefore, we expect to find the greatest gender and race disparity in the number of job leads received at the highest authority levels.

Data and Methodology

The data come from the Social Capital-USA (or SC-USA) survey—a national, random-digit dialed telephone survey of adults in the United States age 22 to 65 who were currently or previously employed. The survey was part of a three-society (United States, China, and Taiwan) study, jointly sponsored by Academia Sinica, Taiwan, and Duke University, specifically designed to examine social capital. The SC-USA survey took an average of 35 minutes to complete, was administered from November of 2004 to March of 2005, and resulted in 3,000 completed interviews. The response rate (43 percent, using AAPOR's RR3 formula) is comparable to response rates for other recent national RDD surveys (see Groves et al. 2004) and consistent with the national trend in declining response rates (Curtin, Presser, and Singer 2005). We compared the estimates from the SC-USA to those obtained from the March 2005 Current Population Survey (limited to respondents age 22 to 65) and found few differences across numerous characteristics (U.S. Census Bureau 2005). However, the SC-USA respondents are more highly educated than the CPS respondents. To account for this difference, we constructed sample weights using the rake procedure in STATA to match the gender, race, age, marital status, and education characteristics of SC-USA to the CPS estimates. All analyses presented here use these sample weights to ensure generalizability. Table 1 presents the weighted means for the variables used in this analysis. After listwise deletion on these variables, 2,525 cases remain.

Dependent Variables

The survey contained a section on the unsolicited receipt of job information. Respondents were asked, "Now I would like you to think of the last 12 months, did someone mention job possibilities, openings, or opportunities to you, without your asking, in casual conversations? (This may include face-to-face, telephone, e-mail, fax, etc.)." Thirty-five percent of respondents had received a job lead through their routine conversations. They were then asked about how many of these job opportunities that they had heard about in the last year. The responses to these two questions were combined into a single measure of the amount of job information received in the last year. Responses were top coded at 30 or more job leads, with extreme responses (more than 30) constituting about one-half of one percent of the sample. In order to ensure that the current jobs of respondents were not received as a consequence of the job leads, we drop from the analyses respondents who could have changed jobs during the twelve month period to which the job leads question refers.

Table 1 • *Descriptive Statistics for Variables in the Analysis*

	Mean	*Range*
Dependent variable		
How many job possibilities did you hear about last year?	1.14	0–30
Gender/race variables		
White men	.34	0–1
White women	.36	0–1
Black men	.06	0–1
Black women	.05	0–1
Hispanic men	.07	0–1
Hispanic women	.06	0–1
Other race men	.03	0–1
Other race women	.03	0–1
Social network variables		
Proportion white male network	.33	0–1
Extensity of network	6.77	0–21
Upper reachability of network	67.43	0–85
Social capital factor score	3.38	0–6
Daily contact	3.28	1–6
Personal variables		
English not 1st language	.12	0–1
Education	2.66	1–5
Age (years)	43.46	22–65
Employment variables		
Full-time employed	.73	0–1
Public sector	.25	0–1
Job tenure (years)	11.47	1–55
Executive occupation	.11	0–1
Professional occupation	.23	0–1
Other white collar occupation	.39	0–1
Blue collar occupation	.27	0–1
Occupational prestige	43.44	17–86
Supervisory level	1.60	1–3
$N = 2,525$		

Independent Variables

Gender and race characteristics are combined into a set of dummy variables for white men, white women, black men, black women, Hispanic men, Hispanic women, other race men, and other race women. White men serve as the reference category for the regression models. Social network characteristics are measured through a variety of indicators, primarily constructed from a set of position generator questions (Lin and Dumin 1986; Lin and Erickson 2008; Lin et al. 2001). The position generator questions collect information about respondents' ties to contacts that fill various positions within the occupational hierarchy. Other approaches to collecting egocentric network data—such as the name generator approach—tend to elicit information about strong and kin-based ties, which are generally of less utility in the labor market than weak and occupationally-based network ties (Granovetter 1973). By contrast, the position generator measures diversity and richness of embedded resources in social networks by asking respondents about their access to contacts in a list of 22 occupations. The technique asks each respondent, "Do you know anyone among your relatives, friends, or acquaintances that has one of the following jobs? ("Knowing" means that you and the person can recognize and greet each other. If you know several persons that have a particular job,

please name the person that comes to mind first.)" The jobs are sampled from a full list of all occupations to capture the scope of structural positions in the occupational hierarchy: from janitors and hairdressers to lawyers and CEOs.

Included in the analysis is a measure of network extensity: the total number of people that respondents identified from the list of 22 occupations. This variable measures the number of occupational positions accessible through a person's social network, serving as an indicator of the diversity of occupational contacts. The quality of these accessed positions is measured by upper reachability, which is calculated by selecting the highest prestige score (using the Standard International Occupational Prestige Scale) of the occupations to which respondents had access. The upper reachability variable spans from 0 (for respondents who reported that they knew no one in the listed occupations) to 85 (for respondents who said that they knew a congressperson). Because extensity and upper reachability are highly correlated (r = .62), they are combined into a single social capital index for the purposes of the regression analyses. This is achieved through principle component factor analysis with varimax rotation (details of this analysis are available on request). The factor scores were recoded such that values of this continuous variable range from 0 to 5.96, with a mean value of 3.38.

If the respondent knows someone with a particular job, the position generator asks a series of follow-up questions concerning the characteristics of the position occupant (gender, race/ethnicity). This set of questions allows one to calculate the gender and racial composition of each respondent's occupational network. The measure of the proportion of white male network members is calculated by dividing the number of white males mentioned through the position generator questions by the total number of individuals mentioned. Other gender/race composition combinations (i.e., proportion white female, black male, etc.) were also tested. However, the relative lack of variation on some of the gender/race specific composition variables led to unreliable regression estimates, therefore, these variables are not included as part of the analyses. Note too that the focus on the person that first comes to mind in a given occupation may not fully capture gender and race diversity of occupational networks, though it provides the best approximation available in the data. We also examine a single-item indicator of daily contact, which measures number of people that the respondent interacts with in a typical day (see Fu 2005). Such contact could include face-to-face, telephone, mail, or Internet communication. The variable spans from a value of 1 (0 to 4 people) to 6 (more than 100).

Personal and employment variables are included to assess the influence of skills, experience, and structural position in the labor market. Language skills are measured by a dummy variable indicating whether or not English is the primary language that respondents speak at home. We include an ordinal measure of education, where 1 = less than high school, 2 = high school graduate, 3 = associate's degree, 4 = bachelor's degree, and 5 = graduate or professional degree. Age is measured in years. A squared age term is also included in the models to account for the possibility of curvilinear effect of experience. The employment characteristics include a dummy variable indicating full-time employment (35 hours or more per week). Job tenure for the analytic sample ranges from 1 to 55 years and is calculated based on a question asking respondents for the year that they started their job. Note that respondents who had worked at their jobs for less than one year were removed from the analysis to ensure temporal priority of the employment variables. A dummy variable for industrial sector (1 = public, 0 = private and other) was constructed from a series of questions about respondents' employers. Also included are a set of dummy indicators for type of occupation. Open-ended questions were coded into the following occupational categories: executive/managerial, professional/technical, and other white collar occupations, all referencing blue collar occupations in the regression models. Occupational prestige is measured by the Standard International Occupational Prestige Scale, which ranges from 17 to 86 (Ganzeboom and Treiman 1996). Supervisory level is measured by a three-category variable where 1 = not a supervisor, 2 = supervises other workers, and 3 = supervises other supervisors. For the workers who were not full-time employed at the time of the survey, the employment variables refer to respondents' most recent job (part time or otherwise).

Table 2 • *Pearson's Correlations and Paired Samples T-tests by Gender, Race, and Social Network Characteristics*

Social network homophily correlations	*White Male*	*White Female*	*Black Male*	*Black Female*
Same gender	.164*	.208*	−.013*	.135*
Same race	.382*	.411*	.608*	.569*
Same gender and race	.419*	.432*	.576*	.579*
	Hispanic Male	*Hispanic Female*	*Other Male*	*Other Female*
Same gender	.184*	−.033	.080*	.045*
Same race	.551*	.589*	.469*	.336*
Same gender and race	.591*	.584*	.526*	.273*
Paired samples T-tests	*White Male*	*White Female*	*Black Male*	*Black Female*
(Mean values compared to white males)				
Extensity	6.911	7.236	7.064	7.213
Upper reachability	68.732	69.040	65.717	68.872
Social capital	3.449	3.505	3.360	3.495
Daily contact	3.519	3.362	3.350	3.092
Job leads	1.404	.946*	1.467	1.633
	Hispanic Male	*Hispanic Female*	*Other Male*	*Other Female*
Extensity	4.999*	5.183*	5.918	6.628
Upper reachability	59.269*	59.997*	70.079	65.613
Social capital	2.844*	2.896*	3.364	3.297
Daily contact	2.808*	2.415*	2.887*	3.048
Job leads	.744*	.609*	1.094	1.259

$N = 2{,}525$
*$p < .05$ (two-tailed tests)

Findings

We begin by assessing gender and race variation in social resources. The first panel of Table 2 correlates the gender and race compositions of social networks with the gender/race of the respondents. The results reveal strong tendencies toward homophily in occupational networks. On average, a person's social network is composed of others who have similar gender and race characteristics. The homophily effect is stronger for race than for gender (which is consistent with prior research, see Marsden 1988) and gender homophily is insignificant for black males and Hispanic females.

Using paired samples t-tests, the second panel compares the mean values on the social capital variables for white men to that of women and racial minorities. The first thing to note is the similarity in social capital between whites and blacks. When compared to white women and black respondents, white men report similar amounts of extensity and upper reachability (both of which are reflected in similar social capital factor scores), as well as similar levels of daily contact. By contrast, Hispanic men and women maintain a deficit in each of the indicators of social capital when compared to white men. With only one exception (daily contacts for other race men), individuals of other race/ethnicities have similar levels of social capital. In general, the variation in social capital and daily contact is reflected in the different amounts of job leads that the gender and race groups receive. The social capital deficit of Hispanics is related to significantly fewer job leads when compared to white males, whereas the relatively muted social capital differences between white males and blacks and other race/ethnicities do not translate into significant differences in the number of job leads. The one clear exception

Table 3 • *Percent Change Scores from Negative Binomial Regression on the Number of Job Leads*

	Model 1	*Model 2*	*Model 3*	*Model 4*	*Model 5*
White female	−32.7**	−34.8**	−35.9**	−25.3*	−23.7*
Black male	4.5	32.1	8.7	32.7	68.4*
Black female	16.3	58.7	19.0	50.5	106.5**
Hispanic male	−47.1**	−25.1	15.3	−33.4	22.7
Hispanic female	−56.6***	−33.6	3.7	−31.9	29.7
Other race male	−22.1	−12.6	−27.1	−22.9	−4.2
Other race female	−10.4	18.3	−12.9	−3.6	22.4
Percent white male network		70.3			75.1*
Social capital		26.8***			21.4**
Daily contact		19.8***			14.9***
English not primary language			−59.8***		−30.0
Education			16.3**		2.4
Age			6.1		5.3
Age squared			−.1		−.1
Job tenure				−5.5**	−6.3**
Job tenure squared				.1*	.2*
Employed full time				62.8***	27.5
Public sector				16.9	17.2
Executive				−9.1	−14.5
Professional				−4.1	−13.8
Other white collar				.7	−6.4
Occupational prestige				1.9**	1.5*
Supervisory authority				37.2***	32.4***
Pseudo *R*-squared	.012	.040	.023	.045	.064

$N = 2525$
*p <. 05 **p <.01 ***p <.001 (two-tailed tests)

is white females, who maintain a similar set of social capital resources as white males, yet receive significantly fewer job leads.

Overall, the results from Table 2 suggest that gender and racial characteristics are associated with different forms of social capital. First, social networks tend to be gender and race homophilous. Second, these gendered and racialized networks vary in the extent to which they contain different social resources, although in somewhat unexpected ways. Hispanics clearly have fewer resources in their networks than white males and this difference is manifest in fewer job leads. However, white males do not maintain a clear advantage over others in terms of their social capital or in the quantity of job information received. This complexity is explored in the remainder of the analysis.

Negative binomial regression is used to elaborate on the relationship between gender, race, and job leads (see Table 3). This technique is appropriate for examining outcomes that appear as counts (Long 1997)—such as a count of the number of job leads. Scott Long (1997) also notes that negative binomial regression is superior to Poisson regression when the conditional variance exceeds the conditional mean, which is the case here ($\mu = 1.14$; $\sigma^2 = 11.29$). The model uses maximum likelihood to estimate the count variable equal to $exp[\Sigma(bX) + \varepsilon]$, such that X represents the independent variables, b represents the vector of slope coefficients, and ε serves as the random error term (Maume 2006). When exponentiated and subtracted from one, the coefficients can be interpreted as percentage change slopes. For ease of interpretation, the coefficients are presented as percent change scores (a complete set of model estimates is available from the authors on request). Model 1 shows that white women on average receive 33 percent fewer job leads than white men. Hispanic men and women receive even fewer job leads relative to white men (47 and 57 percent fewer, respectively). Model 1 also shows that black men and women receive slightly more job leads on average than white

men and other race men and women receive fewer job leads than white men, although the differences are not statistically significant.

We elaborate on this baseline relationship by evaluating the influence of social network, personal, and employment characteristics on the aforementioned gender/race differences in the receipt of job leads. Each set of predictors is entered separately into Models 2, 3, and 4 to assess their individual effects on the relationship. The social network variables are entered into Model 2. To begin with, people with a higher proportion of white males in their social networks tend to receive more job leads than others. This relationship is only marginally significant (p =.063) in Model 2, but does reach statistical significance in the final model, suggesting that being tapped into white male networks provides access to information about job openings. Specifically, individuals with all white males in their social networks receive 75 percent more job leads than people with no white males in their social networks. The social capital and daily contact variables are both positively and significantly related to the number of job leads received. Note that the inclusion of these variables into the regression model reduces the magnitude of the effect for Hispanics to the point that their deficit in job leads is no longer significant. This indicates that social network characteristics help to explain the gap in job information between Hispanics and white males. However, the coefficient for white females remains statistically significant, which is not surprising given the similarity in social resources between white men and women.

Personal variables are introduced in Model 3. People for whom English is not the primary language of use receive 60 percent fewer job leads than primary English speakers. Higher educated individuals receive significantly more job leads than less educated people. Age is not a statistically significant predictor of job leads. The inclusion of these additional personal variables has little influence on the magnitude of the white female deficit in job information. However, the significant negative effect for Hispanic men and women is nullified (and the sign is reversed) after controlling for these variables. Further analyses reveal that much of this change can be attributed to the inclusion of the language differences variable. Language differences between Hispanics and white men therefore help to explain Hispanics' relative deficit in the receipt job information.

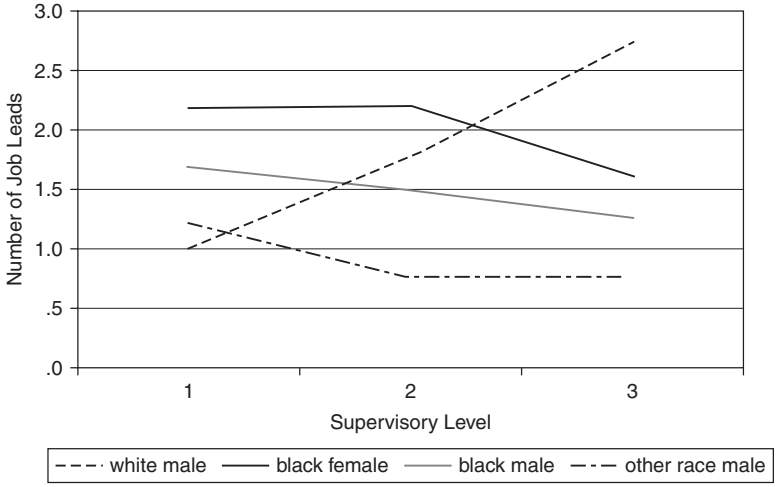
The employment variables are added into Model 4. The relationship between job tenure and the receipt of job leads is curvilinear. On average, the number of job leads received initially declines with increasing job tenure, but then increases among more highly tenured employees. Workers who are employed at a full-time job receive about 63 percent more job leads than individuals who are not. Workers in the public and private sectors differ little in the number of job leads that they receive. The receipt of job leads does not vary across occupational categories. However, a respondent's occupational prestige is positively and significantly associated with the number of job leads they receive. Not surprisingly, people in highly prestigious jobs tend to receive more job leads than other workers. Supervisory authority is also an important determinant of the receipt of job leads. Increases in supervisory authority are associated with a 37 percent increase in the number of job leads received. The inclusion of the work variables into the model reduces the magnitude of the white female vs. white male difference in job leads, but the difference remains statistically significant at the .05 level. Further examination reveals that most of this reduction is due to white women's relatively lower probability of being employed full time (66 percent versus 85 percent for white men), in addition to their lower supervisory power (1.56 versus 1.80 for white men).

All of the variables are included in the final model to assess the combined influence of these factors on the predicted number of job leads received. Even net of personal and employment characteristics, social network characteristics remain positive and significant predictors of unsolicited job leads. The results also show that social, personal, and employment characteristics fail to fully account for the job leads deficit between white men and women. After controlling for all of these characteristics, though, Model 5 predicts that black men and women have significantly more job leads than white men. In other words, if African Americans' personal, social network, and employment characteristics were identical to those of white men, then we would expect

them to receive significantly more job leads than men. This finding is inconsistent with our hypotheses and is an issue that we explore in greater detail below. Nonetheless, the results indicate that social capital contributes, at least in part, to Hispanic differences in the receipt of job leads. Hispanics receive fewer job leads than white males and this difference is explained by their deficit in social capital resources, in combination with personal and employment characteristics.

The most surprising finding is that black respondents report as many job leads as white males on average and receive significantly more job leads than white men after controls are introduced. Yet, it remains possible that white male advantage in access to job information is only apparent among workers in positions of supervisory authority. We therefore tested for gender and race interactions by supervisory level. Using the final model in Table 3 as a baseline, we added interaction terms for each of the gender/race combinations into separate models. The results reveal important gender/race differences in the slope of the relationship between the number of job leads received and supervisory authority. Specifically, the results show (1) a significant positive interaction for white males (indicating a steeper than average slope), (2) a significant negative interaction for black men (indicating a shallower than average slope), (3) a marginally significant (p =.062) negative interaction for black females, and (4) a marginally significant (p =.052) negative interaction for other race males.

Figure 1 plots the predicted number of job leads across supervisory levels to more clearly illustrate these differences. The figure shows a positive and mainly linear relationship between supervisory level and the number of job leads received by white men. This relationship is significantly different from the other relationships shown in the figure, as the number of job leads received actually declines as supervisory level increases among blacks and other race



Notes: Estimates based on negative binomial regressions of job leads, where *WM* = white male; *WF* = white female; *BM* = black male; *BF* = black female; *HM* = Hispanic male; *HF* = Hispanic female; *OM* = other race male; *OF* = other race female:

(i) *Job leads* = a + b*(*WM*) + b*(*supervisor*) + b*(*WM***supervisor*) + additional variables from Table 3, Model 5
(ii) *Job leads* = a + b*(*WF*) + b*(*BM*) + b*(*BF*) + b*(*HM*) + b*(*HF*) + b*(O*M*) + b*(O*F*) + b*(*supervisor*) + b*(*BM***supervisor*) + additional variables from Table 3, Model 5
(iii) *Job leads* = a + b*(*WF*) + b*(*BM*) + b*(*BF*) + b*(*HM*) + b*(*HF*) + b*(O*M*) + b*(O*F*) + b*(*supervisor*) + b*(*BF***supervisor*) + additional variables from Table 3, Model 5
(iv) *Job leads* = a + b*(*WF*) + b*(*BM*) + b*(*BF*) + b*(*HM*) + b*(*HF*) + b*(O*M*) + b*(O*F*) + b*(*supervisor*) + b*(*OM***supervisor*) + additional variables from Table 3, Model 5

Figure 1 • ***Predicted Number of Job Leads by Supervisory Level***

males. The figure also shows that white males receive relatively fewer job leads when working in low supervisory positions, but they receive an average of at least one more job lead than African Americans and other race males when they supervise other supervisors. While not shown in the figure, the slopes of the relationship for the remaining race groups (white women, Hispanics, and other race females) are positive and not statistically significant from the slope for white males. Still, the slope for white males is steeper than for these other groups and the relative gap in job leads is greatest at the highest level of supervisory authority. These results indicate that the white male information advantage is more pronounced among workers with much supervisory authority.

These findings demonstrate that assessing average differences in job lead quantity across all authority levels is not sufficient to understand gender and race inequality. Rather, inequality in the amount of job information received is most apparent at the highest levels of job authority. This is consistent with prior research on gender/race inequality in access to authority. Women and racial minorities are more likely to occupy low authority jobs and when they do supervise other workers, those workers tend to also be women and racial minorities (Smith 2002). Moreover, women and racial minorities in upper management tend to be both structurally (Collins 1997) and informally (Kanter 1977; McGuire 2002) isolated from core production activities. Consequently, it is not surprising that white males maintain their greatest advantage in job leads at the highest levels of authority.

Discussion

The uneven flow of job information has often been implicated as an explanation for persistent gender and racial inequality in labor market rewards. However, few have empirically examined the gender/racial distribution of job information. The results from this study provide support for the notion that white male advantage is preserved through exclusive access to job information. White men receive, on average, more job information than white women and Hispanics. Also, white male informal advantage is at its greatest at the highest levels of supervisory authority, supporting assertions of informal isolation and marginalization of women and minorities in management positions (Collins 1989; Kanter 1977).

Social capital has an important effect on the receipt of job information. Maintaining extensive social networks and networks that are able to access contacts in prestigious occupational positions facilitates the receipt of job leads, as does increased daily interactions. However, social capital provides only a partial explanation for gender and race inequality in access to job information. Networks with higher proportions of white males yield more job leads than female and minority-based networks, highlighting the advantages of being tapped into old boy networks (Saloner 1985). Hispanics' social capital deficit compared to white males—combined with their personal and employment characteristics—explains their lack of job leads.

While the position generator and daily contact measures serve as important predictors of the receipt of job information, the lack of difference in social capital found across gender/racial groups (with Hispanics as the lone exception) is puzzling, since it runs counter to other research findings that reveal substantively important differences in social resources (e.g., Ibarra 1992; McGuire 2002; Moore 1988). This could be reflective of "real" similarity in social capital between advantaged and disadvantaged social groups, but it also remains possible that the indicators do not adequately measure gender/racial inequality in social capital. Other operationalizations of social capital might do a better job of tapping into gender and race disadvantage in access to social capital resources. For example, Ted Mouw (2002b) has suggested that measurement of contact resources should focus on social contacts within each worker's specific field of employment, since these contacts are often more important for mobility than contacts that are employed in disparate occupational sectors. The distinctiveness of such a measure might be better suited for identifying gender and racial inequality in social resources.

White women receive fewer job leads than white males despite their comparable levels of social capital. The inferior structural positioning of white women in the labor market, compared to white men, contributes to their lack of job information. White women are less likely than white men to be employed full time and are less likely to hold jobs with a great deal of supervisory authority—positions which are positively associated with the receipt of job leads. However, structural positioning fails to fully account for the difference in the number of job leads received. These findings are fascinating in light of other recent findings on trends in occupational segregation. Using EEO (equal opportunity) data, Donald Tomaskovic-Devey and Kevin Stainback (2007) found that the bulk of the progress toward equal opportunity since the 1960s has been confined to white females, who have achieved substantial occupational integration with white males. However, the results from the present study show that despite the increased occupational integration, white women remain isolated from job information. The difference in job leads remains even after controlling for personal, employment, and social network characteristics. Some form of discriminatory action on the part of employers and coworkers might explain the residual difference, though this possibility remains subject to further scrutiny.

On average, black men and women do not experience similar disadvantage in their access to job information. Contrary to our expectations, they receive about the same number of job leads as white males overall and receive significantly more job information after controlling for social capital, personal, and employment characteristics. However, further analyses show that while the receipt of job leads increases with supervisory authority for white males, it decreases for black males and females. Among workers in high authority positions, white males receive more job information than African Americans. These findings highlight the marginalization that black professionals experience in management positions. These results also suggest that black access to job opportunities in the labor market might be limited more by quality than quantity. Recent research (Smith 2005) has called into question assertions of isolation from access to job leads among disadvantaged African Americans. Similarly, Mouw (2002a) has shown that black workers have ample contacts, but their contacts lead them to racialized jobs. Deidre Royster's (2003) study of job finding also demonstrates how differences in the quality of job opportunities can lead white males into stable employment and black males into undesirable jobs. Unfortunately, the findings presented here are only suggestive of differences in quality, as measures of the quality of job information are not available in the data. Future research should directly examine how job lead quality varies across gender and race groups.

The unique patterns of information receipt across these social groupings underscore the complexity involved in understanding the reproduction of labor market inequality. The results do not break neatly across either gender or race dimensions. Consequently, there is no "one-size-fits all" explanation for the variations in access to job information (cf., Elliott and Smith 2004). In the end, while gender and race inequality are linked in important ways (Tilly 1998), the processes by which women and minorities are informally excluded from employment opportunities are nuanced. Untangling these complexities will require further empirical investigation of specific gendered and racialized processes that influence the flow of job information. First of all, researchers of labor market inequality should focus greater attention on the intersections of gender and race (Browne and Misra 2003). Secondly, future research should explore heterogeneity within broad racial categories. The relatively small size of the Hispanic sample in the SC-USA survey makes it impossible to study within-group variations in any detail, though we would expect to find substantial variation in the receipt of job information by more precise ethnic categorization and across regions if such analyses were possible. Similarly, the heterogeneity apparent in the "other race" classifications limits the potential for interpreting the findings for these groups. It seems possible that the effects for structurally advantaged ethnic groups (e.g., Asians) may suppress the negative effects for structurally disadvantaged ethnic groups (e.g., Native Americans), though this is mere speculation at this point.

This research contributes to the study of social stratification by highlighting one of the potential mechanisms by which gender and race inequalities are reproduced in the labor market.

Gender/race inequality in access to job information is indeed prevalent in the labor market, particularly at the highest level of workplace authority. These findings underscore the utility of examinations of unequal access to job information, though this particular study is limited in a number of ways. For example, the data do not make clear whether or not respondents were looking for work during the time in which they might have received job leads, which could affect the odds of receiving and remembering job leads. This is an important factor to consider in subsequent studies. Future research should also consider why respondents reported receiving so few job leads (a little more than one job lead during the last year on average). The scarcity of job leads might serve as evidence of the value and utility of this information, although it remains possible that people are not fully recalling the leads that they receive. Prospective data collection would help to answer this question and identify potential biases in the recall of job leads. Also, the pseudo *R*-squared values are quite low, indicating that the regression models explain little of the variation in the distribution of job leads. This suggests that much more can be learned about how and why people receive job leads.

More research is needed to assess whether the patterns identified here impact gender and racial mobility in the labor market. One should not expect the receipt of job leads to automatically translate into job rewards. Disadvantaged groups (such as black men and women) with many job leads may still be blocked from access to employment through discrimination in the hiring process. People also need to follow-up on the leads (by submitting a resume, contacting the employer, engaging in job interviews, etc.) and they need to have the kinds of credentials, skills, and experience to make them viable candidates for job openings. Preliminary analyses of the SC-USA data, however, indicate that white males are no more likely than others to follow-up on job leads. Also, recent research has found that information received either without a job search (McDonald and Elder 2006) or through routine conversations (Lin and Ao 2008) tends to lead workers to higher quality jobs. These findings suggest that access to job information plays a central role in reproducing inequality, but future research needs to explicitly test this hypothesis.

Researchers should also examine the extent to which inequality in access to job information is unique to specific occupations, industries, sectors, or geographical regions. Progress toward equal opportunity has been uneven across labor markets, with less segregation in some contexts (e.g., professional occupations, public sector) than in others (e.g., craft and managerial occupations, private sector) (Tomaskovic-Devey and Stainback 2007). Informal job matching activity also varies across careers (McDonald 2005) and across historical time (Osberg 1993; Yakubovich and Kozina 2000), given the many changes in labor market institutions and employment relations. We might therefore expect to see variation in the distribution of job information along these dimensions. Comparing the distribution of job information in these unique contexts might help to explain macro-level changes in the distribution of job rewards. In sum, empirical analyses of the flow of job information within society contribute to our understanding of how white males have been able to maintain their privileged position in the status hierarchy and serve as an important entry point for assessing and promoting truly equal opportunity.

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