

Best Practices or Best Guesses?

Diversity Management and the Remediation of Inequality ¹

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Word Count: 15,490

¹ Thanks to Ronald Edwards and Bliss Cartwright of the Equal Employment Opportunity Commission for sharing their data and expertise, and to Nicole Espraza and Leslie Hinkson for help with data collection. Thanks to Kevin Dobbin, John Donohue, Lauren Edelman, Joshua Guetzkow, Heather Haveman, Seema Jayachandran, Lawrence Katz, Jordan Matsudaira, John Meyer, Trond Peterson, Daniel Schrage, Paul Segal, Robin Stryker, Donald Tomaskovic-Devey, Bruce Western, and Chris Winship for suggestions. Thanks to Randi Ellingboe for technical and editorial assistance. This research was supported by National Science Foundation grant 0336642 and Russell Sage Foundation grant 87-02-03.

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ABSTRACT

Employers have experimented with three broad approaches to promoting diversity. Ours is the first systematic analysis of the efficacy of these approaches. We explore the effects of practices designed to establish organizational responsibility for diversity, practices designed to moderate managerial bias through education and feedback, and practices designed to reduce the social isolation of women and minority workers. These approaches find support in academic theories of how organizations achieve goals, how stereotyping shapes hiring and promotion, and how social networks influence careers. We analyze federal data on the managerial workforces of 708 private-sector establishments from 1971 to 2002, coupled with survey data on their employment practices. We find that efforts to moderate managerial bias through diversity training and performance evaluations are least effective. Efforts to attack social isolation through mentoring and networking show modest effects. Efforts to establish responsibility for diversity lead to broader increases in white women, black women, and black men in management. Moreover, organizations that assign responsibility for diversity see more positive effects from diversity training and evaluations, networking and mentoring. Finally, federal contractors, subject to affirmative action edicts, see stronger effects from some programs. This work lays the foundation for an institutional theory of the remediation of inequality, focused on organizational structures allocating responsibility for progress in reducing segregation.

INTRODUCTION

Lists of “best practices” in diversity management have proliferated of late. Everyone seems to have a list, from the Equal Employment Opportunity Commission (1998:85), to the Presidential Glass Ceiling Commission (1995), the women’s business advocacy group Catalyst (1998), and the Society for Human Resources Management (1999). These lists are loosely based on academic theories that point to causes of workplace inequality ranging from unwitting bias (Lemm and Banaji 1999) to dependence on networks for hiring and promotion (Reskin and McBrier 2000). While there has been a great deal of research on the sources of inequality, there has been little on the efficacy of different programs for countering it. “Best practices” are at best, best guesses. We know a lot about the disease of inequality but not much about the cure.

We examine the effects of seven common diversity programs – affirmative action plans, diversity staff, diversity committees, diversity training, diversity performance evaluations for managers, networking programs, and mentoring programs – on the representation of white women, black women, and black men in the management ranks of private sector firms. All of these programs may well increase diversity. Until now there has been little evidence one way or the other – surprising given popularity and cost of these programs. Our contribution is to bring to bear rich new data, to theoretically distinguish three types of diversity programs, and to show that organizational structures allocating responsibility for change may be more effective than programs targeting either managerial bias or worker network deficiencies.

Previous empirical studies of anti-discrimination and diversity programs have been limited by data constraints. Economists first compared employers who are subject to affirmative action requirements to those who are not (Ashenfelter and Heckman 1976; Heckman and Wolpin 1976; Leonard 1984). They lacked data on employer practices. Sociologists and economists

studying employer programs examine data at one or two points in time (but see Baron, Mittman, and Newman 1991), analyzing the effects of some programs without accounting for others.

Those studies indicate that some programs may be effective, but their findings are inconsistent (Baron, Mittman, and Newman 1991; Edelman and Petterson 1999; Holzer and Neumark 2000; Konrad and Linnehan 1995; Leonard 1990). Gender and racial segregation has declined remarkably since the 1970s, when employers first adopted anti-discrimination programs (Jacobs 1989a; King 1992). But there is no hard evidence that those programs played a role.

We obtained the data that economists have used, the annual EEO-1 reports private-sector establishments submit to the Equal Employment Opportunity Commission (EEOC), but we then surveyed a sample of those establishments on the history of their personnel and diversity programs so as to be able to analyze program effects on diversity.

A strength of the EEO-1 reports is that they detail annual employment by race, ethnicity, and gender in all medium and large private sector employers. A limitation is that they cover only 9 broad job categories, collapsing into “management” all jobs above first-line supervisor (Baron and Bielby 1985; Smith and Welch 1984). We know from previous research that women and African-Americans are crowded in the lowest ranks of management. Even as women moved into management in the 1970s and 1980s, “women managers continued to trail their male counterparts in both earnings and authority” (Jacobs 1992). Thus our analyses indicate which diversity programs help women and African-Americans move at least into the bottom ranks of management and, importantly, which do not. They cannot tell us whether any of these practices help women and minorities to move into the executive ranks.

We find a clear pattern in the data. Structures establishing responsibility – affirmative action plans, diversity committees, and diversity staff positions – are followed by significant

increases in managerial diversity. Programs that target managerial stereotyping through education and feedback – diversity training and diversity performance evaluations – are not followed by increases in diversity. Programs that address social isolation among women and minorities – networking and mentoring programs – are followed by modest changes. The effects of these initiatives varied across groups: white women benefited most, followed by black women. Black men benefited least. We also find that responsibility structures made training, performance evaluations, networking, and mentoring programs more effective. Federal affirmative action requirements, which typically lead to assignment of responsibility for diversity, also catalyze certain programs.

These findings support an institutional theory of the remediation of inequality that builds on key precepts of organizational sociology. As Weber (1978 [1968]) argued, executives must appoint specialists, and give them authority, to achieve specialized goals. Thus remedies targeting individual bias or network isolation may be less effective than remedies that establish responsible parties. As neo-institutionalists (Meyer and Rowan 1977) note, new programs that are decoupled from everyday practice often have no impact. Therefore appointing a manager or committee with responsibility for change may be more effective than annual diversity training or evaluations, or decentralized networking and mentoring programs. As structural theorists of organizational inequality claim (Baron 1984), there is more to segregation than rogue managers exercising bias. Thus appointing special staffers and committees that rethink hiring and promotion may be more effective than training managers not to ask their secretaries to make coffee, not to exclude minorities from football pools.

The argument that organizations should structure responsibility for reducing inequality may seem commonsensical, but today's popular diversity programs often focus on changing

individuals. In the academy in general and in the oxymoronic field of management science in particular, methodological individualism now holds sway. Theorists prescribe solution that change incentives to, and beliefs of, individuals with the idea that most problems of management are problems of motivation rather than structure. Thus the most popular program that isn't federally mandated is diversity training, designed to attack bias. Managerial bias is also the target of diversity evaluations that offer feedback to managers. Networking and mentoring programs may appear to operate at the collective level, but they are designed to "fix" a lack of specific human and social capital among individual workers.

Next we describe the three categories of diversity practices, link them to theories of inequality, and summarize the (scant) evidence about the effects of workplace anti-discrimination programs. Then we review the research on the effects of the Civil Rights Act and presidential affirmative-action edicts on employment – hitherto the main body of research on the effectiveness of anti-discrimination measures. Following a discussion of data and methods, we present the results of analyses of white men, white women, black women, and black men in management.

THREE APPROACHES TO INCREASING MANAGERIAL DIVERSITY

Scholars often presume that practices designed to attack known causes of inequality will actually reduce it, as Reskin (2003) argues, making a leap of faith between causes and remedies. Thus, for example, while we know from experimental psychology that unconscious bias is endemic, and likely contributes to workplace inequality, we can only hope that the prevailing treatments – diversity training and diversity performance evaluations – diminish inequality. Understanding the cause of malaria and understanding its treatment are two different things. Whether a prescription for inequality is effective is an inherently empirical question.

Our goal is to take a first step toward developing an empirically based theory of the remediation of organizational inequality. We find below that popular theories of inequality are less useful for understanding remediation than theories of organizational goal attainment. Next we sketch three ways of thinking about the remediation of inequality rooted in different social science literatures, and discuss the popular human resources measures thought to put these theories to work.

The literature for both practitioners and academics points to three different mechanisms to fight organizational inequality. One mechanism is based in arguments from Max Weber and organizational institutionalists: The creation of specialized positions is the way to achieve new goals. Another mechanism is based in theories of stereotyping and bias: Training and feedback can eliminate managerial bias and its offspring, inequality. A third mechanism is based in theories of social networks: Programs that target the isolation of women and minorities can improve their career prospects. This last approach is based in the idea that inequality results from resource differences rather than bias.

Organizational Change: Structures of Responsibility

We begin with a canonical insight from organizational theory. Organizational sociologists and psychologists find that workers ignore newly announced organizational goals and continue to pursue old goals with old routines. The decoupling of formal goals and daily practice may occur because individuals face information overload, and so stick to the familiar, or because the old ways of doing things have been imbued with meaning and value over time (Orton and Weick 1990; Selznick 1949). Institutionalists have shown that decoupling is common in programs responsive to regulatory demands, such as Civil Rights programs (Dobbin, Edelman, Meyer, Scott, and Swidler 1988; Edelman and Petterson 1999; Scott 2001; Sutton and Dobbin

1996). Thus, for instance, academic departments have abandoned the old-boy system of hiring in favor of open job advertisement, but department chairs still ask their pals for leads. Some argue that managers may simply not perceive it to be in their interest to promote gender and racial integration of jobs (Jacobs 1989b). Decoupling is particularly likely when there is no office or expert to monitor progress. Max Weber (1978) famously argued that creating a special staff position is the first step toward achieving a specialized goal.

If Weber and the institutionalists are correct, where diversity efforts are everyone's responsibility but no one's primary responsibility, they are more likely to be decoupled. In organizations that do not assign responsibility for diversity goals to a specific office, person, or group, these goals may fall by the wayside as line managers juggle competing demands to meet production quotas, financial targets, etc. (Edelman 1990; Meyer and Rowan 1977). Both scholars (Reskin 2003; Sturm 2001) and consultants (e.g. Winterle 1992) advise on-going coordination and monitoring of diversity progress by dedicated staff members or task forces. There are three common approaches to establishing responsibility for diversity.

Responsibility and affirmative action plans. Assigning responsibility for setting goals, and for evaluating progress each year, was Weber's primary dictum to bureaucrats seeking to ensure the completion of particular tasks. The agency Lyndon Johnson set up in 1965 to monitor affirmative action among federal contractors encouraged this approach. In 1971 the Office of Federal Contract Compliance (OFCC, which later gained P for Programs) ordered contractors to write affirmative action plans in which they annually evaluate their own workforces, specify goals for the fair representation of women and minorities based on labor market analyses, and sketch timetables for achievement of those goals (Shaeffer 1973:66).

The order also specifies that firms should assign responsibility to a staff member: "He or

she must have the authority, resources, support of and access to top management to ensure the effective implementation of the affirmative action program” (U. S. Department of Labor 2005). By collecting and reviewing local information annually, the affirmative action officer can track “underutilization” and keep managers informed about their department’s progress (Linnehan and Konrad 1999:410; Reskin 2003:13) or initiate “constructive dialogue” about making further progress (Sturm 2001). The few studies that examine effects of affirmative action plans are inconclusive. Baron, Mittman, and Newman (1991) study annual data from 89 California state agencies between 1975 and 1981 and find that, all else being equal, agencies with affirmative action programs made significantly slower progress on gender desegregation of jobs. Yet those agencies were more integrated to begin with, and so it may be that pre-existing affirmative action programs had left little room for improvement (see also Edelman and Petterson 1999:126; Leonard 1990:65). In a study of 3,091 federal contractors with affirmative action plans who faced OFCCP compliance reviews, Jonathan Leonard (1985b) shows that the goals employers set for increases in white women, black women, and black men influence did have effects, though they were wildly optimistic. Goals do not, apparently, act as quotas because virtually no employer gets close.

The OFCCP requires federal contractors to create affirmative action plans, yet many contractors fail to write plans or to update them (Bureau of National Affairs 1986); (Leonard 1990:55). Additionally, as many as a quarter of firms with affirmative action plans are not contractors, having created plans to bid for contracts or to set diversity goals (Bureau of National Affairs 1986; Reskin 1998). In our sample, 7% of contractors had never had a plan and 20% of firms that had never had a contract wrote plans. Thus we treat contractor status and affirmative action plans as distinct in the analyses.

Oversight via staff positions and departments. Following the classic bureaucratic dictum (Weber 1978 [1968]), some organizations appoint full-time staff members to monitor diversity rather than leaving the task to line managers or assigning it to someone with other responsibilities. As a newly appointed diversity manager in a high-tech company explained to us in 2001: “as the organization has started to grow, they realized they needed someone in there to really pay attention to affirmative action and compliance and ... efforts on diversity So the position was created at the beginning of this year.” Big military contractors were the first to create special positions, in the wake of Kennedy’s initial affirmative action order in 1961. Edelman and Petterson (1999) show that equal-opportunity departments do not increase gender and racial diversity on their own, but that they do expand diversity recruitment programs, which in turn improve diversity. We include a measure for recruitment programs to isolate the effects of diversity staff positions.

Oversight and advocacy via committees. From the late 1980s, experts advised employers to appoint diversity committees comprising people from different departments, professional backgrounds, and managerial levels. Committees are typically charged with overseeing diversity initiatives, brainstorming to identify remedies, and monitoring progress. The diversity task force at the accounting and consulting giant Deloitte & Touche, for instance, created a series of ongoing groups responsible for analyzing the gender gap, recommending remedial steps, and establishing systems for monitoring results and ensuring accountability (Sturm 2001:492).

These three strategies share a focus on responsibility. Organizations with any one of them have assigned responsibility for progress to party or group – an affirmative action officer, a diversity staffer or department, or a committee. That party or group monitors progress regularly. Affirmative action officers also write explicit annual goals for progress, as do some staffers and

committees.

Behavioral Change: Reducing Bias Through Education and Feedback

Social psychologists trace inequality to bias among managers. Stereotyping is a natural cognitive mechanism, inevitable given our innocent tendency to make associations between categories and concepts (Heilman 1995; Lemm and Banaji 1999). The implicit associations we make between race, gender, ethnicity and social roles can have the effect of reproducing existing patterns of inequality (Jost, Banaji, and Nosek 2004). Managers may unwittingly select women for jobs traditionally dominated by women and men for jobs dominated by men, with the effect of preserving between-group differences. In-group preference (Tajfel and Turner 1979) has also been found to be widespread and may likewise contaminate managerial judgment (Baron and Pfeffer 1994; Reskin 2000). Rosabeth Moss Kanter (1977) sketches the early research on in-group preference in support of her theory of homosocial reproduction – white men promoting their clones. Kanter argues that managers prefer to hire their own for reasons of communication and trust.

Two corporate initiatives are thought to counter stereotyping and in-group preference. Diversity training is thought to make managers aware of how bias affects their actions and those of subordinates. Diversity performance evaluations are thought to provide managers with feedback on the effects of their decisions on diversity.

Education via diversity training. Social psychological research shows that giving people information about out-group members and about stereotyping may reduce bias (Fiske 1998; Nelson, Acker, and Melvin 1996). Diversity training provides managers with such information. It can be traced to the equal-opportunity “sensitivity” training programs that a handful of major corporations put together in the mid-1970s in response to the first equal-opportunity consent

decrees and court orders (Shaeffer 1973). By the late 1980s, quite a few corporate trainers and psychologists had developed training modules designed to familiarize employees with anti-discrimination law, suggest behavioral changes that could address inequality, and increase cultural awareness and cross-cultural communication (Bendick, Egan, and Lofhjelm 1998). Employers usually offer training either to all managers or to all employees. We look at the effects of training offered to all managers. Some studies of diversity training suggest that it may activate, rather than reduce, bias (Kidder, Lankau, Chrobot-Mason, Mollica, and Friedman 2004; Rynes and Rosen 1995; Sidanius, Devereux, and Pratto 2001). Research on diversity training has seldom explored its effects of workforce composition, but one study of federal agencies (Naff and Kellough 2003) did show that a broad diversity program had a negative effect on the promotion of minorities (Krawiec 2003:514).

Feedback via performance evaluations. Feedback is thought to reduce bias by directing managerial attention and motivation (Reskin 2003:325). Laboratory experiments show that when subjects know that their decisions will be reviewed by experimenters they show lower levels of bias in assigning jobs (Salancik and Pfeffer 1978; Tetlock 1985). Diversity performance evaluations create oversight and provide feedback to individual managers. As early as 1973, the Harvard Business Review noted that, “As one criterion of a line manager’s performance appraisal, some companies have included his success in effectively implementing equal opportunity programs” (Fretz and Hayman 1973:137). By the mid-1980s, a study of nine exemplary firms found that managers in each received regular equal-opportunity performance evaluations (Vernon-Gerstenfeld and Burke 1985:59-60). To our knowledge, no studies assess the effects of diversity evaluations.

Treating Social Isolation: Networking and Mentoring

Mark Granovetter (1974) brought insights about social networks, pioneered by both sociologists and psychologists, to the study of how people find jobs. Students of inequality have since speculated that differential network contacts, and differential resources accruing from those contacts, may explain part of the continuing inequality between whites and blacks, men and women (Blair-Loy 2001; Burt 1998; Ibarra 1992; Ibarra 1995; McGuire 2000; Petersen, Saporta, and Seidelm 1998). White men are more likely than others to find good jobs through network ties because their networks are comprised of other white men, who dominate the upper tiers of firms (Burt 1998; Reskin and McBrier 2000). Social networks also encourage trust, support, and informal coaching (Baron and Pfeffer 1994; Castilla 2005; Kanter 1977). Networking and mentoring programs designed specifically for women and minorities are thought to provide useful contacts and information (Thomas 2001). Both types of programs were pioneered in the 1970s and then revived in the 1990s as part of diversity management efforts (Wernick 1994:25; Winterle 1992:21).

Networking programs. Diversity networking programs for women and minorities vary in structure and intensity. Some take the form of regular brown-bag lunch meetings; others include lavish national conferences (Crow 2003). These programs may be initiated by employees or by HR managers. They provide a place for members to meet and share information and career advice, and some networks also advocate policy changes, such as family policies and domestic-partner benefits (Briscoe and Safford 2005). While networking may occur without any organizational impetus, we examine formal networking programs that employers support through release time for participants, meeting space, funding, newsletters and email lists.

Mentoring programs. In 1978 the Harvard Business Review published an article titled “Everyone Who Makes it Has a Mentor” that made mentors a must-have for aspiring management trainees (Lunding, Clements, and Perkins 1979; see also Roche 1979). Proponents of formal mentoring programs argue that they can level the playing field, giving women and minorities the kinds of relationships that white men get through the old-boy network. Mentoring programs match aspiring managers with senior mentors, who meet for career counseling and informal advice. Empirical studies, such as Burke and McKeen’s (1997) survey of university graduates, suggest a bivariate relationship between mentoring and career success among women but do not rule out the possibility that ambitious women seek mentors. One study of random mentor assignment within a single firm found that in general mentees have improved social networks and tactical knowledge, which may help their careers (Moore 2001). Qualitative studies find that cross-race mentoring relationships often fail (Thomas 2001), and theory suggests that women and minority mentors may be ill-situated to sponsor and coach protégés (Burt 1998; Neumark and Gardecki 1996).

Adverse Effects of Diversity Practices

Some argue that affirmative action and diversity programs can increase animosity toward women and minorities (Bond and Pyle 1988; Linnehan and Konrad 1999). First, executives may believe that women and minorities benefit from reverse discrimination and do not deserve their positions (Heilman, Block, and Stathatos 1997; but see Taylor 1995). Second, because of the elusive nature of cognitive bias, “conscious attempts at thought regulation” – like diversity training and diversity evaluations – “may even backfire, leading to exaggerated stereotyping under conditions of diminished capacity, or when self-regulation efforts are relaxed” (Nelson, Acker, and Melvin 1996:31). Indeed, management consultants and researchers find mixed

reactions to diversity management among white males, who report being “tired of being made to feel guilty in every discussion of diversity... of being cast as oppressors” (Hemphill and Haines 1997). Third, coworkers and executives may have negative reactions when they perceive minorities “as attempting to obtain power by individual and collective means”(Chemers, Oskamp, and Costanzo 1995:106) and executives may fear that networking will lead to union organizing (Bendick, Egan, and Lofhjelm 1998; Carter 2003; Friedman and Craig 2004; Miller 1994:443; SHRM 2004). Finally, some studies find that racially diverse work groups communicate less effectively and are less coherent (Baugh and Graen 1997; Townsend and Scott 2001; Vallas 2003; Williams and O'Reilly 1998).

The Civil Rights Act, Affirmative Action Edicts, and Diversity Practices

While there is little research on the effects of corporate diversity programs, the Civil Rights Act and presidential affirmative-action orders have been shown to increase diversity. The Civil Rights Act covers virtually all employers, making research on its effects difficult (Donohue and Heckman 1991), but Leonard's (1990) cross-sectional analysis links Title VII class action suits to increases in employment for blacks. John Donohue and Peter Siegelman (1991) show that early Title VII lawsuits were rare but fairly effective, and that over time they became more common and less effective. Other studies compare federal contractors, subject to presidential affirmative action orders, to non-contractors. Six studies using EEOC data for periods of 4 to 6 years between 1966 and 1980 show that black employment grew more quickly among contractors (Ashenfelter and Heckman 1976; Goldstein and Smith 1976; Heckman and Payner 1989; Heckman and Wolpin 1976). Affirmative action had negligible effects on white women (Leonard 1989:65). Contractor effects on blacks, and especially on black women, declined from the early 1980s (Leonard 1990:58), coincident with the Reagan administration's policy of

deregulation. These studies do not look at whether federal contractors increased black employment by adopting diversity practices. The two exceptions are a study by Leonard (1985b) showing that employers who set high recruitment goals see more change and a study by Holzer and Neumark (2000) showing that employers subject to affirmative action law expand recruitment efforts and hire more applicants from disadvantaged groups. We explore the possibility that contractor status renders the 7 diversity programs more effective.

In sum, we expect the different sorts of diversity programs to vary in efficacy. If assigning organizational responsibility is more effective than targeting individuals, affirmative action plans, diversity committees and full time diversity staff should be followed by broader increases in diversity than diversity training and diversity evaluations, on one hand, and networking and mentoring programs, on the other. By the same logic, the latter four programs may be more effective when implemented in organizations with responsibility structures. Finally, we examine whether affirmative action oversight renders programs more effective.

ALTERNATIVE SOURCES OF CHANGE IN THE MANAGERIAL WORKFORCE

We include in the analyses other factors thought to affect management diversity. As several predictors are claimed by more than one theory (Kaufman 2002), we organize the discussion around predictors. We do not discuss factors that do not vary with time, such as industry or location, because measures cannot be included in our fixed-effects models, which account for stable traits.

Organizational Characteristics

Organizational size. Growing organizations can increase diversity more easily than stagnant ones. Baron, Mittman, and Newman (1991) show that growth reduces gender segregation in California state agencies between 1975 and 1981. Yet there may be more

competition for positions in growing firms, and thus more men in the job queue (Reskin and Roos 1990).

Availability of managerial jobs. Employers who add new management positions may be able to hire from disadvantaged groups without hurting opportunities for white men (Baron, Mittman, and Newman 1991). Konrad and Linnehan (1995) and Leonard (1990:52) find that increased demand for managers favors white women more than African-Americans.

Unionization. On one hand, union seniority provisions tend to preserve segregation by favoring old-timers (Baron, Mittman, and Newman 1991; Blau and Beller 1992; Milkman 1985; but see Leonard 1985a). On the other, some unions have championed gender equity (Gerstel and Clawson 2001; Kelly 2003; Osterman 1995).

Personnel systems. Personnel experts advocated formal hiring and promotion practices to curtail discrimination (Dobbin, Sutton, Meyer, and Scott 1993). Systems that target women and minorities can increase diversity (Edelman and Petterson 1999; Holzer and Neumark 1998; Reskin and McBrier 2000). Yet formal systems can create separate career trajectories for different groups (Baldi and McBrier 1997; Baron and Bielby 1985; Elvira and Zatzick 2002).

Work-family policies. Women may benefit from work-family programs such as paid leave and flex-time and from executive support for work-family accommodation, though use of leaves and flex-time may hinder career progress (Williams 2000).

Workforce Composition

Top management team diversity. The dominance of white men in management is thought to be self-sustaining, through homosocial reproduction (Kanter 1977), social closure (Tomaskovic-Devey 1993), or network effects (Burt 1998; Reskin and McBrier 2000). We expect that diversity of the top management team will foster diversity below.

Diversity in the labor pool. Diverse labor pools, among non-managers in the establishment and local labor market, provide diverse managerial candidates (Cohen, Broschak, and Haveman 1998; Reskin and Roos 1990; Shenhav and Haberfeld 1992) and may enhance norms of inclusiveness (Blum, Fields, and Goodman 1994:245; Reskin and McBrier 2000:216).

The Organizational Environment

Legal awareness and enforcement. Studies of federal contractors show effects of regulation. Even in state agencies, Baron, Mittman, and Newman (1991:1386) find that government reprimands spurred job desegregation by sex. We expect that employers sensitized to the law, through internal legal staff, and those that face heightened regulatory scrutiny, through OFCCP compliance reviews, lawsuits, and EEOC discrimination charges, will appoint and promote more women and African-Americans (Leonard 1984; Leonard 1990; Skaggs 2001).

Economic conditions. African-American men, and to a lesser extent women, are more vulnerable than white men are to being laid off in hard times (Elvira and Zatzick 2002; Hipple 1999; Kletzer 1998).

Industry size. Jobs in growing industries are more attractive than those in declining industries, and women and minorities have historically been relegated to less attractive sectors (Reskin and Roos 1990:298).

DATA AND METHODS

We conduct a fixed effects analysis of longitudinal data on the workforce composition of 708 establishments to assess changes in managerial composition following the adoption of each of seven diversity practices. The data cover the period 1971-2002. Fixed-effect models account, implicitly, for unobserved characteristics that do not vary over time and that may affect diversity.

Data

EEOC data. The Civil Rights Act of 1964, as amended, requires private employers with more than 100 employees and government contractors with more than 50 employees and contracts worth \$50,000 to file annual EEO-1 reports. These reports detail the race, ethnicity, and gender of employees in nine broad occupational categories. There are no better data on workforce composition (for a methodological discussion of using EEO-1 reports see Robinson, Taylor, Tomaskovic-Devey, Zimmer, and Irvine 2003). We obtained the data from the EEOC through an Intergovernmental Personnel Act (IPA) agreement.

Some argue that employers reclassified jobs in the 1970s, moving women and minorities into management categories to improve their federal reports (Smith and Welch 1984). Leonard (1990:53) notes that “pure reclassification would cause black losses in the lower occupations [in the EEO data], which is generally not observed”. Jacobs (1992:298) shows a declining gender earnings gap consistent with real progress; “the predominant trend has been toward real, if slow progress into management on the part of women”. In our sample few firms show sudden increases in women or blacks in management, but we checked results for robustness by eliminating those cases and the results did not change. We also eliminated spells from prior to 1990, as discussed below, and the findings held up.

Organizational survey data. We drew a random sample of establishments from the EEO-1 database for our organizational survey. For that sample, we constructed a dataset comprising all EEO-1 reports for the years 1971-2002, interpolating for the missing years of 1974, 1976, and 1977. Establishments enter the dataset when they began filing EEO-1 reports. To ensure that we would be able to follow establishments over time, we chose half of the sample from establishments that had been in the dataset since 1980, and half from those that had been in the dataset since 1992. We also stratified by size, selecting 35% of establishments with fewer than

500 employees in 1999, and by industry to represent manufacturing, service and trade sectors. We sampled from food, chemicals, computer equipment, transportation equipment, wholesale trade, retail trade, insurance, business services, and health services. Corporate diversity can be influenced by acquisitions, spinoffs, and plant closings, so we sampled establishments, selecting no more than one per parent firm.

We conducted a longitudinal survey of employment practices at each establishment covering the years 1971-2002, in collaboration with the Princeton Survey Research Center. We drew on the experiences of others who had conducted organizational surveys related to employment practices (in particular Kalleberg, Knoke, Marsden, and Spaeth 1996; Osterman 1994; Osterman 2000). We completed 833 interviews for a response rate of 67%, which compares favorably with other organizational surveys (Kalleberg, Knoke, Marsden, and Spaeth 1996; Kelly 2000; Osterman 1994; Osterman 2000). In preparation, we conducted 41 in-person interviews with human resources managers from randomly sampled organizations in four different regions, and twenty pilot phone interviews. Data from those interviews are not included in the analyses.

We began by writing to the human resources director at each establishment. We asked for permission to conduct an interview and for the name of the person who could best answer questions about the history of HR practices. The typical interviewee was a human-resources manager with 11 years of tenure. We scheduled phone interviews at the convenience of the interviewees, and explained in advance the nature of the information needed. We asked whether the establishment had ever used each personnel program; when it was adopted; and whether and when it was discontinued. Program discontinuation was rare. When a respondent could not answer a question we sent a copy of that question by email or fax, asked that she consult records

and colleagues, and called back to fill in the blanks. In our in-person pilot interviews, respondents routinely pulled out manuals with copies of policies, and lists of adoption and revision dates. Nonetheless, because retrospective surveys may be less accurate when respondents are asked to report on events long past, we replicated the analyses using only organizational spells for 1990 to 2002, as discussed below.

We matched survey data for each establishment with annual EEO-1 records, creating a dataset with annual establishment-year spells. After we excluded 10 cases for which the EEO-1 data were available for less than 5 years, 13 cases with excessive numbers of missing values for EEO-1 or survey data, and 102 cases that were missing the adoption date for at least one key program, our final dataset included 708 cases and 16,265 establishment-year cells, with a median of twenty five years of data per establishment, a minimum of five years and a maximum of thirty-two. We collected data on national, state, and industry employment from the Bureau of Labor Statistics.

We were concerned that respondents might not represent the population of establishments that file EEO-1 reports in the 9 industries, due to our stratified sampling design and the response pattern. We constructed weights based on the inverse probability that an establishment from each stratum (industry by size by length in the EEO-1 dataset) would complete the survey. We replicated all reported analyses using weights, and discovered that the weights did not alter the findings. We report unweighted results here (Winship and Radbill 1994). We were also concerned that employers refusing to participate might systematically vary from those we surveyed, on factors affecting diversity. We include in the models predicted values from a logistic regression estimating the probability of response (Heckman 1979). This did not change our results. Covariates in that model were industry, establishment status (headquarters, sub-unit,

stand-alone), size, contractor status, managerial diversity and contact person's position, all obtained from the EEOC data, excluding the latter, which was obtained in initial contacts.

Dependent Variables

The dependent variables are the log odds of white men, white women, black women, and black men in management. Figure 1 presents the trends in our sample. Between 1971 and 2002, management jobs held by white men declined from 81% to 61% in the average establishment. Management jobs held by white women rose from 16% to 26%, those held by black women rose from 0.4% to 2%, and those held by black men rose from 1% to 3.1%. There is also a significant rise in the representation of other groups, notably Hispanics, during this period, which is why the percentages do not sum up to 100%.

Black women and men see dramatic changes in their proportion in management relative to the baseline, quadrupling and tripling respectively, but small changes in percentage points. We log the dependent variables because the absolute changes for blacks are relatively small. We use log odds (proportion/(1-proportion)) rather than log proportion because its distribution is closer to normal (Fox 1997:78).² In a sensitivity analysis, log proportion performed very similarly.

Figure 1 About Here

Our sample is designed to investigate the effects of diversity programs on workforce composition in private sector establishments large enough to file EEO-1 reports. We do not

² Because log-odds (logit) is undefined at values of zero and 1, we substituted 0 with $1/2N_j$, and 1 with $1 - 1/2N_j$, where N_j is the number of managers in establishment j (Hanushek and Jackson 1977; Reskin and McBrier 2000). The results were robust to different substitutions for zero. We chose the one that kept the distribution uni-modal and closest to normal. To ensure that the substitution does not drive the findings, we include a binary variable for no group members in management.

claim to describe the nation's managerial work force. Nationally representative samples such as the Current Population Survey include the public and non-profit sectors, where the gains of women and minorities have been larger, and therefore show higher figures for women's representation in management than do our data. Furthermore, aggregate figures reflect the change in women's representation in management associated with service sector growth (e.g. Jacobs 1992), whereas our data track a relatively stable set of firms.

Affirmative Action Plans and Diversity Practices

Figure 2 shows the prevalence of all seven diversity programs among the 708 employers analyzed below. By 2002, affirmative action plans were used in 63% of the workplaces we study; followed by training in 39%, diversity committees in 19%, networking programs (for women and minorities) in 19%, diversity evaluations for managers in 19%, diversity staff in 11%, and mentoring program (for women and minorities) in 11%. The bi-variate correlations and joint frequencies of the seven programs are presented in Appendix Table 1.

Figure 2 About Here

In the analyses reported below, we use binary variables to represent the presence of the seven diversity programs. For six practices, we asked whether the organization had ever had the program, when it was first adopted, and when (if ever) it was discontinued. For the seventh practice, diversity training, we asked when it was first and last offered. If an employer had gone for three years without training, we treated the program as defunct. We collected additional information about training because our in-person interviews suggested that it varied across organizations more than the other programs, but we found significant similarities in the training programs across organizations. In 70% of establishments with training for managers, it was mandatory. Eighty percent of training programs included discussion of the legal aspects of

diversity and 98% were conducted with live facilitators, rather than being offered exclusively via the web or video. While some organizations offer training not only to managers but to all employees, we report effects of training for managers because managers make promotion decisions. Training for all employees had nearly identical effects in the models.

Because the measures are binary, coded 1 for years when the program is in place, program effects are estimated for the entire period of their existence, not merely for the year after initiation. In the models presented here, the dependent variable is measured one year after the independent variables. Changing the lag to 2, 3, or 4 years does not alter the findings.

For six of the programs, between 2 and 4 percent of respondents who reported adoption could not tell us the exact year. For the seventh practice, affirmative action plan, the figure was 8 percent. We eliminated cases with missing data on any of these variables. Missing adoption dates for control variables were imputed using OLS regression with industry, age of establishment, and type of establishment as covariates. Omitting cases with imputed data did not substantially alter the findings.

Control Variables

All measures included in the analyses vary annually. Table 1 presents means and standard deviations based on all organizational spells and definitions and data sources for each variable. Because the fixed-effects method estimates variation within the organization, it captures change over time. For example, in the models the variable *organizational size* captures the effect of change in size on change in managerial diversity. These models effectively ignore measures that do not change, such as industry, but their variance is captured by the fixed effects.

Table 1 About Here

Organizational characteristics. *Organizational size and availability of managerial jobs* are measured using EEO-1 data on the total number of employees in the establishment and the number of managerial employees. *Unionization* is coded 1 when the establishment has at least one contract. Substituting core job unionization does not alter the results. *Formal human resources policies* is a count of hiring, promotion and discharge guidelines; job descriptions; promotion ladders; performance evaluations; pay grade system: and internal job posting. *Targeted recruitment policy* is a binary measure of special diversity recruitment efforts. *Work-family support* counts paid maternity leave, paid paternity leave, flextime policies and top management support for work-family programs as assessed by our respondents.

Workforce composition. *Top management team diversity* is measured with the percent of the top 10 positions held by women and/or African-Americans, based on survey data. We asked about the percent at 10 year intervals and interpolated values for intervening years. The *diversity of the establishment's internal labor pool* is measured with two variables based on the EEO-1 reports: the proportion of the focal group in non-managerial jobs and in the core job in each establishment. To determine the EEO-1 category that held the core job, we asked respondents about the single biggest job in the organization. We include a variable coded 1 when there are no members of the focal group in management. *Diversity of the establishment's external labor pool* is captured by two sets of variables on industry and state labor forces from the Current Population Survey. Industry employment variables are logged.

Legal and market environment. We include a binary variable indicating whether the establishment is a federal contractor, subject to affirmative action regulation. We use the industry's proportion of government contractors to measure demand for under-represented workers in affirmative-action sectors. Both variables are based on EEO-1 reports. *Legal*

awareness is measured with a binary variable for the presence of an in-house attorney. *Legal enforcement* is measured using three survey variables that capture the establishment's experience with anti-discrimination enforcement, EEOC charges, and affirmative action compliance reviews. Each is coded 1 from the year of the firm's first enforcement experience. More than a third of establishment-spells had previously faced a lawsuit, more than a third had faced an EEOC charge, and nearly 15% had faced a compliance review (only contractors are subject to compliance reviews). *Economic conditions* are measured with the yearly state unemployment rate, and *industry size* is measured as total annual industry employment.

Method

We use pooled cross-sectional time-series models, with fixed effects for both establishment and year (Hicks 1994; Hsiao 1986). We use fixed effects for establishments to account for unmeasured, time-invariant characteristics that might affect outcome variables (for recent empirical examples of these methods applied to individuals, see Budig and England 2001; Western 2002). This specification, which is achieved by subtracting the values of each observation from the establishment mean (Hsiao 1986:31), strengthens our causal inferences about the effects of affirmative action plans and diversity practices by ruling out the possibility that organizations that adopted those practices had stable unobserved preferences for diversity. To capture environmental changes, such as legal shifts and recessions, we use a binary variable for each year, omitting 1971. The large number of parameters involved in estimating fixed-effects models renders them less efficient than other estimators. However, we preferred these to alternative models because they provide the most stringent tests of our hypotheses. The establishment and year fixed effects also offer an efficient means of dealing with non-constant variance of the errors (heteroskedasticity) stemming from the cross-sectional and temporal

aspects of the pooled data.

Because our dependent variables are measured as parts of the same whole (the whole being management jobs), we expect their error terms to be correlated. Ordinary least squares would thus produce unbiased and consistent, but inefficient, estimators. We use Seemingly Unrelated Regression (SUR), which takes into account covariance between the errors and produces unbiased, efficient, estimators (Felmlee and Hargens 1988; Greene 1997; Zellner 1962). Simultaneous estimation also allows us to compare the effect of each diversity practice across groups with formal chi-square tests (Kalleberg and Mastekaasa 2001; Zellner 1962).

FINDINGS

The analysis reveals substantial variation in the effectiveness of diversity programs. Some increase managerial diversity across the board while others have meager effects, or positive effects for some groups and negative effects for others. The most effective practices are those that establish organizational responsibility: affirmative action plans, diversity staff, and diversity task forces. Attempts to reduce social isolation among women and African-Americans through networking and mentoring programs are less promising. Least effective are programs for taming managerial bias through education and feedback.

Diversity Programs at Work

In Table 2 we report models of managerial diversity. Each dependent variable is the (natural) log odds of the group in management. To transform the coefficient β from representing change in log odds to representing percent change in odds, they should be exponentiated as follows: $[\exp(\beta) - 1] * 100$. The exponentiated coefficient represents the average percent change in the odds of a group in management associated with a change in an independent variable, controlling for all other independent variables in the model. The R^2 figures for these fixed-effects

models represent the percent of the variance explained by the predictors when excluding the unique effects of each establishment. A log-likelihood ratio test shows that the variables reported in Table 2 significantly improve model fit ($\text{Chi}(28)=405.66$; $p<.001$) compared to the baseline models without variables representing diversity programs (available on request).

Organizational responsibility. Coefficients for the diversity programs represent the average percent change in the odds of a group in management that is due to the presence of a practice. After employers set up affirmative action plans the odds of white men decline by 8%, the odds of white women rise by 9%, and the odds of black men rise by 4%. These results are consistent with Leonard's (1990) finding that affirmative action goals are effective. Note that the coefficient for black women is not significant here. When we introduced industry interactions, we discovered that in manufacturing (computers, electronics, transportation) affirmative action plans had negative effects on black women, whereas in service (retail, insurance, business services) affirmative action plans had positive effects (results available upon request). Employers who create diversity committees see increases of 19% in the odds of white women in management, 27% in the odds of black women, and 12% in the odds of black men. Employers who appoint full-time diversity staff also see significant increases in the odds of white women (11%), black women (13%), and black men (14%) in management.

[Table 2 About Here]

As noted above, the coefficients in Table 2 represent the average percent change in the odds of each group in management. The effect of each program on the proportion of women and minorities in management will vary depending on where organizations begin (Fox 1997:78). For example, an 8% decrease in the odds of white men in management due to adoption of AA plans would translate to a decline of 2.6% in the proportion of white men in management if they

constituted 70% before adoption, but it would mean a decline of 4.3% if they made up only 50% at the baseline (Petersen 1985:311).

Programs for reducing managerial bias. Programs designed to reduce managerial bias through education (diversity training) and feedback (diversity performance evaluations) show one modest positive effect, and two negative effects, across the three disadvantaged groups. Diversity training shows a negative effect on black women. Diversity evaluations show a positive effect on white women but a negative effect on black men, who see an average decline of about 8% in their odds in management following adoption. These mixed effects are anticipated in the literature. As noted, laboratory studies and surveys often show adverse reactions to training (Bendick, Egan, and Lofhjelm 1998; Nelson, Acker, and Melvin 1996). Moreover critics argue that trainers define diversity broadly, to include groups not covered by federal Civil Rights law (parents, smokers) and thereby draw attention away from protected groups (Edelman, Fuller, and Mara-Drita 2001; Kochan, Bezrukova, Ely, Jackson, Joshi, Jehn, Leonard, Levine, and Thomas 2003; Konrad and Linnehan 1995).

Programs for reducing social isolation. Networking and mentoring programs, designed to counter social isolation, show modest effects on managerial diversity. Networking is followed by a rise in the odds of white women in management and a decline in the odds of white men and black men. The negative coefficient for black men is anticipated by qualitative research (Carter 2003; Friedman and Craig 2004) showing that whites can develop negative attitudes to African-American organizing. In contrast, mentoring programs show a strong positive effect on the odds of black women in management. These findings suggest that having personal guidance and support at work can facilitate career development (Castilla 2005) for black women, while networking is more effective for white women.

Gender and racial patterns. Overall, it looks like diversity programs do most for white women and more for black women than black men. Black men gain significantly less from affirmative action than do white women (Chi-sq(1)=4.15, p.<.05) and significantly less from diversity committees than do black women (Chi-sq(1)=22.47, p.<.001). Three programs seem to have negative effects for African-Americans, while no program shows a negative effect on white women. We hesitate to over-interpret this pattern, but note that there is something of a tradeoff among groups.

Table 3 evaluates the magnitude of the effects of programs on the proportion of each group in management based on coefficients in Table 2. “Proportion in year of adoption” is the mean proportion of each group in management, among adopters, in their actual years of adoption (i.e. just before treatment). “Estimated proportion with practice” shows the predicted mean proportion after the practice is in place. So, for example, 13.2% of managers were white women in the average establishment adopting an affirmative action program, and the net effect of the program, controlling for other factors, is to raise white women to 14.2%. Similarly, 1.4% of managers were black women in the average firm adopting a diversity committee, and adoption brings black women to 1.8%. The third row, based on the first two rows, reports the percent change over the baseline due to program adoption.

Table 3 About Here

Tables 2 and 3 support our contention that programs establishing organizational responsibility are more broadly effective than those that address managerial bias or social isolation among women and African-Americans. Organizations that structure responsibility see consistent positive effects white women, black women, and black men.

Does Organizational Responsibility Improve Program Effectiveness?

Our finding that organizational responsibility structures have broader effects than other programs suggests that perhaps training, evaluation, mentoring, and networking would be more successful in organizations that had these structures in place. There are also other ways in which these programs might work in combination. It is possible that the measures are not tapping discrete programs so much as an orientation to changing workplace demography. A count of the number of programs might show that effect. It is also possible that certain programs work best in combination with others, because they make up coherent systems (MacDuffie 1995; Perry-Smith and Blum 2000). Perhaps networking and mentoring only work when combined. We explored these possibilities in several analyses of program combinations.

First, we explore the effects of the number of programs by introducing three binary variables representing the presence of any 1, 2, and 3 or more programs. Across the 16,265 spells of data, 49% had no programs, 34% had 1, 10% had 2, and 7% had 3 or more. In Table 4 we report the effects of the number of programs in models parallel to those presented in Table 2 (results for the control variables are presented in Appendix Table 2). We compared coefficients for the binary count variables using t tests. Having any one program significantly decreases the proportion white men, and increases the proportion of white women, in management. For white women and men, the t test shows that any two programs combined are more effective than any one program, and the same goes for three or more programs versus two. For black women having three practices or more is more effective than having two, one, or none. For black men, none of the count variables shows an effect significantly different from zero programs. Hence for white women, the more programs the better. For black men, the number of programs matters less than the content. This is not surprising given that in Table 2, some practices have negative effects on blacks.

Table 4 About Here

While merely adopting more practices is not effective for blacks, particular bundles of programs might operate well together. To test this idea, we ran (in models otherwise identical to those in Table 2) all two-way interactions between affirmative action plan, diversity committee, diversity staff, training, evaluation, networking, and mentoring. (The bi-variate correlations and joint frequencies of the seven programs are presented in Appendix Table 1.) The two-way interactions among training, evaluation, networking, and mentoring did not indicate that any pairs operated better than individual programs. But two-way interactions with responsibility structures did render training, evaluation, networking, and mentoring more effective. For presentation we collapse the three responsibility structures into a single variable, interacting it with the four other program variables. Table 5 contains a model with these interactions, and all controls from Table 2 (results for the control variables are presented in Appendix Table 3).

Table 5 About Here

Diversity training, evaluation, networking, and mentoring programs are more effective in firms with responsibility structures. In each row, at least one interaction shows a significant positive effect on diversity and in no case does an interaction show an adverse effect. For diversity training, the responsibility structure interaction positively affects white women. For evaluations, the interaction decreases the odds of white men and increases the odds of white women. For networking, the interaction with responsibility structures has a positive effect on black men and for mentoring it decreases the odds of white men and increases those of black women. Note that the non-interacted variable, responsibility structure, continues to show the expected effects for white men, white women, and black men. The overall pattern is striking and suggests that these authority structures render the other programs more effective. Yet even with

responsibility structures in place, none of these programs shows the sort of consistent pattern across outcomes that we find for, say, diversity committee.

Do Affirmative Action Orders Mediate Program Efficacy?

In Table 2 we also examine whether affirmative-action enforcement shows direct effects. Employers who sign a government contract, and thereby become subject to affirmative-action regulation, do not see increases in managerial diversity as a direct result. When we interacted contractor status with the period 1971-1980, results did not support economists' findings that contractors experienced faster growth in black employment in the 1970s. Of course, effects found in earlier studies were quite small, and it may be that they were concentrated in industries we do not sample. For the entire period, we find a decline in the odds of black women in management following the approval of a government contract. This may be because employers who strive to improve their numbers before seeking government work become 'victims of their own success' as they reduce their efforts once they obtain contracts (Baron, Mittman, and Newman 1991:1389; Leonard 1990:65). We ran a model (results available on request) omitting the 7 diversity measures, formal human resources policies, work-family policies, and compliance review to see if these were masking positive effects of contractor status. They were not.

While contractor status does not show the expected effect, federal compliance reviews, which 32% of contractors faced during the period of observation, increased representation of white women and black men. Leonard (1985b) also found effects of compliance reviews in his study of the 1970s. When interacting compliance review with the period 1971-1980 our results (available upon request) replicate his finding from the 1970s as well (see also Kalev and Dobbin Forthcoming). Discrimination lawsuits increase the odds of all three groups in management (see

also Skaggs 2001). EEOC charges increase the odds of black men. These findings confirm that anti-discrimination enforcement has had effects.

The natural follow-up question is whether affirmative action oversight mediates the efficacy of the seven affirmative action and diversity measures. Theory suggests that program implementation may be taken more seriously in firms subject to regulatory scrutiny. In Table 6 we add interaction terms between programs and contractor status to the model in Table 2. Coefficients for control variables are in Appendix Table 4. A log-likelihood test shows a significant improvement in fit over the model presented in Table 2. The non-interacted coefficients show program effects among non-contractors. And the interaction coefficients show whether or not the effects among contractors are significantly different. Diversity training shows the greatest difference in effects on all four groups. Among non-contractors it decreases white and black women's representation in management. Among contractors its effects are significantly improved across the board.

To assess whether programs have a significant effect among contractors (and not simply a different effect from that of non-contractors) we look at the linear combinations of the interaction components (using `Lincom` in Stata). Affirmative action plans show significant effects for black men among contractors, further supporting Leonard's (1990) findings. The coefficients for diversity staff in the models for black women and men, although significantly smaller among contractors, are still positive and significant ($B=.078$ $SE=.032$ and $B=.095$ $SE=.034$, respectively). Among contractors we see that training is followed by a significant decline in the proportion of white men ($B=.086$, $SE=.004$) and significant increases among white women ($B=.103$ $SE=.030$) and black men ($B=.083$ $SE=.027$). Even among contractors, training has modest effects in terms of magnitude. But the pernicious effects of training seem to be

limited to non-contractors. Diversity evaluations are also less likely to backfire among contractors, where the effect on black women is now zero. Networking programs help white women in non-contractor establishments, at the expense of white men, but this effect disappears among contractors and black men see negative effects for reasons that are unclear.

Table 6 About Here

Further Analyses

A key challenge in analysis of non-experimental data is to account for heterogeneity that stems from the non-random selection into the ‘treatment’ (in our case, adopting a program). Heterogeneity may bias casual inference. We took several steps to minimize this possibility, both in the models and in tests for robustness. In the models we first used fixed effects specifications to account for unmeasured organizational characteristics that do not vary over time. We accomplish this by subtracting each observation from the establishment mean (Hsiao 1986:31). Second, we include in the models measures of time-varying factors that are likely to affect both anti-discrimination programs and managerial diversity, such as discrimination lawsuits, EEOC charges, formal human resources policies, and the gender and racial diversity of the top management team. Third, we include fixed year effects to control for environmental shifts affecting all workplaces, such as new regulations, high profile lawsuits, and media attention.

We conducted three additional analyses (results available upon request). First, to examine whether establishment-specific, time varying, unobserved, heterogeneity affects the results, we added binary variables as proxies for unspecified events that may have caused employers to both implement new anti-discrimination programs and hire more women and African-Americans. We measured each proxy at two (and three) years before the creation of the program (e.g. diversity committee) in question. If unspecified events (impending lawsuit, local news coverage) lead

firms to both initiate diversity committees and add women and African-Americans, our sensitivity analyses with proxy variables should pick this up. We performed these analyses in models parallel to those presented in Table 2, creating proxies for each of the seven variables of interest. If the effect of a program observed in Table 2 is spurious, the proxy variable should show significant effects in the same direction as the original coefficient and should cause the coefficient for the program to decline, the standard error to rise, or both (Snyder 2003). These proxy variables did not substantially alter the coefficients or standard errors of variables of interest and most did not show significant effects. This adds to our confidence that the observed relationships between diversity programs and change in managerial composition are not spurious.

Second, as a test of whether program adopters are different from non-adopters in a way that is not absorbed by the establishment fixed effects – perhaps adopters change faster than non-adopters in terms of management fads and demographics – we reran the analyses in Table 2, each time analyzing only establishments that ever adopted a particular program, starting with affirmative action plan. If the effects in Table 2 are due to differences between adopters and non-adopters then when we exclude non-adopters, program effects should disappear. This would be similar to excluding the never-married in a time-series analysis of the effects of marriage on income. The results of our “adopters-only” analyses are substantively similar to those in Table 2.

Finally, we were concerned that because the dataset is not rectangular (some establishments enter after 1971), unobserved heterogeneity might distort the results if establishments are missing in early years for reasons (e.g. organizational size or age) associated with the outcome variables. To verify that the results are not driven by selection of

establishments into the dataset, we replicated the analysis using a balanced sub-sample of establishments. The results were substantially similar to those reported here.

To examine the robustness of the results to within-unit serial correlation, we corrected for AR(1) with the Cochrane-Orcutt method (using `xtregar` in Stata), which transforms the data by subtracting from the equation for time t , the equation for time $t-1$ multiplied by the autocorrelation coefficient, ρ . Results are on the ASR website (web address). Theory suggests that affirmative action plan, diversity committee, and diversity staff should show significant positive effects on white and black women and black men. The AR(1) results were substantially similar to those reported in Table 2. The one exception was that affirmative action plan is significant for white women only at the $p < .1$ level. We report SUR models in Table 2 because they (a) account for relatedness of outcome variables and are thus more efficient, and (b) allow us to compare coefficients for different groups.

As our analyses cover more than three decades, we also explored two theories of timing and program efficacy (results available upon request), to rule out the possibility that some programs that showed no effects in the aggregate were actually effective at certain points in time. One theory is that employer practices are more effective under active regulatory regimes. To examine whether the activist enforcement of the 1970s rendered practices more effective, we added to the model reported in Table 2 interaction terms between each of the practices and (1) the Reagan and first Bush administrations (1981-1992), and (2) the Bill Clinton and George W. Bush era (1993-2002). The comparison period, 1971 to 1980, encompassed the activist Nixon administration, the brief Ford administration, and the activist Carter administration (Skrentny 1996). A finding that programs were more effective during the 1970s might help to explain why

economists (e.g. Leonard 1990) have found the greatest increases in black employment among contractor firms then. We find no evidence that programs operated differently across periods.

The second timing argument is that early program adopters are those that are most committed to change (Tolbert and Zucker 1983). We looked at whether the effects of each practice were stronger among the first 15%, 25% and 40%, of eventual adopters. Our analyses showed that practices are no more effective among early adopters.

We also explored whether some programs showed weak effects in the models because they had differential effects by establishment size or industry. In size interactions, some negative program effects were neutralized in very large establishments but the programs that were ineffective in general were not effective among large or small organizations. In industry interactions, most programs effects were stable in direction if not magnitude across industries. One notable pattern was that affirmative action plan effects on black women were negative in manufacturing and positive in service, as discussed above.

Finally, we were concerned that respondent reports of early program dates might be inaccurate, which could cause us to underestimate program effects by including post-treatment changes (i.e. changes due to a program) as pre-treatment data. We were particularly concerned about programs showing weak effects; training, evaluations, networking, and mentoring. Correlations between respondent tenure and adoption year were small and not significant, the one exception being for networking (correlation of $-.20$, $p > .05$). To evaluate effects of measurement error we reran Table 2 models eliminating spells before 1990. The idea is that when we focus only on the 1990s, it does not matter whether programs were adopted in 1989 or in 1973, as this information is excluded from the analysis. Using fixed effects models to analyze only data for 1990-2002 would prevent us from evaluating the effects of programs adopted any

time before 1990, and so we first replicated the full analysis without fixed establishment effects, replacing differenced variables with undifferenced variables. The results were similar to those presented in Table 2. Then using the undifferenced variables, we reran the models eliminating all establishment spells before 1990. We lose many spells, but the substantive results hold up. Results are posted on the ASR website (website address). This increases our confidence in the models, and particularly in the weak effects of training, evaluations, networking, and mentoring.

CONCLUSION

The anti-discrimination measures we study have become popular among employers, human resources managers, lawyers, and advocacy groups, despite the absence of hard evidence of their efficacy (Bisom-Rapp 1999; Krawiec 2003). Employers use these practices to defend themselves in court and the courts, in many cases, accept them as good faith efforts to stamp out discrimination (Edelman, Krieger, Eliason, and Albiston 2005). There are reasons to believe that many employers adopt anti-discrimination measures as window-dressing, to inoculate themselves against liability, or to improve morale rather than to increase managerial diversity. In the final analysis, however, the measure of these programs – for scholars, practitioners, and the courts – should be whether they do anything to increase diversity. Using EEO-1 reports, we cannot examine whether these programs increase the numbers of women and African-Americans at all managerial ranks. Yet we find that some popular diversity programs at least help women and African-Americans climb onto the first rung of the management ladder. Others do not even do that.

There is a rich tradition of theory and research on the causes of workplace inequality and we contend that the question of how to reduce inequality is just as deserving of attention. Social scientific knowledge about the causes of inequality may not always hold clear implications for

remedies. Our conceptualization of different types of diversity programs and our analyses of their effects lay the groundwork for additional research and theory development on the remediation of inequality in workplaces.

Broadly speaking, our findings suggest that even though inequality at work may be rooted in managerial bias and the social isolation of women and minorities, the best hope for remedying it may lie in practices that assign organizational responsibility for change. Our own theory of the remediation of inequality builds on classical organizational sociology rather than on theories of cognitive bias or of social networks (Blum, Fields, and Goodman 1994). We find that programs that establish organizational responsibility (affirmative action plans, diversity committees, diversity staff) are the most effective means of increasing the proportions of white women, black women, and black men in private sector management. Responsibility structures also catalyze the other programs, rendering each a bit more effective for one group. Some programs also prove more effective among federal contractors, likely because contractors assign responsibility for contract compliance.

Mentoring and networking programs designed to counter the social isolation of women and minorities are generally disappointing, though mentoring does appear to help black women. Practices that address managerial bias through feedback (diversity performance evaluations) and education (diversity training) show virtually no effect in the aggregate. Diversity evaluations show weak positive effects for black women, but only among contractors. Diversity training also shows modest positive effects for white women and black men among federal contractors. It shows negative effects on white and black women among non-contractors. More research is needed on whether some types of training are more effective than others, but research to date

from human resources experts and psychologists suggests that interactive training workshops, of the kind we examine, often generate backlash.

These findings challenge the popular claim that diversity programs have gained a life of their own such that federal regulation is no longer needed (Fisher 1985; Liberman 2003).

Affirmative action regulations clearly mediate the efficacy of diversity evaluations and training. Moreover, it was federal regulations that led employers to first establish affirmative action plans, the most common intervention and one of the most effective.

It is important to acknowledge that even the programs that work best have modest effects, particularly for African-Americans who are poorly represented to begin with. Diversity committees raise the proportion of black women in management by a remarkable 30% in the mean adopter, but from a baseline of only 1.4%. Appointing full time diversity staff raises the proportion of black men by a healthy 14%, but from a baseline of 2.1%. These programs alone will not soon change the look of management. But note that our sample of large, private, firms has changed less quickly than the economy as a whole. In young start-up firms and in the public sector, these practices may be even more effective than they are in our sample. Note also that while women have not made significant inroads into management in the economy as a whole since 1990, they continue to make gains in the larger, older, private sector firms we examine.

In this study we examine managers alone. It is important for both theory and practice to extend this research to other occupational groups. Yet for employers looking for solutions to the problem of gender and racial segregation, our analyses offer hope. Most employers do something to promote diversity – 76% had adopted one of these seven programs by 2002 – but do they do what is most effective? Diversity committees have been quite effective and require neither additional staff nor expensive consultants. Less than 20% of the establishments we studied had

them by 2002. Diversity staff are also quite effective, and only 11% of establishments had them. On the other hand diversity training, which 39% of establishments had adopted and which can be quite costly, was not very effective and showed adverse effects among non-contractors.

Our findings reinforce classical sociological ideas about how organizations get things done. Max Weber argued that to achieve specialized organizational goals, leaders should appoint specialized staff, give them authority to take action, and make them accountable. The three measures that do just that were the most effective at bringing about change. And they showed effects even in the presence of controls for specific initiatives specialists often implement, from formal hiring and promotion rules to work-family programs. The findings support management strategies based in insights from the sociologies of organizations and the professions suggesting that goals are best achieved by creating organizational structures that embed accountability, authority, and expertise. That said, the three programs we found to be most effective likely operate in somewhat different ways. While affirmative action plans and diversity staff both centralize authority over, and accountability for, workforce composition, diversity committees locate authority and accountability in an interdepartmental task force and may work by causing people from different parts of the organization to take responsibility for pursuing the goal of integration.

Much management theorizing from law-and-economics scholars and psychologists suggests that corporate behavior is best controlled by doling out incentives to, and shaping attitudes of, individual managers. This approach is rooted in a sort of methodological individualism that is increasingly prominent in management research and practice. However, when it comes to addressing corporate inequality, at least, we find that the strategies designed to change individuals, such as training and evaluations, networking and mentoring, are less

effective than the conventional management solution of setting goals and assigning responsibility for moving towards those goals. The poor performance of practices that address social-psychological and social-relational sources of inequality should not be taken as evidence that these forces do not produce inequality. There is a preponderance of empirical research showing that bias and poor network connections contribute to inequality. Why the remedies do not work well is an open question. Our findings suggest that when organizational responsibility structures are in place and when employers are liable to federal contractor compliance program, the effectiveness of some of those programs rises. Yet, their effects remain weak even under responsibility structures. Further research is needed to determine why these programs do not live up to their promise.

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Table 1 - Means and Standard Deviations of Variables Used in the Analysis of Managerial Workforce Composition* N=16,265

	Mean	S.D.	Min	Max	Type	Source
<u>Outcome Variables</u>						
Proportion of managers who are white men	0.700	0.236	0	1	Continuous	EEO-1
Proportion of managers who are white women	0.222	0.212	0	1	Continuous	EEO-1
Proportion of managers who are black women	0.014	0.042	0	0.667	Continuous	EEO-1
Proportion of managers who are black men	0.024	0.059	0	1	Continuous	EEO-1
<u>Affirmative Action and Diversity Measures</u>						
Affirmative Action Plan	0.422	0.494	0	1	Binary	Survey
Full Time EEO/Diversity Staff	0.045	0.206	0	1	Binary	Survey
Diversity Committee	0.052	0.222	0	1	Binary	Survey
Diversity Training	0.064	0.244	0	1	Binary	Survey
Diversity Evaluations of Managers	0.102	0.303	0	1	Binary	Survey
Networking Programs	0.064	0.244	0	1	Binary	Survey
Mentoring Programs	0.033	0.179	0	1	Binary	Survey
<u>Organizational Structures</u>						
Percent managers in establishment	0.124	0.090	0.002	0.789	Continuous	EEO-1
Establishment size	702	827	10	12866	Continuous	EEO-1
Union agreement	0.254	0.436	0	1	Binary	Survey
Formal human resources policies	4.917	2.516	0	9	Count ¹	Survey
Special requirment for women and minorities	0.156	0.363	0	1	Binary	Survey
Work-family accommodations	0.912	0.978	0	4	Count ²	Survey
<u>Workforce Composition</u>						
Percent of top managers who are minorities	3.471	10.239	0	100	Continuous ³	Survey
Percent of top managers who are women	16.445	23.575	0	100	Continuous ³	Survey
No White men in management	0.006	0.078	0	1	Binary	EEO-1
No White women in management	0.120	0.325	0	1	Binary	EEO-1
No Black women in management	0.712	0.453	0	1	Binary	EEO-1
No Black men in management	0.561	0.496	0	1	Binary	EEO-1

Table 1 Continued on Next Page

Table 1 (Continued)

	Mean	S.D.	Min	Max	Type	Source
Proportion of non-managers who are white men	0.406	0.252	0	1	Continuous	EEO-1
Proportion of non-managers who are white women	0.385	0.251	0	1	Continuous	EEO-1
Proportion of non-managers who are black women	0.059	0.101	0	0.893	Continuous	EEO-1
Proportion of non-managers who are black men	0.053	0.093	0	0.940	Continuous	EEO-1
Proportion in core job who are white men	0.382	0.318	0	1	Continuous	EEO-1
Proportion in core job who are white women	0.385	0.251	0	1	Continuous	EEO-1
Proportion in core job who are black women	0.062	0.116	0	1	Continuous	EEO-1
Proportion in core job who are black men	0.056	0.111	0	0.963	Continuous	EEO-1
Proportion industry labor force that is white male	0.444	0.155	0.145	0.742	Continuous	CPS
Proportion industry labor force that is white female	0.328	0.146	0.103	0.624	Continuous	CPS
Proportion industry labor force that is black female	0.042	0.025	0.004	0.119	Continuous	CPS
Proportion industry labor force that is black male	0.040	0.019	0.009	0.106	Continuous	CPS
Proportion state labor force that is white male	0.388	0.060	0.116	0.595	Continuous	CPS
Proportion state labor force that is white female	0.354	0.063	0.093	0.496	Continuous	CPS
Proportion state labor force that is black female	0.048	0.035	0.000	0.201	Continuous	CPS
Proportion state labor force that is black male	0.043	0.030	0.000	0.186	Continuous	CPS
<u>Organizational Environment</u>						
Affirmative Action Status (Government Contract)	0.455	0.498	0	1	Binary	EEO-1
Proportion industry members that are contractors	0.483	0.228	0	0.821	Continuous	EEO-1
In-house attorney	0.277	0.448	0	1	Count ²	Survey
Discrimination lawsuits	0.341	0.474	0	1	Binary	Survey
EEOC charges	0.314	0.464	0	1	Binary	Survey
Compliance review	0.149	0.356	0	1	Binary	Survey
Industry employment (in '000,000)	3782	2784	996	11458	Continuous	CPS
State unemployment rate	6.158	2.035	2.0	18	Continuous	BLS
Year	1989	8.629	1971	2001	Continuous	EEO-1

* All independent variables, excluding the proportion of managerial jobs, are measures one year before the outcome variables.

¹ Includes adoption of a formal HR department, written hiring, promotion and discharge guidelines, written job description, written promotion ladder, written performance evaluations, pay grade system and internal posting of jobs.

² Includes paid maternity leave, paid paternity leave, policy allowing flexible work hours and top management support for work-family balance.

³ Percents were obtained in 10 years intervals (2002, 1992 and 1982). Values for the years in between were interpolated using a linear function.

Table 2 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of AA plans and Diversity Programs, 1971-2002.

Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men	White Women	Black Women	Black Men
<u>Organizational Responsibility</u>				
Affirmative Action Plan	-0.078 ** 0.017	0.086 ** 0.017	0.005 0.014	0.039 * 0.015
Diversity Committee	-0.081 ** 0.028	0.175 ** 0.029	0.242 ** 0.024	0.114 ** 0.026
Diversity Staff	-0.055 0.033	0.104 ** 0.034	0.123 ** 0.028	0.128 ** 0.030
<u>Managerial Bias</u>				
Diversity Training	-0.038 0.021	-0.001 0.022	-0.066 ** 0.018	0.031 0.019
Diversity Evaluations	0.028 0.027	0.061 * 0.028	-0.027 0.023	-0.081 ** 0.025
<u>Social Isolation</u>				
Networking Programs	-0.083 ** 0.027	0.080 ** 0.028	0.012 0.023	-0.096 ** 0.024
Mentoring Programs	-0.011 0.033	-0.004 0.035	0.213 ** 0.029	0.037 0.031

Table 2 Continued on Next Page

** p<0.01; * p<0.05; (two tailed test)

Table 2 (continued)

	White Men	White Women	Black Women	Black Men
<u>Legal Environment</u>				
Government Contract	0.032 0.019	0.006 0.019	-0.039* 0.016	-0.027 0.017
Compliance Review	-0.083** 0.020	0.077** 0.020	0.020 0.017	0.081** 0.018
Title VII Lawsuit	-0.107** 0.015	0.141** 0.016	0.044** 0.013	0.029* 0.014
EEOC Charge	-0.007 0.016	0.014 0.017	0.019 0.014	0.034* 0.015
<u>Organizational Structures</u>				
Proportion managers in establishment	-0.896** 0.108	0.309** 0.112	-4.499** 0.092	-3.989** 0.099
Establishment size (log)	-0.021 0.012	-0.023* 0.012	-0.661** 0.010	-0.515** 0.011
Union agreement	-0.053 0.033	-0.068* 0.034	-0.007 0.028	-0.029 0.030
Formal personnel policies	-0.002 0.004	-0.003 0.004	-0.016** 0.003	-0.015** 0.003
Targeted recruitment policy	-0.071** 0.021	0.108** 0.021	0.131** 0.018	0.099** 0.019
In-house attorney	-0.100** 0.023	0.126** 0.024	-0.040* 0.020	0.021 0.021
Work-family accommodations	-0.078** 0.008	0.065** 0.009	0.026** 0.007	0.004 0.008
<u>Workforce Composition</u>				
Proportion minorities in top management	-0.002 0.001	-0.002 0.001	0.007** 0.001	0.012** 0.001
Proportion women in top management	-0.002** 0.001	0.004** 0.001	0.002** 0.001	-0.002* 0.001
No focal group in management	-0.459** 0.049	-0.234** 0.012	-0.636** 0.011	-0.574** 0.011
Proportion of focal group in non-managerial jobs	1.375** 0.063	1.481** 0.069	1.370** 0.168	1.795** 0.193
Proportion of focal group in core-job	-0.162** 0.038	-0.186** 0.040	-0.483** 0.109	0.153 0.133

(Table 2 continued on next page)

Table 2 (continued)

	White Men	White Women	Black Women	Black Men
<u>External Labor Pools (proportions)</u>				
White men	0.508 **	-0.449 **	-0.033	0.245 **
in industry labor force (log)	0.081	0.083	0.069	0.074
White women	0.066	-0.001	-0.032	0.028
in industry labor force (log)	0.063	0.065	0.054	0.058
Black women	-0.136 **	0.084 **	-0.004	0.088 **
in industry labor force (log)	0.021	0.022	0.018	0.019
Black men	-0.101 **	0.069 *	0.036	0.028
in industry labor force (log)	0.026	0.027	0.022	0.024
White men	1.662 **	-1.899 **	-0.610 *	0.027
in state labor force	0.303	0.312	0.258	0.277
White women	-2.229 **	2.191 **	-1.141 **	-0.500 *
in state labor force	0.249	0.258	0.213	0.229
Black men	1.899 *	-1.340	-2.612 **	-3.949 **
in state labor force	0.747	0.771	0.639	0.686
Black women	-2.557 **	3.461 **	3.058 **	2.611 **
in state labor force	0.595	0.614	0.509	0.546
<u>Organizational environment</u>				
Industry employment (in '000,000)	0.021 **	-0.049 **	-0.011 **	-0.015 **
	0.005	0.005	0.004	0.004
State unemployment rate	0.019 **	-0.031 **	-0.008 *	0.001
	0.004	0.004	0.003	0.004
Percent contractors in industry	0.808 **	-0.898 **	-0.389 **	0.201
	0.129	0.133	0.110	0.118
R-sq	.3335	.3146	.3636	.2799
N (organization-year spells)	16265	16265	16265	16265
N (organizations)	708	708	708	708
Number of Parameters	64	64	64	64
Log Likelihood Ratio test	Chi-sq (28) = 405.66		p<0.001	

Note: ^aAll independent variables are lagged by one year, excluding proportion of managerial jobs. The analysis includes 30 binary variables for the years 1972-2001 (1971 is the omitted year and 2002 is included in the analysis only for measuring the outcome variable).

** p<0.01; * p<0.05; (two tailed test)

Table 3: Estimated Average Differences in Managerial Composition Due to Adoption of Affirmative Action and Diversity Practices (Based on Composition in Year of Adoption)

	White Men	White Women	Black Women	Black Men
<u>Affirmative Action Plan</u>				
Proportion in year of adoption	0.783	0.132	0.017	0.024
Estimated proportion with practice	0.769	0.142	0.017	0.025
Percent difference due to adoption:	-1.8% **	7.6% **	0.0%	4.2% **
<u>Diversity Committee</u>				
Proportion in year of adoption	0.630	0.230	0.014	0.020
Estimated proportion with practice	0.611	0.262	0.018	0.022
Percent difference due to adoption:	-3.0% **	13.9% **	29.8% **	10.0% **
<u>Diversity Staff</u>				
Proportion in year of adoption	0.724	0.157	0.014	0.021
Estimated proportion with practice	0.713	0.171	0.016	0.024
Percent difference due to adoption:	-1.5%	8.9% **	14.3% **	14.3% **
<u>Diversity Training</u>				
Proportion in year of adoption	0.687	0.194	0.017	0.022
Estimated proportion with practice	0.679	0.194	0.016	0.023
Percent difference due to adoption:	-1.2%	0.0%	-5.9% **	4.5%
<u>Diversity Evaluations</u>				
Proportion in year of adoption	0.720	0.160	0.017	0.024
Estimated proportion with practice	0.726	0.168	0.017	0.022
Percent difference due to adoption:	0.8%	5.0%	0.0%	-8.3% **
<u>Networking Programs</u>				
Proportion in year of adoption	0.702	0.193	0.014	0.020
Estimated proportion with practice	0.684	0.206	0.014	0.018
Percent difference due to adoption:	-2.6% **	6.7% **	0.0%	-10.0% **
<u>Mentoring Programs</u>				
Proportion in year of adoption	0.690	0.216	0.017	0.021
Estimated proportion with practice	0.688	0.215	0.021	0.022
Percent difference due to adoption:	-0.3%	-0.5%	23.5% **	4.8%

* p<.05; ** p<.01

Table 4 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of any One or More AA plans and Diversity Programs, 1971-2002.

Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men		White Women		Black Women		Black Men
Only one practice	-0.043 0.016	**	0.056 0.016	**	-0.009 0.013		0.026 0.014
2 practices	-0.091 0.023	**	0.121 0.023	**	0.020 0.019		0.024 0.021
3 practices or more	-0.158 0.029	**	0.232 0.030	**	0.127 0.025	**	0.046 0.027
R-sq	0.3323		0.3124		0.3569		0.2767
N (organization-year spells)	16265		16265		16265		16265
N (organizations)	708		708		708		708
Number of Parameters	60		60		60		60

^aNote: The analysis includes all the variables appearing in Table 1. See Appendix Table 2 for the results of the other variables included in the model.

** p<0.01; * p<0.05; (two tailed test)

Table 5 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of AA plans and Diversity Programs - Interaction with Responsibility Structures, 1971-2002.

Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men	White Women	Black Women	Black Men
Responsibility Structures	-0.063 ** 0.017	0.081 ** 0.017	0.007 0.014	0.042 ** 0.015
Diversity Training	-0.026 0.036	-0.064 0.038	-0.046 0.031	0.026 0.033
* Responsibility Structure	-0.026 0.042	0.132 ** 0.043	0.044 0.036	0.040 0.038
Diversity Evaluations	0.294 ** 0.057	-0.042 0.059	-0.065 0.049	-0.077 0.052
* Responsibility Structure	-0.326 ** 0.061	0.136 * 0.063	0.057 0.053	0.009 0.057
Networking Programs	-0.090 0.050	0.163 ** 0.052	-0.026 0.043	-0.172 ** 0.046
* Responsibility Structure	-0.003 0.056	-0.088 0.058	0.073 0.048	0.118 * 0.051
Mentoring Programs	0.140 ** 0.066	-0.101 0.068	-0.042 0.057	0.127 * 0.061
* Responsibility Structure	-0.183 * 0.074	0.133 0.076	0.344 ** 0.063	-0.108 0.068
R-sq	0.3347	0.3136	0.3602	0.2785
N (organization-year spells)	16265	16265	16265	16265
N (organizations)	708	708	708	708
Number of Parameters	66	66	66	66

^aNote: The analysis includes all the variables appearing in Table 1. See Appendix Table 3 for the results of the other variables included in the model.

** p<0.01; * p<0.05; (two tailed test)

Table 6 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of AA plans and Diversity Programs, 1971-2002. Interaction Model.^a

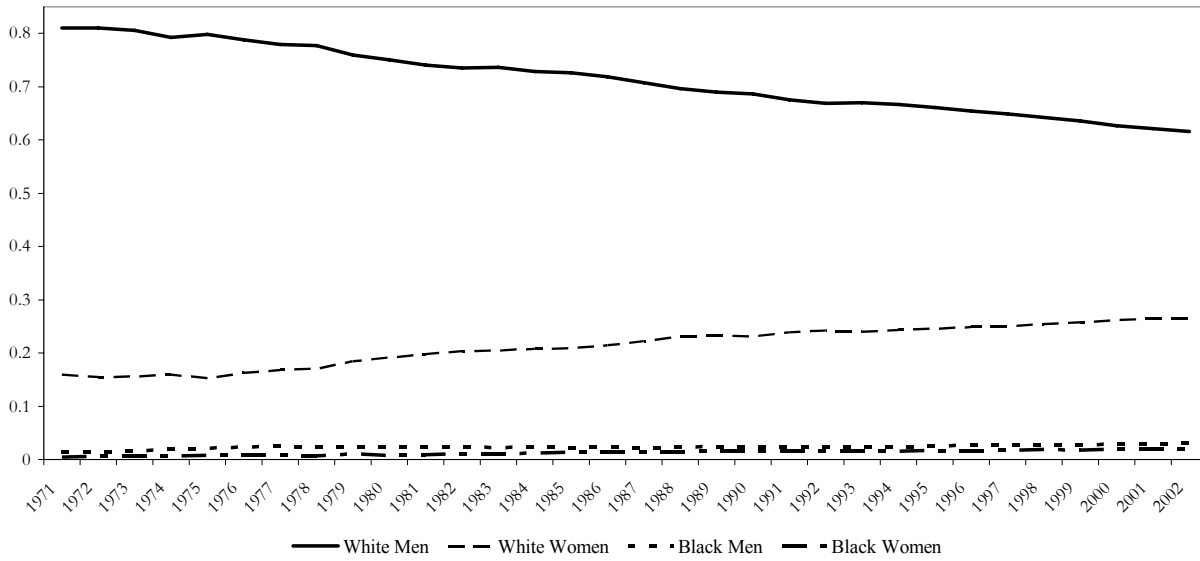
Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men	White Women	Black Women	Black Men
Affirmative Action Plan	-0.050 *	0.086 **	0.000	0.007
	0.023	0.023	0.019	0.021
* government contract	-0.050	0.003	0.000	0.053 *
	0.028	0.029	0.024	0.026
Diversity Committee	-0.096 *	0.173 **	0.270 **	0.076 *
	0.038	0.040	0.033	0.035
* government contract	0.029	-0.006	-0.050	0.074
	0.053	0.055	0.046	0.049
Diversity Staff	-0.076	0.018	0.205 **	0.240 **
	0.058	0.060	0.050	0.053
* government contract	0.024	0.120	-0.127 *	-0.145 *
	0.066	0.068	0.056	0.060
Diversity Training	0.005	-0.094 **	-0.116 **	-0.016
	0.027	0.028	0.023	0.025
* government contract	-0.092 *	0.197 **	0.107 **	0.100 **
	0.038	0.040	0.033	0.035
Diversity Evaluations	0.049	0.090 *	-0.097 **	-0.063
	0.039	0.041	0.034	0.036
* government contract	-0.041	-0.035	0.118 **	-0.027
	0.050	0.051	0.042	0.045
Networking Programs	-0.133 **	0.171 **	-0.034	-0.035
	0.038	0.039	0.033	0.035
* government contract	0.111 *	-0.195 **	0.069	-0.113 *
	0.051	0.052	0.043	0.046
Mentoring Programs	0.028	-0.053	0.179 **	0.070
	0.046	0.047	0.039	0.042
* government contract	-0.081	0.086	0.057	-0.056
	0.063	0.065	0.054	0.058
R-sq	0.3341	0.3165	0.3650	0.2811
N (organization-year spells)	16265	16265	16265	16265
N (organizations)	708	708	708	708
Number of Parameters	71	71	71	71
Log Likelihood Ratio Test	Chi-sq (28) = 135.86 p<0.001			

^aNote: The analysis includes all the variables appearing in Table 1. See Appendix Table 4 for the results of the other variables included in the model.

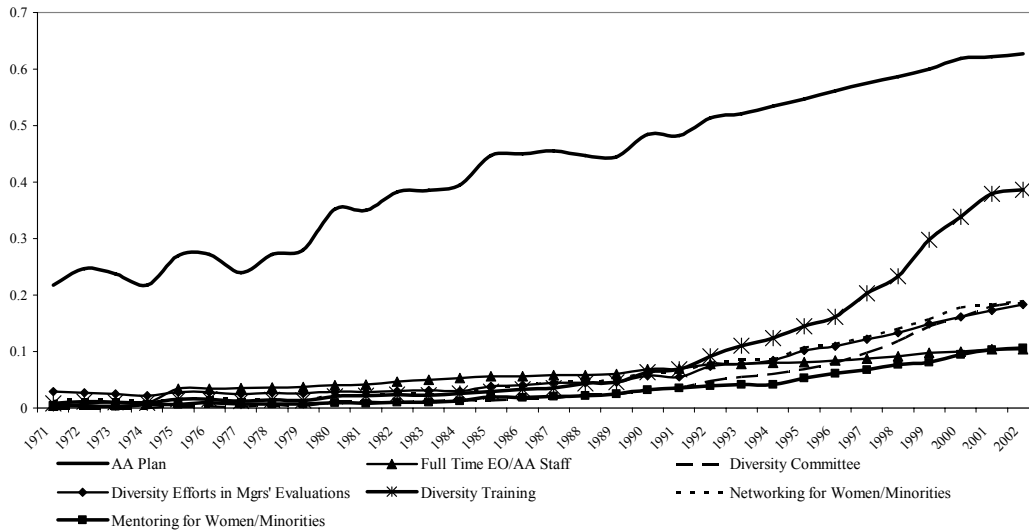
** p<0.01; * p<0.05; (two tailed test)

Figure 1 - Proportion of White Men and Women and Black Men and Women Among Managers, 1971-2002



Based on EEO-1 reports 1971-2002 sampled for Princeton University Human Resources Survey 2002. Varying N. Maximum N =708

Figure 2 - Prevalence of Affirmative Action Plans and Diversity Programs in American Organizations, 1971-2002



Based on Princeton University Human Resources Survey, 2002. N=708

Appendix Table 1: Pearson Correlations and Joint Distribution of AA plans and Diversity Programs*. N=16,265

	Affirmative Action Plan	Diversity Committee	Diversity Staff	Diversity Training	Diversity Evaluations	Networking Programs	Mentoring Programs
Affirmative Action Plan	1						
Diversity Committee	0.1592 3.5%	1					
Diversity Staff	0.1992 4.4%	0.2348 1.3%	1				
Diversity Training	0.1686 6.8%	0.4190 3.1%	0.1493 1.5%	1			
Diversity Evaluations	0.2033 5.1%	0.2327 1.5%	0.1683 1.2%	0.2787 2.7%	1		
Networking Programs	0.1438 4.4%	0.2822 1.7%	0.2085 1.5%	0.3211 3.0%	0.2629 2.0%	1	
Mentoring Programs	0.1106 2.4%	0.2257 1.0%	0.1951 1.0%	0.2567 1.7%	0.2598 1.3%	0.3855 1.9%	1

* All the correlation coefficients and joint frequencies are significant at the level of $p < .01$.

**Appendix Table 2 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of AA and Diversity Programs, 1971-2002.
Controls for Count Model Presented in Table 4.^a**

Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men	White Women	Black Women	Black Men
<u>Organization Structures:</u>				
Proportion managers in establishment	-0.906 **	0.323 **	-4.439 **	-3.970 **
	0.108	0.112	0.093	0.099
Establishment size (log)	-0.024 *	-0.020	-0.657 **	-0.509 **
	0.011	0.012	0.010	0.011
Union agreement	-0.058	-0.063	0.005	-0.019
	0.033	0.034	0.028	0.030
Formal Personnel policies	-0.002	-0.003	-0.017 **	-0.015 **
	0.004	0.004	0.003	0.003
Targeted Recruitment policy	-0.072 **	0.108 **	0.141 **	0.099 **
	0.021	0.021	0.018	0.019
In-house attorney	-0.104 **	0.133 **	-0.029	0.030
	0.023	0.024	0.020	0.021
Work-family accommodations	-0.081 **	0.067 **	0.028 **	0.003
	0.008	0.008	0.007	0.008
<u>Workforce Composition</u>				
Proportion minorities	-0.001	-0.002	0.007 **	0.011 **
in top management	0.001	0.001	0.001	0.001
Proportion women	-0.002 **	0.004 **	0.002 **	-0.002 *
in top management	0.001	0.001	0.001	0.001
No focal group in management	-0.460 **	-0.234 **	-0.638 **	-0.576 **
	0.049	0.012	0.011	0.011
Proportion of focal group	1.389 **	1.509 **	1.388 **	1.812 **
in non-managerial jobs	0.063	0.069	0.169	0.193
Proportion of focal group	-0.168 **	-0.195 **	-0.498 **	0.156
in core-job	0.038	0.040	0.110	0.134

(Appendix Table 2 continued on next page)

Appendix Table 2 (Continued from Previous Page)

	White Men	White Women	Black Women	Black Men
<u>External Labor Pools (proportions)</u>				
White men	0.507 **	-0.448 **	-0.048	0.245 **
in industry labor force (log)	0.081	0.083	0.069	0.074
White women	0.052	0.017	-0.036	0.032
in industry labor force (log)	0.063	0.065	0.054	0.058
Black women	-0.139 **	0.087 **	0.003	0.092 **
in industry labor force (log)	0.021	0.022	0.018	0.019
Black men	-0.102 **	0.073 **	0.041	0.029
in industry labor force (log)	0.026	0.027	0.022	0.024
White men	1.720 **	-1.995 **	-0.712 **	-0.036
in state labor force	0.303	0.313	0.259	0.278
White women	-2.247 **	2.190 **	-1.149 **	-0.510 *
in state labor force	0.249	0.259	0.214	0.229
Black men	1.922 *	-1.264	-2.453 **	-3.854 **
in state labor force	0.747	0.772	0.642	0.687
Black women	-2.590 **	3.445 **	3.005 **	2.494 **
in state labor force	0.595	0.615	0.512	0.547
<u>Organizational environment</u>				
Government Contract	0.028	0.005	-0.037 **	-0.024
	0.019	0.019	0.016	0.017
Compliance Review	-0.091 **	0.088 **	0.022	0.088 **
	0.020	0.020	0.017	0.018
Title VII Law Suit	-0.106 **	0.138 **	0.038 **	0.030 *
	0.015	0.016	0.013	0.014
EEOC Charge	-0.005	0.012	0.015	0.031 *
	0.016	0.017	0.014	0.015
Industry employment (in '000,000)	0.021 **	-0.049 **	-0.010 *	-0.014 **
	0.005	0.005	0.004	0.004
State unemployment rate	0.019 **	-0.031 **	-0.008 *	0.001
	0.004	0.004	0.003	0.004
Percent contractors in industry	0.808 **	-0.876 **	-0.389 **	0.202
	0.129	0.133	0.110	0.118
R-sq	0.3323	0.3124	0.3569	0.2767
N (organization-year spells)	16265	16265	16265	16265
N (organizations)	708	708	708	708
Number of Parameters	60	60	60	60

Note: ^aAll independent variables are lagged by one year, excluding proportion of managerial jobs. The analysis includes 30 binary variables for the years 1972-2001 (1971 is the omitted year and 2002 is included in the analysis only for measuring the outcome variable).

** p<0.01; * p<0.05; (two tailed test)

Appendix Table 3 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of AA and Diversity Programs, 1971-2002. Controls for Responsibility Interaction Model Presented in Table 5.^a

Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men	White Women	Black Women	Black Men
<u>Organization Structures:</u>				
Proportion managers in establishment	-0.924 **	0.350 **	-4.426 **	-3.978 **
	0.108	0.112	0.093	0.100
Establishment size (log)	-0.022	-0.021	-0.658 **	-0.513 **
	0.012	0.012	0.010	0.011
Union agreement	-0.043	-0.066	-0.002	-0.022
	0.033	0.034	0.028	0.030
Formal Personnel policies	-0.004	-0.003	-0.016 **	-0.015 **
	0.004	0.004	0.003	0.003
Targeted Recruitment policy	-0.068 **	0.109 **	0.138 **	0.105 **
	0.021	0.021	0.018	0.019
In-house attorney	-0.103 **	0.136 **	-0.030	0.030
	0.023	0.024	0.020	0.021
Work-family accommodations	-0.076 **	0.067 **	0.028 **	0.004
	0.008	0.009	0.007	0.008
<u>Workforce Composition</u>				
Proportion minorities	-0.002	-0.002	0.007 **	0.011 **
in top management	0.001	0.001	0.001	0.001
Proportion women	-0.002 **	0.004 **	0.003 **	-0.002 *
in top management	0.001	0.001	0.001	0.001
No focal group in management	-0.457 **	-0.234 **	-0.637 **	-0.574 **
	0.049	0.012	0.011	0.011
Proportion of focal group	1.366 **	1.489 **	1.300 **	1.811 **
in non-managerial jobs	0.063	0.069	0.169	0.193
Proportion of focal group	-0.159 **	-0.193 **	-0.443 **	0.157
in core-job	0.038	0.040	0.109	0.133

(Appendix Table 3 continued on next page)

Appendix Table 3 (Continued from Previous Page)

	White Men	White Women	Black Women	Black Men
<u>External Labor Pools (proportions)</u>				
White men	0.515 **	-0.459 **	-0.026	0.245 **
in industry labor force (log)	0.081	0.083	0.069	0.074
White women	0.064	0.008	-0.027	0.029
in industry labor force (log)	0.063	0.065	0.054	0.058
Black women	-0.137 **	0.086 **	0.000	0.090 **
in industry labor force (log)	0.021	0.022	0.018	0.019
Black men	-0.102 **	0.073 **	0.042	0.033
in industry labor force (log)	0.026	0.027	0.022	0.024
White men	1.674 **	-1.940 **	-0.655 *	-0.035
in state labor force	0.302	0.312	0.259	0.278
White women	-2.198 **	2.156 **	-1.128 **	-0.516 *
in state labor force	0.249	0.259	0.214	0.229
Black men	1.857 *	-1.192	-2.417 **	-3.816 **
in state labor force	0.746	0.771	0.640	0.686
Black women	-2.552 **	3.369 **	2.956 **	2.526 **
in state labor force	0.594	0.614	0.510	0.546
<u>Organizational environment</u>				
Government Contract	0.032	0.002	-0.043 **	-0.030
	0.019	0.019	0.016	0.017
Compliance Review	-0.082 **	0.081 **	0.024	0.087 **
	0.020	0.020	0.017	0.018
Title VII Law Suit	-0.107 **	0.140 **	0.042 **	0.027 *
	0.015	0.016	0.013	0.014
EEOC Charge	-0.009	0.014	0.018	0.033 *
	0.016	0.017	0.014	0.015
Industry employment (in '000,000)	0.000 **	0.000 **	0.000 *	0.000 **
	0.000	0.000	0.000	0.000
State unemployment rate	0.020 **	-0.031 **	-0.009 **	0.001
	0.004	0.004	0.003	0.004
Percent contractors in industry	0.810 **	-0.901 **	-0.390 **	0.202
	0.129	0.133	0.110	0.118
R-sq	0.3347	0.3136	0.3602	0.2785
N (organization-year spells)	16265	16265	16265	16265
N (organizations)	708	708	708	708
Number of Parameters	66	66	66	66

Note: ^aAll independent variables are lagged by one year, excluding proportion of managerial jobs. The analysis includes 30 binary variables for the years 1972-2001 (1971 is the omitted year and 2002 is included in the analysis only for measuring the outcome variable).

** p<0.01; * p<0.05; (two tailed test)

Appendix Table 4 - Fixed Effects Estimates of the Log Odds of White Men and Women and Black Women and Men in Management after Adoption of AA and Diversity Programs, 1971-2002. Controls for Contractor Interaction Model Presented in Table 6.^a

Coefficients from seemingly unrelated regression, unstandardized coefficients, standard errors below the coefficients.

	White Men	White Women	Black Women	Black Men
<u>Organization Structures:</u>				
Proportion managers in establishment	-0.905 **	0.328 **	-4.497 **	-3.983 **
	0.108	0.112	0.092	0.099
Establishment size (log)	-0.021	-0.024 *	-0.660 **	-0.515 **
	0.012	0.012	0.010	0.011
Union agreement	-0.053	-0.069 *	-0.003	-0.026
	0.033	0.034	0.028	0.030
Formal Personnel policies	-0.002	-0.002	-0.015 **	-0.015 **
	0.004	0.004	0.003	0.003
Targeted Recruitment policy	-0.070 **	0.108 **	0.129 **	0.099 **
	0.021	0.021	0.018	0.019
In-house attorney	-0.099 **	0.128 **	-0.042 *	0.021
	0.023	0.024	0.020	0.021
Work-family accommodations	-0.080 **	0.068 **	0.027 **	0.005
	0.008	0.009	0.007	0.008
<u>Workforce Composition</u>				
Proportion minorities	-0.002	-0.002	0.007 **	0.012 **
in top management	0.001	0.001	0.001	0.001
Proportion women	-0.002 **	0.004 **	0.002 **	-0.002 *
in top management	0.001	0.001	0.001	0.001
No focal group in management	-0.461 **	-0.233 **	-0.633 **	-0.574 **
	0.049	0.012	0.011	0.011
Proportion of focal group	1.373 **	1.474 **	1.367 **	1.807 **
in non-managerial jobs	0.063	0.069	0.168	0.192
Proportion of focal group	-0.163 **	-0.189 **	-0.478 **	0.144
in core-job	0.038	0.040	0.109	0.133

(Appendix Table 4 continued on next page)

Appendix Table 4 (Continued from Previous Page)

	White Men	White Women	Black Women	Black Men
<u>External Labor Pools (proportions)</u>				
White men	0.509 **	-0.442 **	-0.036	0.240 **
in industry labor force (log)	0.081	0.083	0.069	0.074
White women	0.064	0.006	-0.029	0.033
in industry labor force (log)	0.063	0.065	0.054	0.058
Black women	-0.138 **	0.086 **	-0.001	0.087 **
in industry labor force (log)	0.021	0.022	0.018	0.019
Black men	-0.103 **	0.073 **	0.039	0.031
in industry labor force (log)	0.026	0.027	0.022	0.024
White men	1.642 **	-1.905 **	-0.575 *	0.058
in state labor force	0.303	0.312	0.258	0.278
White women	-2.226 **	2.186 **	-1.121 **	-0.491 *
in state labor force	0.249	0.258	0.213	0.229
Black men	1.842 *	-1.285	-2.582 **	-3.907 **
in state labor force	0.747	0.770	0.638	0.685
Black women	-2.546 **	3.440 **	3.115 **	2.591 **
in state labor force	0.595	0.613	0.509	0.546
<u>Organizational environment</u>				
Government Contract	0.058 **	-0.005	-0.052 **	-0.046 *
	0.022	0.023	0.019	0.020
Compliance Review	-0.067 **	0.062 **	0.006	0.068 **
	0.021	0.021	0.018	0.019
Title VII Law Suit	-0.107 **	0.139 **	0.043 **	0.028 *
	0.015	0.016	0.013	0.014
EEOC Charge	-0.005	0.013	0.020	0.033 *
	0.016	0.017	0.014	0.015
Industry employment (in '000,000)	0.021 **	-0.048 **	-0.009 *	-0.014 **
	0.005	0.005	0.004	0.004
State unemployment rate	0.020 **	-0.031 **	-0.008 *	0.001
	0.004	0.004	0.003	0.004
Percent contractors in industry	0.818 **	-0.914 **	-0.392 **	0.207
	0.129	0.133	0.110	0.118
N	16265	16265	16265	16265
R-sq	.3341	.3165	.3650	.2811
Chi-sq	8453	7654	9523	6634
Number of parameters	71	71	71	71

Note: ^aAll independent variables are lagged by one year, excluding proportion of managerial jobs. The analysis includes 30 binary variables for the years 1972-2001 (1971 is the omitted year and 2002 is included in the analysis only for measuring the outcome variable).

** p<0.01; * p<0.05; (two tailed test)