

Recruitment Efforts to Reduce Adverse Impact: Targeted Recruiting for Personality, Cognitive Ability, and Diversity

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Noting the presumed tradeoff between diversity and performance goals in contemporary selection practice, the authors elaborate on recruiting-based methods for avoiding adverse impact while maintaining aggregate individual productivity. To extend earlier work on the primacy of applicant pool characteristics for resolving adverse impact, they illustrate the advantages of simultaneous cognitive ability- and personality-based recruiting. Results of an algebraic recruiting model support general recruiting for cognitive ability, combined with recruiting for conscientiousness within the underrepresented group. For realistic recruiting effect sizes, this type of recruiting strategy greatly increases average performance of hires and percentage of hires from the underrepresented group. Further results from a policy-capturing study provide initial guidance on how features of organizational image can attract applicants with particular job-related personalities and abilities, in addition to attracting applicants on the basis of demographic background.

Keywords: minority recruiting, adverse impact, personnel selection, conscientiousness, cognitive ability

Organizations are often caught between the seemingly incompatible goals of increasing diversity and maximizing performance (Ottz, 2002; Sackett, Schmitt, Ellingson, & Kabin, 2001). On one hand, there is pressure to hire a diverse workforce to improve perceived fairness, conserve costs (e.g., by avoiding litigation), serve the needs of diverse customers, and encourage innovation (De Drue & West, 2001; Jackson, Joshi, & Erhardt, 2003). On the other hand, organizations have pressure to deliver results to stakeholders through heightened performance and efficiency of decision making.

Selection practices that result in disparate-treatment discrimination, unless properly validated, are prohibited by law (Civil Rights Acts of 1964 and 1991). Such employment discrimination can be evidenced through adverse impact statistics (Morris & Lobsenz, 2000), in addition to information about an organization's general equal employment posture, prior discriminatory practices, and use of affirmative action programs (see Roth, Bobko, & Switzer, 2006, and the *Uniform Guidelines on Employee Selection Procedures*, 1978). In particular, two kinds of adverse impact statistics have been most referenced in legal discrimination cases:¹ the so-called four-fifths rule (*Uniform Guidelines*, 1978) and statistical significance tests (e.g., Fisher's exact test; Roth et al., 2006). The four-fifths rule compares the selection ratio of any sex, race, or ethnic subgroup (e.g., Black applicants) with the selection ratio of

the subgroup with the highest selection ratio (e.g., White applicants), and if this ratio of selection ratios falls below 80% (or four-fifths), then it is considered to be evidence of adverse impact (*Uniform Guidelines*, 1978). At this point, we make clear that adverse impact is a legal concept that arises from the psychological phenomena of subgroup differences (i.e., standardized mean differences between demographic groups on measures of psychological constructs, or subgroup *d*). At a given level of the overall selection ratio, adverse impact is almost completely determined by subgroup differences (*d*; see Newman, Jacobs, & Bartram, 2007, p. 1404), which is why some researchers use the terms *subgroup d* and *adverse impact* synonymously (or, alternatively, refer to subgroup *d* as *adverse impact potential*; Roth et al., 2006). Whereas it is possible to have subgroup differences without adverse impact (under high selection ratios), it is not plausible to have adverse impact without subgroup differences (with the exception of chance selection outcomes that can result when one has very small sample sizes available). In the current work, we evaluate adverse impact using the four-fifths rule, while acknowledging that adverse impact is very closely tied to psychological subgroup differences (*d*).

Industrial/organizational psychologists have long provided advice to organizations on how to reduce adverse impact (Guion, 1998), although this advice typically relates to selection referral methods and choices made in combining multiple selection predictors (Cascio, Ottz, Zedeck, & Goldstein, 1991; Hatrup, Rock, & Scalia, 1997; Sackett & Ellingson, 1997; Sackett & Roth, 1996). However, altering selection systems is only the second phase in reducing adverse impact—the first phase is to ensure a quality

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¹ We clarify that this article focuses on flow statistics related to adverse impact in the implementation of recruiting and selection practices. Stock statistics, which compare a company's workforce to the relevant labor market (Arvey & Faley, 1988; Ledvinka & Scarpello, 1991), are not explicitly considered here.

applicant pool. Without a qualified and diverse applicant pool, even the best selection system cannot prevent adverse impact (Ryan, Ployhart, & Friedel, 1998). This article deals with the issue of generating applicant pools for selection systems to work effectively, identifying both capable and diverse candidates. Specific recruiting parameters are shown to combine interactively in the production of quality applicant pools.

The purpose of this article is to illustrate aspects of recruiting that can most directly influence the quality of applicant pools and reduce adverse impact, helping to resolve the tradeoff between diversity and performance goals (e.g., De Corte, 1999; Sackett et al., 2001). To explain what we mean by *recruiting*, we use Rynes's (1991) definition: "All organizational practices and decisions that affect either the number, or types, of individuals who are willing to apply for, or to accept, a given vacancy" (p. 429). In this article, we illustrate the impact of various recruiting strategies on the percentage of minority hires and average individual performance of new hires. In particular, we develop the notion of *targeted recruiting*, or all organizational practices and decisions that affect either the number or the types of targeted individuals who are willing to apply for, or to accept, a given vacancy. Targeted individuals are those individuals needed to fill a specific gap in the applicant pool. One such gap might be for qualified minority applicants. Thus, targeting minority candidates with high cognitive ability or conscientiousness would fill this gap in the applicant pool and may reduce adverse impact. Our article is unique in its examination of multiattribute targeted recruiting as a way to reduce adverse impact.

In what follows, we describe two approaches to reducing adverse impact: (a) altering selection systems and (b) altering recruiting techniques. Then we elaborate on how recruitment supports diversity and performance goals and argue for a targeted recruiting approach. Finally, we introduce a specific strategy for attributes-focused recruiting, based on the logic that different job ads will attract applicants with different traits and abilities (including conscientiousness and general mental ability). To emphasize the plausibility of this recruiting strategy, we present supportive data showing that the content of job descriptions affects the likelihood that high-ability and conscientious candidates will apply.

Changing the Focus From Selection Systems to Applicant Pools

Although adverse impact is a problem that can be addressed through either improvements to the selection system or improvements to the applicant pool, the focus has been on fixing the selection systems. Research on selection systems continues to be a vibrant area of study, with significant progress made in strategies for reducing adverse impact. For example, a recent search on *adverse impact* and *selection* in the PsycINFO database returned 127 peer-reviewed articles. Much of the academic literature has focused on improvements to components of the selection system. In one innovative study, Chan and Schmitt (1997) found that video-based situational judgment tests resulted in smaller subgroup differences than paper-and-pencil versions of the situational judgment tests. Additionally, numerous simulation studies have been conducted to examine various features of the selection system. Schmitt, Rogers, Chan, Sheppard, and Jennings (1997) investigated the addition of alternative predictors and found that to

decrease adverse impact, additional predictors should have high validity, should be highly intercorrelated with each other, and should have close to zero subgroup differences. Sackett and Roth (1996) conducted a simulation study that examined the complex interaction between multiple stage selection, subgroup differences, predictor intercorrelations, selection ratios, and predictor validities on minority hiring and predicted performance. Sackett and Ellingson (1997) examined the effects of various predictor composites on adverse impact, and Hattrup et al. (1997) examined the effect of varying the criterion composites. However, most of the benefits of these selection system characteristics are only realized at high selection ratios (e.g., De Corte, 1999). Outtz (1998) has speculated about the impact of testing medium, testing format, and testing context on adverse impact. In all of these cases, the focus was on characteristics of the selection system that could be manipulated rather than on characteristics of the applicant pool.

In the mid-1990s, researchers began to recognize that—compared with selection system characteristics—applicant pool characteristics often have a greater influence on selection outcomes (Murphy, Osten, & Myors, 1995; Ryan et al., 1998). In fact, for most realistic selection ratios, applicant pool characteristics thwarted efforts to reduce adverse impact across a variety of selection system parameters. Logically, applicant pool characteristics are influenced by recruitment (Murphy et al., 1995). To date, consideration of specific recruiting strategies has been an underdeveloped area of adverse impact research. Our research fills this critical gap by looking at the effects of several realistic, targeted recruiting strategies on minority hiring and job performance.

Recruiting-based adverse impact interventions that consider race may be legally defensible under most realistic scenarios. The *Uniform Guidelines* suggest that adverse impact claims cannot originate from differences in recruiting (Gutman, 2004; *Uniform Guidelines*, 1978):

These guidelines apply only to *selection procedures* [italics added] which are used as a basis for making employment decisions. For example, the use of recruiting procedures designed to attract members of a particular race, sex, or ethnic group, which were previously denied employment opportunities or which are currently underutilized, may be necessary to bring an employer into compliance with Federal law, and is frequently an essential element of any effective affirmative action program; but recruitment practices are not considered by these guidelines to be selection procedures. (*Uniform Guidelines*, 1978, § 1607C).

The courts may occasionally consider recruiting practices relevant (in cases in which chilling effects have occurred, such as when a company in a metropolitan statistical area with a large minority population gets no minority applicants or when recruiting is word-of-mouth only). However, these considerations are only likely to enter the picture after other evidence of adverse impact against the untargeted group has been presented. The sort of job advertisement-based recruiting advocated in this study is likely to be defensible (especially when there is already adverse impact potential in the opposite direction because of the selection system, such as when cognitive tests are used for screening).

Furthermore, having a quality applicant pool can allow well-designed selection systems to function properly (Murphy et al., 1995; Ryan et al., 1998) by increasing the number of high-potential applicants whom the system can identify. We have

argued that recruitment is a logical approach to decreasing adverse impact. In the next section, we review the recruitment literature, with a specific focus on recruiting for diversity versus performance objectives.

The Diversity Objective: Recruiting for Diversity

One way to increase the diversity of organizations is to recruit diverse candidates. In studying employee recruitment, human resources researchers have struggled to quantify the effects of recruitment efforts (Breaugh & Starke, 2000; Robertson & Smith, 2001). Recruiting sources have received a great deal of attention (Kirnan, Farley, & Geisinger, 1989; Rynes, 1991). Although results show that informal recruiting methods—such as employee referrals—may be the most effective for attracting high-performing applicants, women and minorities may be more likely to respond to formal recruiting methods (e.g., career fairs, employment agencies, and newspaper advertisements; Kirnan et al., 1989). From an attraction perspective, diverse candidates respond positively to images of diverse employees in recruitment advertisements or brochures (Avery, 2003; Kim & Gelfand, 2003; Perkins, Thomas, & Taylor, 2000). The practitioner literature has suggested using minority recruiters and recruiting at historically Black colleges and universities (Fortune, 2004; Gunn, 2003). Unfortunately, empirically supported suggestions on how to effectively recruit diverse candidates are sparse (Hall & Parker, 2001; Powell, 1998).

With the mandate to increase diversity in organizations (for practical, legal, and ethical reasons), many recruitment efforts are focused on getting a large number of minorities to apply for positions. Although this strategy increases the number of minorities in the applicant pool, it often generates applications from candidates who are unqualified for or disinterested in the available positions. In a study of police candidates, more than 40% of Black candidates withdrew from the selection process after the first hurdle (Ryan, Sacco, McFarland, & Kriska, 2000). A similar study found Blacks more likely than Whites to withdraw from a multistage selection process (Schmit & Ryan, 1997). Thus, recruiting for demographics may not always be an effective strategy. Moreover, recruiting on demographics alone might potentially worsen a company's adverse impact ratio if the recruits are disproportionately unqualified for the available positions.

Understanding the origins of job pursuit intentions might help to explain which recruiting strategies are the most effective. Expectancy theory suggests that applicants actively seek cues about the expectancy of receiving a job offer, which influences job pursuit (Schwab, Rynes, & Aldag, 1987; Wanous, 1977). Yet recruiter behaviors do not have a large impact on job pursuit intentions (Rynes, 1991). In Rynes's (1991) review, vacancy characteristics had not been carefully studied because of the perception that they were unchangeable. However, framing a job in a particular way might be one viable strategy for targeting recruitment (Avery & McKay, 2006). In particular, describing an organization as innovative or describing a job as needing someone conscientious or smart could be one way to attract applicants with particular attributes.

The Performance Objective: Recruiting for Cognitive Ability and Conscientiousness

Companies ostensibly seek to maximize predicted job performance among new hires, which has led industrial/organizational psychologists to recommend hiring applicants on the basis of cognitive ability (Hunter & Hunter, 1984; Schmidt & Hunter, 2004). In fact, cognitive ability may be an explicitly sought attribute when recruiting job applicants. Certainly, recruiting candidates with high cognitive ability should result in higher performance across a wide range of jobs (see Schmidt & Hunter, 1998). However, recruiting on cognitive ability may also affect the racial composition of the applicant pool because of the large subgroup difference between Whites and Blacks (Roth, Bevier, Bobko, Switzer, & Tyler, 2001). Beyond this assertion, past research has offered little guidance to help in gauging the extent of adverse impact (and concomitant performance improvement) likely to be obtained under such attributes-based recruiting. Optimal recruiting strategies for maximizing both performance and demographic representativeness of the applicant pool are poorly understood.

Building on research that has recommended using personality tests to diversify the workforce (e.g., Avis, Kudisch, & Fortunato, 2002; S. E. Maxwell & Arvey, 1993)—but still noting that supplementing cognitive tests with personality inventories will not completely remove adverse impact (Ryan et al., 1998; Sackett & Ellingson, 1997)—we propose that companies should likewise diversify their recruiting efforts to target specified personality characteristics (e.g., conscientiousness). Conscientiousness is a personality trait that includes being responsible, prudent, persistent, planful, and achievement oriented, and it is associated with higher task performance, contextual performance, and motivation (Barrick & Mount, 1991; Hurtz & Donovan, 2000; Judge & Ilies, 2002). However, we know of no studies that have examined the effectiveness of personality-based recruitment strategies, such as targeting the most conscientious potential applicants.

We do not deny that these types of targeted recruiting have been implicitly practiced for decades. With regard to recruiting for cognitive ability and recruiting for conscientiousness, both common practice and common sense suggest the benefits of recruiting at trade schools, colleges, and universities, as these institutions serve to screen the general population. In particular, attraction, selection, and attrition processes can make universities repositories of human capital, homogenized on both cognitive and personality attributes (see Schneider, 1987).

Targeted Recruiting

Targeted recruiting may potentially increase the diversity of organizations (Segal, 2002; Thaler-Carter, 2001) and also the performance levels of those selected. We focus in particular on targeted recruiting for cognitive ability or conscientiousness. This is in contrast to generalized recruiting, which involves advertising the available position without targeting specific traits. Many current recruiting strategies seem to be "one size fits all" in that they are general and apply to all potential candidates. General recruiting strategies might result in more minority and majority candidates applying for positions, producing a negligible (or perhaps deleterious) effect on adverse impact. In contrast, minority-focused recruiting, or using aptitude- and trait-based recruiting while tar-

getting only members of the underrepresented group, has the potential to increase proportionally the qualifications of minority applicants. We seek to understand how targeted recruiting strategies can influence the percentage of minority hires and predicted performance across a range of selection ratios common in staffing practice. Specifically, we examine targeted strategies based on (a) recruiting for demographics alone, (b) recruiting for cognitive ability alone, (c) recruiting for conscientiousness alone, and (d) recruiting for combinations of these characteristics. Additionally, we estimate the effectiveness for diversity and performance goals of implementing strategies to recruit for cognitive ability, conscientiousness, or both within the minority group only. Furthermore, we show how various recruitment strategies might interfere with each other in the effort to increase diversity within organizations while maintaining high performance levels. To summarize, in this article we seek to answer the following research questions:

Research Question 1: How does targeted recruiting for demographic characteristics alone influence adverse impact ratios and average performance of new hires?

Research Question 2: How does targeted recruiting for job-related attributes (cognitive ability and conscientiousness) influence adverse impact ratios and average performance of new hires?

Research Question 3: How does targeted recruiting for job-related attributes (cognitive ability and conscientiousness), within underrepresented populations only, influence adverse impact ratios and average performance of new hires?

Research Question 4: How do combinations of these targeted recruiting strategies influence adverse impact ratios and average performance of new hires?

Research Question 5: What aspects of recruiting messages (descriptions of the ideal applicant and the organizational image) result in heightened probability of applying among (a) members of demographic minority groups, (b) individuals with high cognitive ability, and (c) individuals with high conscientiousness?

Study 1

Algebraic Model of Targeted Recruiting

Simulations are a useful way to gauge the impact of various selection or recruiting strategies and identify the biggest payoffs (De Corte, 1999; Murphy et al., 1995). Simulation designs are, however, limited in particular ways. Perhaps foremost among their limitations is the fact that conclusions based on Monte Carlo designs are often effectively limited to the narrow range of population parameters that were simulated. Conclusions involving conditions that were not included in the simulation may be difficult to extrapolate. An alternative approach that can sometimes offer the same advantages as simulation (without the above-described limitation) is to derive closed-form equations that apply continuously across a wide range of possible selection and recruiting conditions. In the section that follows, we describe a set of algebraic equations that show how a variety of targeted recruiting

strategies operate in reducing adverse impact and increasing the performance of new hires.

Adverse Impact

The basic formula representing adverse impact under various selection and recruiting conditions is²

$$AI \text{ ratio} = \frac{SR_B}{SR_W} = \frac{\left(\sqrt{e^{z_W^2}}\right)\left(1.64z_W + \sqrt{.76z_W^2 + 4}\right)}{\left(\sqrt{e^{z_B^2}}\right)\left(1.64z_B + \sqrt{.76z_B^2 + 4}\right)}, \quad (1)$$

where the *B* and *W* subscripts refer to underrepresented (e.g., Black) and overrepresented (e.g., White) demographic subgroups, respectively; *SR_B* and *SR_W* refer to the within-subgroup selection ratios; and *z_B* and *z_W* are the selection cutoff scores on the predictor (standardized within each demographic group), above which an individual is referred for hire (see Kingsbury, 2005). The within-group standardized cut scores (*z_B* and *z_W*) are given in the equations

$$z_B = \frac{x_{cut} - \bar{X}_B}{s_B} \quad (2a)$$

and

$$z_W = \frac{x_{cut} - \bar{X}_W}{s_W}, \quad (2b)$$

where

$$x_{cut} = -\text{NORMSINV}\left(\frac{N_{Hire}}{N_{NoRec}} \frac{p_B}{[\pi_B(1 + q_B)]}\right) \sqrt{s_B^2 p_B + s_W^2(1 - p_B) + (\bar{X}_B - \bar{X}_W)^2 [p_B(1 - p_B)]} + \bar{X}_B p_B + \bar{X}_W(1 - p_B). \quad (3)$$

In the above equation, NORMSINV is the inverse function of the standard normal cumulative distribution, as calculated in Microsoft Excel (NORMSINV solves iteratively, and cannot be expressed in closed form); *N_{Hire}* is the number of job openings to be filled; *N_{NoRec}* is the number of individuals who would have applied anyway, had there been no recruiting intervention; *π_B* is the proportion of Blacks among potential applicants in the relevant working population; *q_B* and *q_W* are the proportional increases in numbers of Black and White applicants, respectively, resulting from the recruitment intervention; and *p_B* is the proportion of Black applicants in the final, postrecruitment applicant pool:

$$p_B = \frac{\pi_B(1 + q_B)}{\pi_B(1 + q_B) + (1 - \pi_B)(1 + q_W)}. \quad (4)$$

\bar{X}_B and \bar{X}_W are the mean scores on the predictor in the Black and White demographic groups and can be solved using

$$\bar{X}_B = \mu_B + \left(\frac{r_{B_Rec} \sqrt{q_B}}{\sqrt{(1 - r_{B_Rec}^2)}}\right) \quad (5a)$$

² Derivations for all formulas are available from Daniel A. Newman.

and

$$\bar{X}_W = \mu_W + \left(\frac{r_{W_Rec} \sqrt{q_W}}{\sqrt{1 - r_{W_Rec}^2}} \right); \tag{5b}$$

s_B and s_W are the applicant within-demographic-group standard deviations on the predictor³

$$s_B = \sqrt{1 + \frac{r_{B_Rec}^2}{1 - r_{B_Rec}^2}} \tag{6a}$$

and

$$s_W = \sqrt{1 + \frac{r_{W_Rec}^2}{1 - r_{W_Rec}^2}}. \tag{6b}$$

μ_B and μ_W in Equation 5 approximate the Black and White group means on the predictor under no-recruiting conditions, and—if the predictor is arbitrarily centered at $\mu_W = 0.0$ — μ_B can be set equal to subgroup d , the Black–White standardized mean difference in predictor scores, with no loss of generality. For population estimates of Black–White d among potential job applicants, we refer to Roth et al.’s (2001) uncorrected d of -1.00 (for cognitive ability in industrial samples of job applicants, p. 315), and Foldes, Duehr, and Ones’s (in press) recent estimate of $d = .07$ (for conscientious personality; $k = 67$; $N = 180,478$).

Both Equations 5 and 6 rely heavily on the recruiting parameters r_{B_Rec} and r_{W_Rec} . These recruiting parameters are a central focus of this study and represent the correlation between an individual’s level on a given attribute (e.g., conscientiousness or cognitive ability) and the probability of applying for a particular job opening. For example, when r_{W_Rec} is large and positive, it means that White potential applicants are more likely to apply to the extent that they have higher conscientiousness.

In our algebraic recruiting model, there are two parameters that we assert to be manipulable by way of targeted recruiting interventions: (a) increased number of applicants from each demographic group (q_B and q_W) and (b) the correlation between a desired attribute and probability of applying within each demographic group (r_{B_Rec} and r_{W_Rec}). Much of the literature on targeted recruiting has tended to focus on the former parameter, often ignoring (or keeping implicit) the latter parameter. The algebraic recruiting model presented above formally specifies r_{B_Rec} and r_{W_Rec} recruiting parameters and expresses their functional relationships with diversity outcomes. Below, we derive equations for the job performance implications of targeted recruiting.

Performance Level of New Hires

Aside from adverse impact and diversity, another critical outcome of selection and recruiting systems is the job performance level of new hires. The expected average performance level of new hires is

$$Perf_{Hire} = r_{x,perf}(\bar{X}_{Hire}), \tag{7a}$$

where

$$\bar{X}_{Hire} = \frac{(1.64z_{cut} + \sqrt{.76z_{cut}^2 + 4})}{\sqrt{2\pi}} + \bar{X}; \tag{7b}$$

$r_{x,perf}$ is the correlation between scores on the predictor (x) and job performance; $z_{cut} = (x_{cut} - \bar{X})/s_x$; and x_{cut} , s_x , and \bar{X} are given in Equations 3, 10, and 11.

Multiple-Predictor Scenario

Moving beyond the single-predictor scenario described above, it will be useful to derive expressions for how selection and recruiting parameters combine to influence diversity and performance outcomes, when multiple predictors are used together (e.g., a conscientiousness inventory combined with a cognitive test). For the current treatment, we address unit-weighted composites of predictors (Ree, Carretta, & Earles, 1998; Wainer, 1976).

To approximate the adverse impact ratio under various recruiting conditions in a multiple-predictor scenario, simply take the following equations for a multipredictor composite ($comp$) of conscientiousness (c) and general mental ability (g),

$$r_{B_Rec(comp)} = \frac{(r_{B_Rec(c)} + r_{B_Rec(g)})}{\sqrt{2(1 + r_{c,g})}}, \tag{8a}$$

$$r_{W_Rec(comp)} = \frac{(r_{W_Rec(c)} + r_{W_Rec(g)})}{\sqrt{2(1 + r_{c,g})}}, \tag{8b}$$

$$\mu_{W(comp)} = 0, \tag{9a}$$

and

$$\mu_{B(comp)} = (d_{g_NoRec} + d_{c_NoRec}), \tag{9b}$$

and plug the results into Equations 5 and 6. With composite-based expressions for Equations 5 and 6 in hand, all of the other steps in using Equations 1 through 4 to derive the adverse impact ratio will then be the same as for the single-predictor scenario.

To get the performance level of new hires for a multipredictor scenario, calculate composite $x_{cut(comp)}$ from Equation 3 and also calculate predictorwise estimates of (a) $s_{W(g)}$, $s_{W(c)}$, $s_{B(g)}$, and $s_{B(c)}$ from Equation 6; (b) \bar{g}_W , \bar{c}_W , \bar{g}_B and \bar{c}_B from Equation 5; (c) overall standard deviation across groups (s_g and s_c) from Equation 10 (see Newman & Sin, 2007),

$$s_x = \sqrt{s_B^2 p_B + s_W^2 (1 - p_B) + (\bar{X}_B - \bar{X}_W)^2 [p_B (1 - p_B)]}, \tag{10}$$

and (d) overall mean across groups (\bar{g} and \bar{c}) from Equation 11:

$$\bar{X} = \bar{X}_B p_B + \bar{X}_W (1 - p_B). \tag{11}$$

³ Our formulas for applicant standard deviations (Equation 6) do not depend on the applicant means, as would be expected under ceiling effect conditions (i.e., when group means near the maximum point of a scale, it becomes less possible to have large dispersion above the mean, resulting in a smaller overall standard deviation). Such artifacts can be redressed by using predictors that are psychometrically calibrated to discriminate across an appropriately wide range of trait levels. When the predictor measure fails to capture interindividual distinctions at the high end, the selection decisions between high-ability applicants will become more arbitrary, regardless of how (or how many) high-ability applicants were recruited. In short, such ceiling effects represent a problem of limited-range predictors, not a problem of recruiting high-ability applicants.

These estimates can then be plugged into the formulas

$$g_{cut(z_{W(c')}=z_{W(g)})} = \frac{\left\{ x_{cut(comp)} + \left[\left(\frac{s_{W(c)}}{s_{W(g)}} \bar{g}_W - \bar{c}_W \right) + \bar{c} \right] / s_c \right\} s_g + \bar{g}}{\left(1 + \frac{s_{W(c)} s_g}{s_{W(g)} s_c} \right)} \quad (12a)$$

and

$$g_{cut(z_{B(c')}=z_{B(g)})} = \frac{\left\{ x_{cut(comp)} + \left[\left(\frac{s_{B(c)}}{s_{B(g)}} \bar{g}_B - \bar{c}_B \right) + \bar{c} \right] / s_c \right\} s_g + \bar{g}}{\left(1 + \frac{s_{B(c)} s_g}{s_{B(g)} s_c} \right)}. \quad (12b)$$

At this point, we note that we can use our information about the adverse impact ratio to solve for the proportion of hires from the underrepresented group:

$$P_{B|hire} = \frac{1}{1 + \frac{N_W}{(AI_ratio)N_B}}, \quad (13)$$

where $N_W = N_{NoRec} [(1 - \pi_B)(1 + q_W)]$ and $N_B = N_{NoRec} [\pi_B(1 + q_B)]$ and are the numbers of applicants from each group. Equation 13 can then be combined with the previous equations to yield an approximate cut score for one of the predictors,

$$\hat{g}_{cut} = P_{B|hire} g_{cut(z_{B(c')}=z_{B(g)})} + (1 - P_{B|hire}) g_{cut(z_{W(c')}=z_{W(g)}), \quad (14)$$

and the cut score for the second predictor is

$$\hat{c}_{cut} = [x_{cut(comp)} - (\hat{g}_{cut} - \bar{g})/s_g] s_c + \bar{c}. \quad (15)$$

Given the cut scores on the two predictors (Equations 14 and 15), we can now express the predicted job performance level at the cutoff score for new hires, using meta-analytically derived regression weights. On the basis of meta-analytic correlations among cognitive ability (g), conscientiousness (c), and job performance (*perf*; i.e., $r_{g,perf} = .53$ [Hunter & Hunter, 1984]; $r_{c,perf} = .22$ [Hurtz & Donovan, 2000]; and $r_{g,c} = .03$ [Potosky, Bobko, & Roth, 2005]), the regression equation for predicted job performance is (see Equation 7b for \bar{g}_{Hire} and \bar{c}_{Hire})

$$Perf_{Hire} = \frac{r_{g,perf} - r_{g,c} r_{c,perf}}{(1 - r_{g,c}^2)} (\bar{g}_{Hire}) + \frac{r_{c,perf} - r_{g,c} r_{g,perf}}{(1 - r_{g,c}^2)} (\bar{c}_{Hire}) \approx .524(\bar{g}_{Hire}) + .204(\bar{c}_{Hire}). \quad (16)$$

Equations 1 through 16 represent the algebraic recruiting model for adverse impact and job performance outcomes. As mentioned above, the two types of recruiting parameters that represent the effects of targeted recruiting interventions are (a) increased number of applicants from each demographic group (q_B and q_W) and (b) the correlation between a desired attribute and probability of applying within each demographic group (r_{B_Rec} and r_{W_Rec}). Past studies of minority recruiting have focused on q_B and q_W parameters to the exclusion of r_{B_Rec} and r_{W_Rec} .

Results and Discussion

To illustrate the results of the algebraic recruiting model (Study 1), we present Figures 1 and 2. Before discussing these figures, however, we should point out that Figures 1 and 2 are merely examples of how the model operates under a limited set of input conditions (similar to the results of a simulation-based study). Unlike a simulation-based study, though, the algebraic recruiting model can apply across a wide range of potential input conditions and is not limited to merely those conditions shown in Figure 1 and Figure 2. In Figures 1 and 2, 10 different recruiting conditions are displayed, corresponding to various levels of the input parameters q_B , q_W , $r_{B_Rec(g)}$, $r_{W_Rec(g)}$, $r_{B_Rec(c)}$, and $r_{W_Rec(c)}$ (see Table 1).

As Table 1 explains, it is theoretically possible to recruit on demographics alone (condition D), to recruit on general mental ability (G) or conscientious personality (C) alone, to conduct targeted recruiting on cognitive ability and conscientiousness traits within the minority group only (conditions G[D] and C[D], which can be read “G within D” and “C within D”), or to recruit on a combination of factors (G&C[D], C&G[D], G&C, and G[D]&C[D]), which can reflect combinations of general recruiting for one trait (G) simultaneously with minority-focused recruiting for another trait (C[D]). The recruiting conditions shown in Figures 1 and 2 do not reflect natural categories of recruiting but rather are convenient examples that enable one to see how the various levels of the recruiting parameters can combine to produce adverse impact and job performance outcomes.

In Figure 1, we see the general trend that as number of hires (and selection ratio) decreases, the adverse impact ratio also decreases (i.e., worse adverse impact). However, the various recruiting strategies produce markedly different outcomes. Of particular note is

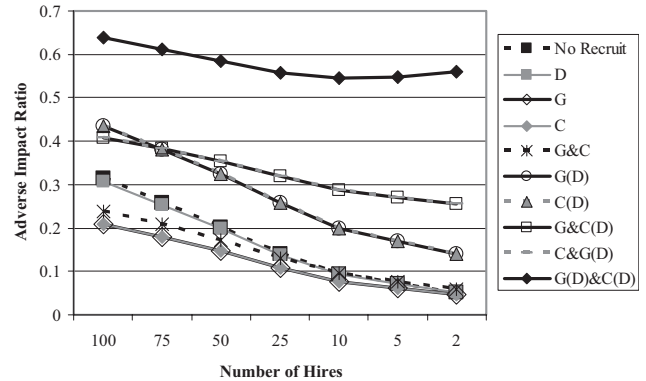


Figure 1. Effect of recruitment strategy on adverse impact ratio. Recruitment strategies: D = recruiting on demographics alone; G = recruiting on general mental ability alone; C = recruiting on conscientiousness alone; G&C = recruiting on both cognitive ability and conscientiousness; G(D) = recruiting on cognitive ability within the minority group only; C(D) = recruiting on conscientiousness within the minority group only; G&C(D) = general recruiting on cognitive ability while recruiting on conscientiousness within the minority group only; C&G(D) = general recruiting on conscientiousness while recruiting on cognitive ability within the minority group only; G(D)&C(D) = recruiting on cognitive ability and conscientiousness within the minority group only. Evaluated at $N_{NoRec} = 250$ applicants; $\pi_B = 10\%$ Black in the relevant working population; $d_{NoRec} = -1.0$ for cognitive ability; and $d_{NoRec} = .07$ for conscientiousness.

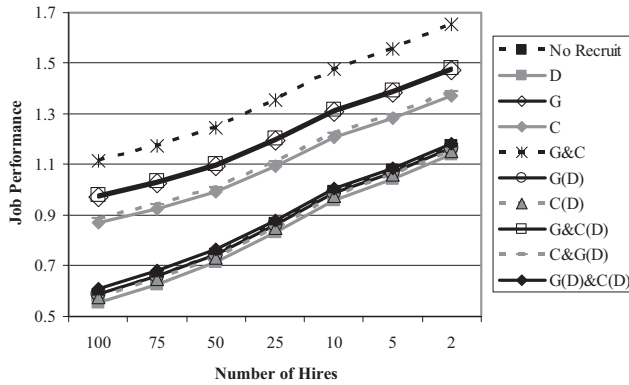


Figure 2. Effect of recruitment strategy on average job performance of new hires. Recruitment strategies: D = recruiting on demographics alone; G = recruiting on general mental ability alone; C = recruiting on conscientiousness alone; G&C = recruiting on both cognitive ability and conscientiousness; G(D) = recruiting on cognitive ability within the minority group only; C(D) = recruiting on conscientiousness within the minority group only; G&C(D) = general recruiting on cognitive ability while recruiting on conscientiousness within the minority group only; C&G(D) = general recruiting on conscientiousness while recruiting on cognitive ability within the minority group only; G(D)&C(D) = recruiting on cognitive ability and conscientiousness within the minority group only. Evaluated at $N_{NoRec} = 250$ applicants; $\pi_B = 10\%$ Black in the relevant working population; $d_{NoRec} = -1.0$ for cognitive ability; and $d_{NoRec} = .07$ for conscientiousness. Performance metric is standardized to a mean of zero and standard deviation of 1.0 in the majority population (under “no recruiting” conditions).

the fact that recruiting on demographics alone does little to reduce adverse impact (see condition D in Figure 1), particularly at higher selection ratios. In contrast, minority-targeted attribute-focused strategies (i.e., in which recruiting for an attribute like conscientiousness is conducted within the minority group only; C[D]) result in higher (better) adverse impact ratios. Although this result is intuitive, the magnitudes of the effects and combinations of recruiting parameters are not obvious without the algebraic recruiting model.

Figure 2 shows the effects of various recruiting strategies on the outcome of job performance (specifically, the average predicted performance of new hires above the selection cut score). The first general trend in Figure 2 is that job performance increases as selection ratio decreases (a simple selectivity effect). One point of interest here is that using minority-targeted, attribute-focused recruiting strategies (i.e., G[D]&C[D]) does not reduce expected job performance, compared with no recruiting (Figure 2), even though it leads to major reductions in adverse impact (Figure 1).

Another interesting result illustrated in Figures 1 and 2 is that minority-targeted, attribute-based recruiting strategies (like recruiting for conscientiousness within the underrepresented group; C[D]) are especially effective at improving both performance and diversity criteria when there is simultaneous, global recruiting on another trait (across all demographic groups). An excellent example of this is the recruiting strategy labeled G&C(D), or global recruiting for general mental ability in all groups, combined with targeted recruiting for conscientiousness within the minority group only. That is, the hybrid attributes-focused recruiting strategy (that

combines strategy G with strategy C[D]) is particularly effective at achieving selection goals of diversity and productivity, in comparison with other recruiting strategies.

To summarize Study 1, we note that six distinct recruiting parameters were identified (i.e., q_B , q_W , $r_{B_Rec(g)}$, $r_{W_Rec(g)}$, $r_{B_Rec(c)}$, and $r_{W_Rec(c)}$), and a model of their interrelationships and effects on both performance and adverse impact was derived. Results revealed the extent to which targeted recruiting within demographic groups—and attribute-focused recruiting both within and across demographic groups—can combine to yield the desired selection outcomes. In Study 2, we provide some empirical estimates of the various recruiting parameters.

Study 2

Using Job Postings for Attributes-Focused and Demographic Recruiting

Study 1 offered guidance to recruiters on how to best design recruiting efforts and suggested (among other things) that higher payoffs for both productivity and diversity come from targeting minorities with high levels of the low-impact predictor (e.g., targeting recruitment efforts toward conscientious African Americans). The question remains, “How would such recruiting be accomplished?” In Study 2, we examine the effects of cognitive ability-based and conscientiousness-based recruitment messages on the attractiveness of job postings across racial groups. The purpose of the study is twofold. First, we hope to show that using targeted recruitment strategies designed to attract individuals high on cognitive ability or conscientiousness can actually result in higher ability and more conscientious applicants. Second, we hope to document whether trait- and ability-focused recruiting messages can have a chilling effect on Black candidates (as casually suggested by a reviewer) or whether they attract candidates equally across racial groups. This study is an important follow-up to previous research because it provides evidence for the feasibility of targeted recruiting.

Attracting Conscientious and High-Ability Applicants

Targeted recruitment for cognitive ability or conscientiousness can be tricky, as these characteristics are not made more evident by simply looking at a potential applicant. Also, testing for these characteristics in an actual selection scenario would constitute a selection—rather than a recruiting—practice, and thereby invoke prohibitions against explicit considerations of race (i.e., the Civil Rights Act of 1991). A promising way to assess whether recruiting messages attract applicants who are higher in conscientiousness or cognitive ability is to conduct a laboratory study measuring these individual differences and then assess potential applicants’ attraction to various position descriptions, similar to how Lievens, Decaestecker, Coetsier, and Geirnaert (2001) measured individual differences and determined the probability that potential applicants will apply on the basis of descriptions of the organizations’ features. They showed that conscientious applicants were likely to prefer larger organizations. In our study, we constructed position descriptions designed to attract conscientious or high-ability applicants. We followed our intuition that if jobs are described as needing conscientious or smart applicants, individuals who possess

Table 1
Recruiting Conditions

Recruiting condition	Recruiting parameters (example estimates)					
	q_B	q_W	$r_{B_Rec(g)}$	$r_{W_Rec(g)}$	$r_{B_Rec(c)}$	$r_{W_Rec(c)}$
Demographics (D): Recruiting on demographics alone	1.00	0.00	0.00	0.00	0.00	0.00
Cognitive (G): Recruiting on general mental ability alone	1.00	1.00	0.30	0.30	0.00	0.00
Conscientiousness (C): Recruiting on conscientiousness alone	1.00	1.00	0.00	0.00	0.30	0.30
Cognitive + Conscientiousness (G&C): Recruiting on both cognitive ability and conscientiousness	1.00	1.00	0.30	0.30	0.30	0.30
Minority-cognitive (G[D]): Recruiting on cognitive ability within the minority group only	1.00	0.00	0.30	0.00	0.00	0.00
Minority-conscientiousness (C[D]): Recruiting on conscientiousness within the minority group only	1.00	0.00	0.00	0.00	0.30	0.00
Cognitive + Minority-conscientiousness (G&[D]): General recruiting on cognitive ability, while recruiting on conscientiousness within the minority group only	1.00	1.00	0.30	0.30	0.30	0.00
Conscientiousness + Minority-cognitive (C&G[D]): General recruiting on conscientiousness, while recruiting on cognitive ability within the minority group only	1.00	1.00	0.30	0.00	0.30	0.30
Minority-cognitive + Minority-conscientiousness (G[D]&C[D]): Recruiting on cognitive ability and conscientiousness within the minority group only	1.00	0.00	0.30	0.00	0.30	0.00
No targeted recruiting (no recruit): No special recruiting intervention is applied	0.00	0.00	0.00	0.00	0.00	0.00

Note. q_B = proportional increase in Black applicants resulting from recruitment intervention; q_W = proportional increase in White applicants resulting from recruitment intervention; $r_{B_Rec(g)}$ = correlation between scores on cognitive predictor and probability of applying for Black applicants; $r_{W_Rec(g)}$ = correlation between scores on cognitive predictor and probability of applying for White applicants.

those qualities will be more likely to apply for the position (assuming some level of self-awareness among potential applicants; cf. Paulhus, 1984). That is, responding to a job ad that seeks “conscientious applicants” is a behavior that should tend to manifest among more conscientious individuals.

Hypothesis 1: There will be a positive relationship between conscientiousness and the probability of applying to a job posting seeking conscientious applicants.

Hypothesis 2: There will be a positive relationship between cognitive ability and the probability of applying to a job posting seeking smart applicants.

Another way of attracting high-ability and conscientious applicants is to describe the organization in a way that attracts applicants with those characteristics. Turban and Keon (1993), for instance, found that personality characteristics were related to features of hypothetical organizations. They showed that applicants with higher needs for achievement were interested in companies that had incentive pay. Judge and Cable (1997) found that applicants with certain personality characteristics were attracted to particular organizational cultures. With particular relevance to our study, they found that conscientious individuals were more attracted to results-oriented organizations. We sought to replicate this finding and also to show that certain company descriptors would be more attractive to applicants with high cognitive ability. We believed that potential applicants with this trait would possess higher creativity (Kuncel, Hezlett, & Ones, 2004) and higher openness to experience (Ackerman & Heggestad, 1997) and thus be more attracted to an innovative company. Therefore, we hypothesized the following:

Hypothesis 3: There will be a positive relationship between conscientiousness and the probability of applying to a job posting describing the company as results oriented.

Hypothesis 4: There will be a positive relationship between cognitive ability and the probability of applying to a job posting describing the company as innovative.

Differential Attraction by Race

Is there a chilling effect (as a reviewer suggested) such that targeting for cognitive ability would decrease the likelihood that Black candidates would enter the applicant pool? Although this idea sounds odd to us, we lack both theory and evidence about such effects. The null hypothesis is that the correlation between individual traits and organizational attraction does not differ between Black and White applicants. We collected data to ascertain the verity of possible race-based differences in recruiting attraction parameters. Given the lack of theory and evidence to support a claim in either direction, we approach this question in an exploratory fashion:

Research Question 6: Does the relationship between applicant traits and probability of applying for a job differ between Black and White potential applicants?

Method

Participants and Procedure

We adopted a policy-capturing approach to study race-related organizational attraction, using a large sample of Black and White

students at a selective university in the northeastern United States. Six hundred ninety-two students were given a 40-item policy capture instrument (response rate = 86%). Race was self-reported using seven categories: Black, Asian, White, Hispanic, Arab, Native American, or other. Of the 594 respondents, 85 self-identified as Black and 375 self-identified as White. This proportion of Black respondents (85 Black/[85 Black + 375 White] = 18%) is similar to the proportion in the college-bound population, as suggested by the percentage of Blacks who take the SAT (159,849 Black/[159,849 Black + 828,038 White] = 16%; College Board, 2007). For parsimony, we excluded Asian American and Latin American respondents from these analyses. Our research on adverse impact is largely driven by Black–White subgroup differences on cognitive tests, which have plagued selection practitioners (Roth et al., 2001) and members of the lower scoring group (Newman, Hanges, & Outtz, 2007).

Measures

Conscientiousness. Conscientiousness was measured using the 10-item Conscientiousness subscale of the Goldberg five-factor personality instrument (Goldberg, 1999). Participants rated each statement on a scale ranging from 1 (*very inaccurate*) to 5 (*5 = very accurate*; $\alpha = .80$).

Cognitive ability. We measured cognitive ability by asking participants to report their SAT scores. Although using the SAT as an index of cognitive ability is not ideal, Frey and Detterman (2004) reported a large-sample correlation estimate of .82 (uncorrected) between the SAT and general mental ability scores (from the Armed Services Vocational Aptitude Battery), attesting to the construct validity of this measure.

Policy capture instrument. To study organizational attraction (i.e., probability of applying for a job), we recorded self-reports of the likelihood of applying to each of 40 hypothetical job postings. An individual's likelihood of applying for each position was rated on a scale ranging from 0 (*0% chance you would apply for the job*) to 10 (*91%–100% chance you would apply for the job*).

These job postings involved a 4×10 fully crossed factorial design in which we manipulated the description of both (a) the type of company (demanding, results-oriented, detail-oriented, and innovative) and (b) the type of applicant sought (self-disciplined, conscientious, reliable, well-organized, hard-working, sharp, intelligent, brilliant, logical, and smart). In selecting these levels of applicant type and company type, our intention was to tap into four underlying constructs. For applicant type, we chose five personal adjectives to be reflective of the underlying construct “seeking a smart applicant” and five personal adjectives to represent the construct “seeking a conscientious applicant.” In describing company type, we chose one adjective to reflect a self-described “innovative company” and three adjectives to reflect a self-described “results-oriented company.” These three results-oriented adjectives were *results oriented*, *detail oriented*, and *outcome oriented*.

To determine whether the manipulated job descriptors captured the underlying constructs we intended—enabling the variance among rated probabilities of applying for the jobs to be meaningfully explained by a parsimonious set of job-descriptive concepts—we conducted a confirmatory factor analysis in LISREL 8.5 (Jöreskog & Sörbom, 2003). In this factor analysis, each

hypothetical job posting (consisting of both an applicant-type descriptor and a company-type descriptor) was allowed to double load, once on the applicant-type factor and once on the company-type factor (all other loadings were constrained to zero a priori). For example, the item “The job requires someone who is intelligent. Should desire working for a detail-oriented company” was allowed to double load on the Seeking Intelligent Applicant factor and the Detail-Oriented Company factor. Aside from these lower order factors (i.e., 4 company-type factors and 10 applicant-type factors), we specified a set of higher order factors, including a second-order Seeking Smart Applicant construct, a Seeking Conscientious Applicant construct, an Innovative Company construct, and a Results-Oriented Company construct. Factor loadings for both first-order and second-order factors appear in the Appendix, along with overall fit indices. For this confirmatory model to be identified, the loading of the first-order Innovative Company factor on the second-order Innovative Company factor was fixed at $\gamma = 1.00$.

As seen in the Appendix, the overall fit of the confirmatory model was generally acceptable, as judged by the practical indices of fit (root-mean-square error of approximation = .08, comparative fit index = .98, Tucker-Lewis index (non-normed fit index) = .98, standardized root-mean-square residual = .09). As such, we conclude there is adequate fit between the data at hand and our theorized four-factor structure of applicant and company characteristics. Following the confirmatory factor analysis, we constructed summative scale scores to reflect each of the applicant-type and company-type factors.

Results and Discussion

We tested our Study 2 hypotheses via two analytic strategies. First, we used the policy capture response data to estimate a multilevel model, which enabled us to control for nonindependence of responses nested within individuals (Raudenbush, 1993) and also permitted control of lower order interaction and main effects when testing higher order interactions. Second, we calculated Pearson correlations between individual characteristics and the probability of applying to each type of job. These correlations support effect size comparisons in a way that is interpretable by a wider audience of selection researchers and practitioners. The multilevel model results are presented in Table 2, and the correlational results are presented in Table 3.

For the multilevel model, the Level 1 equation was within persons and the Level 2 equation was between-persons. This model was estimated in SAS PROC MIXED and had the following form:

$$\begin{aligned} \text{Level 1: Probability of Applying} &= \beta_0 + \beta_1(\text{applicant_type}) \\ &+ \beta_2(\text{company_type}) + \beta_3(\text{company_type*applicant_type}) \\ \text{Level 2: } \beta_0 &= \gamma_{00} + \gamma_{01}(\text{consc}) + \gamma_{02}(g) + \gamma_{03}(\text{race}) \\ &+ \gamma_{04}(\text{consc*race}) + \gamma_{05}(g*\text{race}) \\ \beta_1 &= \gamma_{10} + \gamma_{11}(\text{consc}) + \gamma_{12}(g) + \gamma_{13}(\text{race}) \\ &+ \gamma_{14}(\text{consc*race}) + \gamma_{15}(g*\text{race}) \\ \beta_2 &= \gamma_{20} + \gamma_{21}(\text{consc}) + \gamma_{22}(g) + \gamma_{23}(\text{race}) \\ &+ \gamma_{24}(\text{consc*race}) + \gamma_{25}(g*\text{race}) \end{aligned}$$

Table 2
Multilevel Policy Capture Models Predicting Probability of Applying

Variable	Model 1	Model 2	Model 3
Intercept (β_0)	7.14 (104.63)**	4.57 (5.12)**	4.44 (4.95)**
Applicant type (β_1)	0.089 (3.53)**	0.401 (1.36)	0.588 (1.88)
Company type (β_2)	0.042 (3.15)**	0.224 (1.35)	0.299 (1.70)
Applicant Type \times Company Type (β_3)	0.001 (0.23)	0.000 (0.05)	0.000 (0.05)
Conscientiousness (γ_{01})		0.951 (8.42)**	0.974 (8.57)**
Cognitive ability (γ_{02})		-0.001 (-0.95)	-0.001 (-0.89)
Race (γ_{03})		6.18 (3.04)**	6.94 (3.36)**
Conscientiousness \times Race (γ_{04})		-1.23 (-3.86)**	-1.39 (-4.27)**
Cognitive Ability \times Race (γ_{05})		-0.001 (-0.99)	-0.002 (-1.11)
Applicant Type \times Conscientiousness (γ_{11})		0.185 (4.83)**	0.205 (5.11)**
Applicant Type \times Cognitive Ability (γ_{12})		-0.001 (-3.81)**	-0.001 (-4.50)**
Applicant Type \times Race (γ_{13})		-0.149 (-1.95)	-1.107 (-1.31)
Company Type \times Conscientiousness (γ_{21})		-0.085 (-3.94)**	-0.113 (-5.01)**
Company Type \times Cognitive Ability (γ_{22})		0.000 (0.73)	0.000 (0.83)
Company Type \times Race (γ_{23})		0.013 (0.31)	0.946 (1.99)*
Applicant Type \times Conscientiousness \times Race (γ_{14})			-0.154 (-1.23)
Applicant Type \times Cognitive Ability \times Race (γ_{15})			0.001 (2.26)*
Company Type \times Conscientiousness \times Race (γ_{24})			0.258 (3.66)**
Company Type \times Cognitive Ability \times Race (γ_{25})			0.000 (0.29)

Note. $N = 458$. t values appear in parentheses.
* $p < .05$. ** $p < .01$ (two-tailed).

The applicant_type and company_type variables reflect orthogonal contrast-coded variables. There is no control group in this design, because creating a control group would have required having respondents rate their probability of applying to a job for which they were provided no information and/or the assumption that information we provided about the control job was neutral. Therefore, the applicant-type variable in this multilevel analysis reflects a linear contrast between postings seeking conscientious applicants (applicant type = 1) and postings seeking smart applicants (applicant type = -1). Likewise, the company type variable involved a contrast between postings describing the company as innovative (company type = 3) and those describing it as demanding, results oriented, or detail oriented (company type = -1). Race was coded as Black = 1 and White = 0.

In the multilevel model, γ_{11} answers Hypothesis 1, γ_{12} answers Hypothesis 2, γ_{21} answers Hypothesis 3, γ_{22} answers Hypothesis

4, and γ_{04} , γ_{05} , γ_{14} , γ_{15} , γ_{24} , and γ_{25} answer Research Question 6. As seen in Table 3 (Model 2), Hypothesis 1 is supported ($\gamma_{11} = 0.185$, $p < .001$), as is Hypothesis 2 ($\gamma_{12} = -0.001$, $p < .001$). These results demonstrate two intuitive phenomena: (a) When a job posting mentions seeking conscientious applicants, conscientious individuals are more likely to apply, and (b) when a job posting seeks smart applicants, individuals with high cognitive ability are more likely to apply. Hypothesis 3 was also supported (Model II; $\gamma_{21} = -0.085$, $p < .001$), showing that conscientious individuals are more likely to apply to a results-oriented company than to an innovative company. Hypothesis 4 was not supported ($\gamma_{22} = 0.000$, $p > .05$) because individuals with higher cognitive ability appeared indifferent to whether a company was described as innovative versus results oriented.

Finally, several race effects emerged. This was contrary to our own expectation (i.e., of no race-related effects involving

Table 3
Pearson Correlations for Probability of Applying From Policy Capture Data

Job posting factor	N_{Black}	N_{White}	$r_{\text{conscientiousness, } p(\text{applying})_{\text{Black}}}$	$r_{\text{conscientiousness, } p(\text{applying})_{\text{White}}}$	Effect size, $\Delta r_z (p)$
Applicant-type factors					
Seeking smart applicant	83	372	.30*	.18*	.13 (.15)
Seeking conscientious applicant	83	372	.29*	.37*	-.09 (.22)
Company-type factors					
Results-oriented company	83	372	.28*	.32*	-.04 (.37)
Innovative company	83	372	.40*	.14*	.28 (.01)*
			$r_{\text{cognitive ability, } p(\text{applying})_{\text{Black}}}$	$r_{\text{cognitive ability, } p(\text{applying})_{\text{White}}}$	
Applicant-type factors					
Seeking smart applicant	59	332	.14	.04	.10 (.25)
Seeking conscientious applicant	59	332	.19	-.14*	.32 (.01)*
Company-type factors					
Results-oriented company	59	332	.18	-.05	.23 (.05)
Innovative company	59	332	.15	-.01	.16 (.13)

* $p < .05$ (two-tailed).

applicant-type and company-type factors in job postings) and also contrary to the expectations of some recruiting practitioners (i.e., of chilling effects toward Black applicants when jobs are advertised as seeking conscientious and smart applicants). First, there was a significant main effect of race (see Table 3, Model 2, $\gamma_{03} = 6.18, p < .01$), suggesting that Black applicants are more likely to apply for a job regardless of the company description. Second, there was a negative Conscientiousness \times Race interaction ($\gamma_{04} = -1.23, p < .001$), indicating that the relationship between conscientiousness and overall probability of applying is less positive for Whites and that conscientious Blacks are more likely to apply for jobs in general than are conscientious Whites. Both of the above results may suggest Black–White differences in perceived job opportunity and/or immediate need for a job, which afford Blacks (especially conscientious Blacks) less latitude to ignore a job posting or opportunity compared with Whites.

In regard to the research question, another interesting and unexpected result emerged. There was a three-way interaction between type of company described in the job posting, conscientiousness, and race ($\gamma_{24} = 0.258, p < .001$). This effect implies that individual conscientiousness will strongly increase the chance that a Black applicant will apply (compared with a White potential applicant) when the company is described as innovative. In other words, describing a company as innovative greatly increases the conscientiousness to probability-of-applying correlation for Black applicants but not for White applicants.

In addition to the above analyses using multilevel modeling, we conducted a more straightforward analysis using Pearson correlations. As seen in Table 4, the correlation between conscientiousness and probability of applying to a company described as “innovative” is moderate for Blacks ($r = .40$) but much smaller for Whites ($r = .14$).

To summarize, results support many of our hypotheses involving attributes of conscientiousness and cognitive ability, and there were several surprises regarding race. First, there was a positive relationship between individual attributes (i.e., cognitive ability and conscientiousness) and the probability of applying for jobs described as needing these attributes. Second, conscientious applicants were more likely to apply to a results-oriented company, although there was no relationship between cognitive ability and the probability of applying to an innovative company. Generally speaking, these results illustrate that it is possible to recruit for these individual attributes by describing the job and company in particular ways.

Before discussing race effects on organizational attraction, we must first attempt to theoretically define the construct. What is “race”? To answer this question, we refer to Omi and Winant’s (1986) racial formation theory (a popular theory in the field of sociology), in which race is a social categorization that has emerged to reinforce a stratified social system and plays a role in maintaining class hierarchy. Germane to the present study is the idea that “insofar as the races receive different social rewards at all levels, they develop dissimilar objective interests, which can be detected in their struggles to either transform or maintain a particular social order” (Bonilla-Silva, 1997, p. 470). In that social order, the disadvantaged group (e.g., Blacks) would tend to develop interests that align with social mobility (the desire to gain occupational status) and social change (the desire to participate in

social systems that eschew status quo ideology; cf. Jost, Banaji, & Nosek, 2004).

Regardless of how the job was described, Black candidates in the current study were likely to apply for the positions. This may suggest race-linked differences in the perceived (or real) (White) privilege of having latitude to choose where one works. A concrete example of this effect comes from an experimental audit study conducted in Milwaukee, Wisconsin, that showed that Whites who reported having a criminal record on their job applications were more likely to get called back for an interview than were Blacks with equal education and experience but no criminal record (Pager, 2003). The point of this is that Black job seekers probably expect to have a difficult time finding jobs because they accurately assume that employers are likely to covertly discriminate because of their own ideas about which racial groups deserve chances or deserve to have specific jobs. This will necessitate Blacks’ applying for a great many more jobs just to find an employer who will offer a better chance. That is, Black applicants are more likely to feel compelled to apply for any job, even if it is less desirable or a worse perceived fit with their interests. So in the initial stages of selection, Black candidates are likely to apply for more positions. Future research should investigate how to keep Black candidates from self-selecting out of the application process (Ryan et al., 2000), once they have first indicated interest.

Next, we found that describing the company as innovative had a much greater impact on the relationship between conscientiousness and probability of applying for Blacks than for Whites. Much in the same way as Black candidates are more likely to notice the diversity of characters in job advertisements than are Whites (Avery, 2003), Black candidates in this study seem to take different cues from the company descriptions. Highly detail-oriented (conscientious) Black candidates may have been especially attuned to the opportunity to work for an innovative company, seeing innovation as related to social progressiveness and openness to change. Future work should measure the psychological mediators or race effects (Helms, Jernigan, & Mascher, 2005).

Using Study 2 Results in the Algebraic Recruiting Model

One practical result from Study 2 was that describing the company as innovative has the effect of attracting Black candidates with higher conscientiousness. When this result is interpreted in light of the algebraic recruiting model (derived in Study 1), we may suppose that describing a company as innovative has roughly similar effects to conscientiousness-focused recruiting within the minority group only (i.e., similar to the recruiting strategy we previously labeled *minority-conscientiousness* (C[D]; see Table 1). As shown in Figure 1, this recruiting condition is one of the better strategies for reducing adverse impact.

To explore the possibility that company descriptions in recruiting ads can ultimately reduce adverse impact, we took the recruiting parameter estimates from Table 4 (r_{B_Rec} and r_{W_Rec} for each predictor) and plugged them into the algebraic recruiting model (Equations 1–16, q_B and $q_W = 1.0$). We also used the local Study 2 sample estimates of d_{g_NoRec} , d_{c_NoRec} , and $r_{g,c}$ (Table 3) in these equations. The results are shown in Figures 3 and 4.

As seen in Figure 3, describing a company as innovative in the recruiting ad can produce a set of recruiting parameters

Table 4
Correlations Among Observed Variables in Study 2

Variable	M	SD	1	2	3	4	Subgroup <i>d</i>
1. Conscientiousness	3.40	0.67	—	—	—	—	.01
2. Cognitive ability	1,244	137.71	-.09	—	—	—	-.92**
3. Race (B = 1, W = 0)	18.5%	—	.00	-.37**	—	—	—
4. Overall probability of applying	7.14	1.46	.29**	-.05	.14**	—	.36**

* $p < .05$. ** $p < .01$ (two-tailed).

(e.g., r_{B_Rec} and r_{W_Rec}) that result in a sizable improvement in the adverse impact ratio. Furthermore, when looking at the effects of these same recruiting parameters on predicted performance of new hires, Figure 4 reveals that the adverse impact benefits (shown in Figure 3) come at little cost in terms of job performance.

General Discussion

This study demonstrated the consequences of recruiting for conscientiousness and cognitive ability, in addition to demographic characteristics. Several recruiting parameters were identified (e.g., the correlation between conscientiousness and the probability of applying, labeled r_{Rec}), and functional relationships were derived between these parameters and two selection outcomes: adverse impact and job performance. Empirical evidence suggested that these recruiting parameters may potentially differ by race, giving rise to the possibility that a single job posting, if correctly worded, could reduce adverse impact by differentially attracting candidates along both demographics and job-relevant individual differences.

Additionally, although there was not a chilling effect for Black candidates, more questions than answers arose regarding the interaction between applicant traits, job and company descriptions, and race. Specifically, future work is needed to help explain why Black potential applicants (compared with White potential appli-

cants) high in conscientiousness are much more attracted to companies described as innovative.

Future Directions and Limitations

Limitations of this study include (a) an assumption of 100% yield for selected applicants, (b) reliance on predictor unit weighting, and (c) artificiality of the policy capture design. Before discussing these limitations, we acknowledge this article’s potentially controversial assertion that targeted recruiting is fair and ethical. Indeed, many organizations that have written about their targeted recruiting strategies have detailed the informal and secretive nature of this process (Gunn, 2003; G. A. Maxwell, 2004). Nevertheless, targeted recruiting is usually legal (when recruiting the underrepresented group). The *Uniform Guidelines* (1978) clearly state that targeted recruiting (or “race-conscious recruiting”) is allowed and even encouraged. Many companies can and do have diversity recruiting strategies that conform to legal standards (Shackelford, 2003).

Recruiting Yield: When Some Offers Are Turned Down

Results depicted in Figures 1 and 2 assumed a recruiting yield of 100%. Alternatively, it is likely in practice that some initial job offers are declined (see Murphy, 1986). Furthermore, the overall rates of initial offer acceptance (p_{accept}) may differ between demographic subgroups. Also, the size of the relationship (usually negative) between predictor scores and probability of offer acceptance (b) may differ between subgroups. These considerations suggest four new yield parameters that have not been considered heretofore: p_{accept_B} , p_{accept_W} , b_B , and b_W . Articulating these parameters makes it possible to model between-race differences in overall probability of offer acceptance, as well as differences in the relationship between predictor scores and offer acceptance.⁴

Considering subgroup differences in recruiting yield parameters, we note several trends. First, recruiting yield parameters that correspond to the majority group (usually p_{accept_W} and b_W) will have a much greater impact on average job performance outcomes than will yield parameters corresponding to the minority group, because averages are more reflective of the majority. Second, the adverse impact ratio is sensitive to recruiting yield because declined offers from both subgroups in the initial round are then converted back into new offers for the second

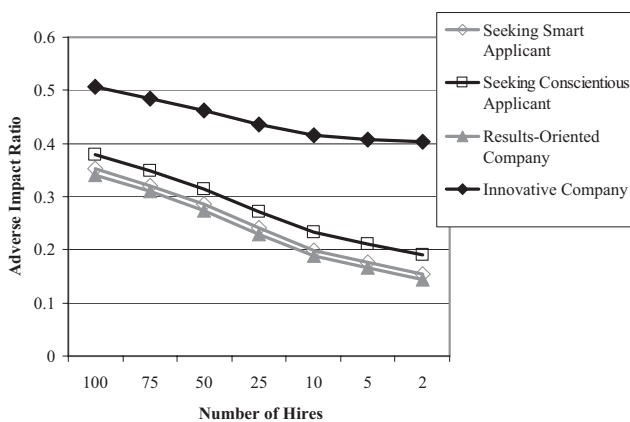


Figure 3. Effects of company description and desired applicant description on adverse impact ratio. Evaluated at $N_{NoRec} = 250$ applicants; $\pi_B = 18.5\%$ Black in the relevant working population; $d_{NoRec} = -.92$ for cognitive ability; $d_{NoRec} = .01$ for conscientiousness.

⁴ Details of a set of low-yield approximation equations are available from Daniel A. Newman.

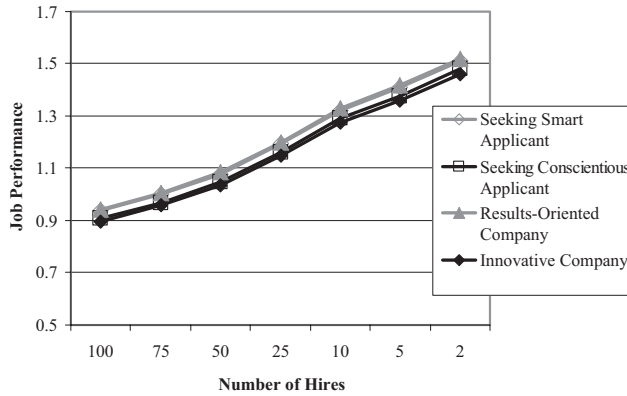


Figure 4. Effects of company description and desired applicant description on predicted job performance of new hires. Evaluated at $N_{NoRec} = 250$ applicants; $\pi_B = 18.5\%$ Black in the relevant working population; $d_{NoRec} = -.92$ for cognitive ability; $d_{NoRec} = .01$ for conscientiousness.

round. So declined offers have the same net effect on adverse impact as would increasing the overall selection ratio. The final adverse impact ratio (based on the total number of offers extended in both rounds) will thus increase or improve as recruiting yield falls (see Figure 1, but consider the horizontal axis to represent number of offers rather than number of hires). As some offers are turned down, new offers get generated, which increases the overall number of offers made and improves the adverse impact ratio.

In contrast to the adverse impact ratio, we note that the proportion of hires from the minority group ($p_{B|hire}$)—which is based on the number of offers accepted—will not necessarily improve as recruiting yield drops. If, for example, Black candidates are more likely to decline offers than are White candidates, but these declined offers are then extended to a backup candidate group that has a high proportion of White members, then $p_{B|hire}$ could be notably affected by low recruiting yields. In general, declined offers can either increase or decrease the diversity of the newly hired group. The best diversity outcomes are achieved when p_{accept_B} is greater than p_{accept_W} , whereas the worst outcomes (i.e., least diversity) come when p_{accept_B} is smaller than p_{accept_W} . Also, an equivalent drop in the magnitudes of both p_{accept_B} and p_{accept_W} (where $p_{accept_B} = p_{accept_W}$) by itself will improve diversity because this has the same overall effect as increasing the selection ratio. Given the outcomes described above, we assert that our four recruiting yield parameters (i.e., p_{accept_B} , p_{accept_W} , b_B , and b_W) should become the focus of future empirical research (cf. Ryan et al., 2000, and Schmit & Ryan, 1997, who assessed race and applicant withdrawal, but before the final selection decision).

Predictor Weighting Schemes

Aside from unit weighting (see Bobko, Roth, & Buster, 2007), the choice of alternative predictor weighting schemes can affect the adverse impact–performance tradeoff (Sackett & Ellingson, 1997). Recently, De Corte, Lievens, and Sackett (2007) solved sets of predictor weights that result in Pareto-optimal tradeoffs between selection quality and adverse impact.

These weighting schemes illustrate conditions under which a small decrement in job performance can be traded off for a relatively large boost in diversity.

Interestingly, the input parameters for calculating De Corte et al.'s (2007) Pareto-optimal sets of predictor weights depend on recruiting. First, recruiting can influence the local selection ratio, proportion minority versus majority in the applicant pool, and subgroup d for predictors and criteria. Second, targeted recruiting can lead to unequal predictor and criterion variances across applicant demographic subgroups, which violates an assumption of De Corte et al.'s (p. 1383) procedure. Perhaps future generalizations of De Corte et al.'s routine can be expanded to incorporate the effects of recruiting parameters identified in this article (i.e., the algebraic recruiting model) and to permit unequal variances across subgroups.

Artificiality and Transparency

Policy capture designs, although broadly indicative of individual choice patterns, are fraught with problems. Chief among these are the transparency and artificiality of the stimulus materials. As such, we believe Study 2's results reflect individual reports of how one would ideally respond in an abstract or information-impooverished setting (as if one were deciding whether to apply only on the basis of brief job postings or classified ads). It is important to confirm our findings in more naturalistic settings. One example might be a phone-in study based on posted job ads, although such a design may make it difficult to ascertain the personality traits and races of those who have low probability of applying (because they do not phone in). The dimensions along which future applicant attraction studies might be judged include (a) relevance of the sample to the problem at hand (including size, job qualifications, and demographic makeup); (b) within- versus between-persons level of analysis (i.e., are the same individuals exposed to various job posting messages, or are different individuals experiencing different stimuli? [between-persons designs can confound recruiting messages and attraction with individual differences]); (c) ecological validity or artificiality of the measured probability of applying, including participants' motivation to respond accurately; (d) transparency of the manipulation; and (e) transparency of the researchers' purpose or expectations. The current Study 2 design was relatively strong on points a, b, and e (e.g., participants did not know the study had anything to do with race), but weak on points c and d. In final analysis, a series of recruiting studies invoking different designs will be needed to cover all the methodological blind spots inherent in each respective design.

Other potential issues in the policy capture study involve social desirability and self-deception. As is common in the recruitment literature, we asked a sample of students to assume they were looking for a job. As such, one concern is that the correlation of conscientiousness with the probability of applying for a job posting seeking conscientious applicants might be spurious, as both variables could be related to socially desirable and self-deceptive responding. Fortunately, the small observed correlation of social desirability and conscientiousness ($r = .15$; Ones, Viswesvaran, & Reiss, 1996) renders the social desirability criticism largely moot.

To rule out self-deception (see Paulhus, 1984) as an alternative explanation, more research is needed.

Self-Reported SAT Scores

Another limitation of Study 2 was the use of self-reported rather than actual SAT scores. This concern is mitigated by the large meta-analytic correlation between actual and self-report SAT scores, $\bar{r}_{uncorrected} = .83$ ($k = 13$, $N = 2,436$; we updated Kuncel, Crede, and Thomas's [2005] meta-analysis [$\bar{r}_{uncorrected} = .82$, $k = 6$, $N = 719$] with primary studies from Mayer et al. [2007], Nofle and Robins [2007], and the 1997 cohort of the National Longitudinal Survey of Youth [Bureau of Labor Statistics, U.S. Department of Labor, 2005; $r = .782$, $N = 559$]). Aside from the validity of self-reported SAT scores, another issue relates to systematic biases in SAT self-reporting that are increasingly observed at the low end of the score range (Mayer et al., 2007). Using raw data from the National Longitudinal Survey of Youth cohort, we produced Figure 5 to examine the nature of SAT self-report bias. As seen in Figure 5, self-report SAT tends to be overestimated only when actual SAT is low. (Note that the process of SAT overestimation does not vary by Black–White race [$\Delta R^2 = .003$ for the set of five predictors: race plus four interaction terms of race with SAT and higher-order SAT terms].) To test whether this self-report bias in the SAT might influence conclusions from the current study, we imputed actual (unbiased) SAT from self-reported SAT using a polynomial regression equation based on the National Longitudinal Survey of Youth data ($N = 559$), then reran all analyses using these imputed SAT scores. Results of this sensitivity analysis showed that even after self-report bias in the SAT was removed, the pattern of statistical conclusions shown in Table 5 remains the same or stronger. Nevertheless, we encourage future researchers to

rely on actual—not self-reported—SAT scores, so such robustness tests will become unnecessary.

Predictors and Levels of Analysis

Additionally, our study is limited in its focus on cognitive ability and conscientiousness at the individual level of analysis. As Schneider (1996) remarked, a company full of conscientious people might be termed an obsessive–compulsive organization. Although conscientiousness and cognitive ability are significant predictors of individual performance and are frequently used in studies of adverse impact, less is known about their relationship with organization-level performance (Schneider, Smith, & Sipe, 2000).

Speculative Recommendations

We now relay a variety of recruiting strategies for the purpose of laying out areas that are ripe for future research on recruiting-based solutions to adverse impact.

Places to Recruit

In addition to recruiting in a generic fashion at trade schools and universities, recruiters can dig deeper to find applicants with desired qualities (i.e., cognitive ability, conscientiousness, and minority status). Cole, Field, and Guiles (2003) found that recruiters can accurately judge whether resumes contain information on academic achievement such as academic awards, placement on a dean's list, and internship participation and also found that this academic achievement information is related to applicant conscientiousness and cognitive ability. This suggests that companies can seek out potential candidates on the basis of academic achievement information, some of which is published by universities. Certainly, it may take more time to obtain these lists, but the quality of the applicant pool will be heightened through direct solicitation of high achievers. Other targeted recruiting strategies include contacting students inducted into Phi Beta Kappa and publishing job openings in outlets read by top students. To recruit for minority applicants high in conscientiousness or cognitive ability, some recruiters use these same strategies within historically Black colleges and universities, with minority-focused professional organizations (e.g., National Society of Black Engineers), at minority-focused events at professional conferences, or in minority-focused divisions of professional organizations (e.g., American Psychological Association Division 45, the Society for the Psychological Study of Ethnic Minority Issues).

Recruiters

From an attraction–similarity perspective (Byrne & Griffitt, 1973), companies wanting to attract candidates with high ability or conscientiousness would ensure that their recruiters also have those qualities. The similarity–attraction paradigm also explains why minorities are attracted to companies with minority recruiters (Thomas & Wise, 1999) and to those whose recruitment materials depict minorities (Avery, Hernandez, & Hebl, 2004; Perkins, Thomas, & Taylor, 2000). Avery et al.'s (2004) work suggested that race does not have to be identical between applicant and the depicted organizational member, but it is important that the depicted employee be a minority (e.g., Black candidates perceive similarities

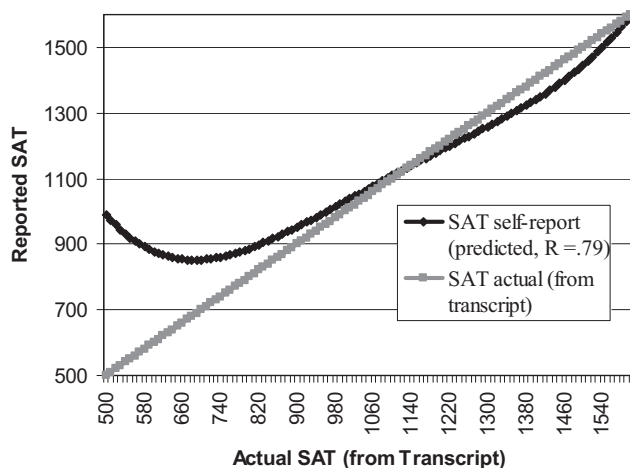


Figure 5. Bias in self-reported SAT. $N = 559$ respondents (17% Black and 83% White). Regression equation is $SAT_{self-report} = 4,543.209 - 15.018SAT + .0216SAT^2 - 1.300 \times 10^{-5} SAT^3 + 2.905 \times 10^{-9} SAT^4$. Imputation equation for actual SAT from self-reported SAT is $SAT = 2,219.836 - 1.238 SAT_{self-report} + .00403 SAT_{self-report}^2 + 5.89 \times 10^{-6} SAT_{self-report}^3 - 1.81 \times 10^{-9} SAT_{self-report}^4 - 1414.941race + 3.009race * SAT_{self-report} - 1.64 \times 10^{-3} race * SAT_{self-report}^2$ (for the imputation equation, $R = .83$, $W = 1$, and $B = 2$). $p < .05$ for all regression coefficients.

with Hispanic employees and vice versa). On the basis of these findings, the best way to target conscientious or high cognitive ability minorities might be to use minority recruiters with these characteristics. Retaining such recruiters may be expensive, but the price can be justified when securing a more diverse and productive workforce. Beyond traditional recruiters, minorities from functional areas of the business may network via professional organizations to attract high-potential minority candidates (Cole et al., 2003).

Recruitment Messages

Qualities that companies are looking for in candidates should be evident in job postings and advertisements. The recruitment message to target applicants on cognitive ability could include terms like *challenging* or *stimulating* to describe the job or work environment or could mention that the job requires intelligence, quick thinking, and knowledge. There is some evidence that students with high ability (i.e., GPA and cognitive ability scores) are more interested in jobs that are challenging than are students with lower ability (Trank, Rynes, & Bretz, 2002). There are many innovative ways to target candidates with high cognitive ability. For example, a recent ad for Google received a lot of media attention. Google posted math puzzles on giant signs in subway stations across major cities, along with a Web link for where to submit the answer. Those who answered the question were directed to a recruitment site for Google and encouraged to submit resumes. To attract minority candidates with high cognitive ability, one might combine the above approaches with suggestions that advertisements include successful minority employees (Doverspike, Taylor, Shultz, & McKay, 2000; Perkins et al., 2000).

For conscientiousness, recruitment messages could focus on the two major facets of conscientiousness: achievement and dependability (Hough, 1992). Recruitment messages could emphasize the desire for someone who both works hard to complete tasks and is reliable, organized, and dutiful. On the basis of the results from Study 2, we would suggest that to recruit on conscientiousness within the minority group, companies may want to describe themselves as innovative or progressive. Additionally, members of underrepresented groups may respond more positively to affirmative action messages that include an equal opportunity statement (Doverspike, Taylor, & Arthur, 2000).

Future research should examine the types of adjectives that are particularly appealing to applicants with high cognitive ability or conscientiousness. One caution, of course, is that recruitment messages must match the actual characteristics of the job because realistic job previews lead to higher performance and lower attrition (Avery et al., 2004; Breaugh & Starke, 2000; Phillips, 1998). It is important to strike the appropriate balance between short-term needs to fill slots with qualified candidates and the long-term objective of retaining quality candidates.

Long-Term Recruiting Solutions

The location, recruiter, and message may have only limited impact on recruitment outcomes without a longer term investment in solutions to entice qualified minority candidates to apply. Focusing on minority attraction to companies, many researchers and practitioners have suggested that internships, mentoring, training, and enrichment programs provide attractive opportunities for or-

ganizational entry (Collins, 2001; Doverspike, Taylor, Shultz, & McKay, 2000; Iganski, Mason, Humphreys, & Watkins, 2001). Members of so-called minority groups also need to be working in visible authority positions within the organization (Collins, 2001; Stoll, Raophael, & Holzer, 2001). Access to social networks and internal referrals could increase minority applications as well. Surveys of minorities and women in police forces indicate the primary reason they became police officers was because they knew someone in the department or in law enforcement (Collins, 2001). Some larger organizations have "employee networks" (also known as support groups, advocacy groups, affinity groups, or resource groups), which are collectives of people with similar demographics. These employees organize events, serve as recruiters, and develop programs to recruit minority candidates. Finally, these programs should perhaps be well funded by the company rather than a sole product of the personal initiative of a few human resources professionals (Iganski et al., 2001).

Conclusions

We examined the impact of targeted recruiting practices on percentage of hires from the minority group and the average individual performance of those hired. In sum, modest-sized recruiting interventions give major results. We demonstrated that it is possible to move toward satisfying both diversity and performance goals simultaneously and that targeted recruiting is a viable strategy for doing so. Of the recruiting strategies examined in this study, the one with the theoretically greatest potential for balancing performance and diversity is recruiting generally on cognitive ability and targeting minorities on personality (i.e., Cognitive + Minority-Conscientiousness). However, we recognize that organizations have different valuations of diversity and performance, and we presented outcome profiles (Figures 1 and 2) that can aid in deciding on a targeted recruiting strategy to match the organization's weighting of performance versus diversity objectives. Organizations now have guidance on the types of recruiting strategies that will help to increase diversity in the workplace, reducing adverse impact while improving the performance of those hired.

References

- Ackerman, P. L., & Heggestad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin, 121*, 219–245.
- Arvey, R. D., & Faley, R. H. (1988). *Fairness in selecting employees*. Reading, MA: Addison-Wesley.
- Avery, D. R. (2003). Reactions to diversity in recruitment advertising—Are differences Black and White? *Journal of Applied Psychology, 88*, 672–679.
- Avery, D. R., Hernandez, M., & Hebl, M. R. (2004). Who's watching the race? Racial salience in recruitment advertising. *Journal of Applied Social Psychology, 34*, 146–161.
- Avery, D. R., & McKay, P. F. (2006). Target practice: An organizational impression management approach to attracting minority and female job applicants. *Personnel Psychology, 59*, 157–187.
- Avis, J. M., Kudisch, J. D., & Fortunato, V. J. (2002). Examining the incremental validity and adverse impact of cognitive ability and conscientiousness on job performance. *Journal of Business and Psychology, 17*, 87–105.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimen-

- sions and job performance: A meta-analysis. *Personnel Psychology*, *44*, 1–26.
- Bobko, P., Roth, P. L., & Buster, M. A. (2007). The usefulness of unit weights in creating composite scores: A literature review, application to content validity, and meta-analysis. *Organizational Research Methods*, *10*, 689–709.
- Bonilla-Silva, E. (1997). Rethinking racism: Toward a structural interpretation. *American Sociological Review*, *62*, 465–480.
- Breaugh, J. A., & Starke, M. (2000). Research on employee recruitment: So many studies, so many remaining questions. *Journal of Management*, *26*, 405–434.
- Bureau of Labor Statistics, U.S. Department of Labor. (2005). *National Longitudinal Survey of Youth 1997 cohort, 1997–2003 (rounds 1–7)* (National Opinion Research Center, University of Chicago [Producer] and Center for Human Resource Research, Ohio State University [Distributor]) [Data file]. Columbus, OH. Available from the Bureau of Labor Statistics Web site, <http://www.bls.gov/nls/nlsy97.htm>
- Byrne, D., & Griffitt, W. (1973). Interpersonal attraction. *Annual Review of Psychology*, *24*, 317–336.
- Cascio, W. F., Outtz, J., Zedeck, S., & Goldstein, I. L. (1991). Statistical implications of six methods of test score use in personnel selection. *Human Performance*, *4*, 233–364.
- Chan, D., & Schmitt, N. (1997). Video-based versus paper-and-pencil method of assessment in situational judgment tests: Subgroup differences in test performance and face validity perceptions. *Journal of Applied Psychology*, *82*, 143–159.
- Civil Rights Act of 1964, Pub. L. 88–352, 78 Stat. 241 (1964).
- Civil Rights Act of 1991, Pub. L. 102–106 (1991).
- Cole, M. S., Field, H. S., & Giles, W. F. (2003). Using recruiter assessments of applicants' resume content to predict applicant mental ability and Big Five personality dimensions. *International Journal of Selection and Assessment*, *11*, 78–88.
- College Board. (2007). *2007 college-bound seniors: Total group profile report*. Retrieved August 21, 2008, from http://www.collegeboard.com/prod_downloads/about/news_info/cbsenior/yr2007/national-report.pdf
- Collins, J. M. (2001). *The chief's guide to recruitment and hiring*. Boston: Municipal Police Institute.
- De Corte, W. (1999). Weighing job performance predictors to both maximize the quality of the selected workforce and control the level of adverse impact. *Journal of Applied Psychology*, *84*, 695–702.
- De Corte, W., Lievens, F., & Sackett, P. R. (2007). Combining predictors to achieve optimal trade-offs between selection quality and adverse impact. *Journal of Applied Psychology*, *92*, 1380–1393.
- De Drue, C. K. W., & West, M. A. (2001). Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology*, *86*, 1191–1201.
- Doverspike, D., Taylor, M. A., & Arthur, W., Jr. (2000). *Affirmative action: A psychological perspective*. Commack, NY: Nova Scientific.
- Doverspike, D., Taylor, M. A., Shultz, K. S., & McKay, P. F. (2000). Responding to the challenge of a changing workforce: Recruiting non-traditional demographic groups. *Public Personnel Management*, *29*, 445–457.
- Foldes, H., Duehr, E. E., & Ones, D. S. (in press). Group differences in personality: Meta-analyses comparing five U.S. racial groups. *Personnel Psychology*.
- Fortune, D. (2004, September 16). *Johnson Controls executive addresses college presidents at the National Historically Black Colleges and Universities conference*. Retrieved January 12, 2005, from <http://www.johnsoncontrols.com/publish/us/en/news.html>
- Frey, M. C., & Detterman, D. K. (2004). Scholastic assessment of *g*? The relationship between the Scholastic Assessment Test and general cognitive ability. *Psychological Science*, *15*, 373–378.
- Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 7–28). Tilburg, the Netherlands: Tilburg University Press.
- Guion, R. M. (1998). *Assessment, measurement, and prediction for personnel decisions*. Mahwah, NJ: Erlbaum.
- Gunn, E. (2003, October 21). *Minority M. B. A. recruiting becomes targeted, low key*. Retrieved October 29, 2004, from http://www.lucasgroup.eu/job_seeker/get_wsarticle.asp?ID=177
- Gutman, A. (2004). Ground rules for adverse impact. *Industrial-Organizational Psychologist*, *41*, 109–119.
- Hall, D. T., & Parker, V. A. (2001). The role of workplace flexibility in managing diversity. *Organizational Dynamics*, *22*, 5–18.
- Hattrup, K., Rock, J., & Scalia, C. (1997). The effects of varying conceptualizations of job performance on adverse impact, minority hiring, and predicted performance. *Journal of Applied Psychology*, *82*, 656–664.
- Helms, J.E., Jernigan, M., & Mascher, J. (2005). The meaning of race in psychology and how to change it: A methodological perspective. *American Psychologist*, *60*, 27–36.
- Hough, L. M. (1992). The “big five” personality variables—construct confusion: Description versus prediction. *Human Performance*, *5*, 139–155.
- Hunter, J. E., & Hunter, R. F. (1984). Validity and utility of alternative predictors of job performance. *Psychological Bulletin*, *96*, 72–98.
- Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. *Journal of Applied Psychology*, *85*, 869–879.
- Iganski, P., Mason, D., Humphreys, A., & Watkins, M. (2001). Equal opportunities and positive action in the British National Health Service: Some lessons from the recruitment of minority ethnic groups to nursing and midwifery. *Ethnic and Racial Studies*, *24*, 294–317.
- Jackson, S. E., Joshi, A., & Erhardt, N. L. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management*, *29*, 801–830.
- Jöreskog, K. G., Sörbom, D. (2003). *LISREL 8.5*. Lincolnwood, IL: Scientific Software International.
- Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology*, *25*, 881–919.
- Judge, T. A., & Cable, D. M. (1997). Applicant personality, organizational culture, and organization attraction. *Personnel Psychology*, *50*, 359–394.
- Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology*, *87*, 797–807.
- Kim, S. S., & Gelfand, M. J. (2003). The influence of ethnic identity on perceptions of organizational recruitment. *Journal of Vocational Behavior*, *63*, 396–416.
- Kingsbury, N. (2005, June 7). *Approximation formulae for the Gaussian error integral, Q(x)*. Retrieved November 2005 from Connexions Web site: <http://cnx.org/content/m11067/latest/>
- Kirnan, J. P., Farley, J. A., & Geisinger, K. F. (1989). The relationship between recruiting source, applicant quality, and hire performance: An analysis by sex, ethnicity, and age. *Personnel Psychology*, *42*, 293–308.
- Kuncel, N. R., Crede, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research*, *75*, 63–82.
- Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2004). Academic performance, career potential, creativity, and job performance: Can one construct predict them all? *Journal of Personality and Social Psychology*, *86*, 148–161.
- Ledvinka, J., & Scarpello, J. (1991). *Federal regulation of personnel and human resource management* (2nd ed.). Boston: PWS-Kent.
- Lievens, F., Decaestecker, C., Coetsier, P., & Geirnaert, J. (2001). Organizational attractiveness for prospective applicants: A person-

- organization fit perspective. *Applied Psychology: An International Review*, 50, 30–51.
- Maxwell, G. A. (2004). Minority report: Taking the initiative in managing diversity at BBC Scotland. *Employee Relations*, 26, 182–202.
- Maxwell, S. E., & Arvey, R. D. (1993). The search for predictors with high validity and low adverse impact: Compatible or incompatible goals? *Journal of Applied Psychology*, 78, 433–437.
- Mayer, R. E., Stull, A. T., Campbell, J., Almeroth, K., Bimber, B., Chun, D., & Knight, A. (2007). Overestimation bias in self-reported SAT scores. *Educational Psychology Review*, 19, 443–454.
- Morris, S. B., & Lobsenz, R. E. (2000). Significance tests and confidence intervals for the adverse impact ratio. *Personnel Psychology*, 53, 89–111.
- Murphy, K. R. (1986). When your top choice turns you down: Effect of rejected offers on the utility of selection tests. *Psychological Bulletin*, 99, 133–138.
- Murphy, K. R., Osten, K., & Myers, B. (1995). Modeling the effects of banding in personnel selection. *Personnel Psychology*, 48, 61–84.
- Newman, D. A., Hanges, P. J., & Outtz, J. L. (2007). Racial groups and test fairness: Considering history and construct validity. *American Psychologist*, 62, 1082–1083.
- Newman, D. A., Jacobs, R. R., & Bartram, D. (2007). Choosing the best method for local validity estimation: Relative accuracy of meta-analysis vs. a local study vs. Bayes-analysis. *Journal of Applied Psychology*, 92, 1394–1413.
- Newman, D. A., & Sin, H. P. (2007). How do missing data bias estimates of within-group agreement? Sensitivity of SD_{WG} , CV_{WG} , $r_{WG(j)}$, $r_{WG(j)}^*$, and ICC to systematic nonresponse. *Organizational Research Methods*. Prepublished August 8, 2007. doi:10.1177/1094428106298969
- Noftle, E. E., & Robins, R. W. (2007). Personality predictors of academic outcomes: Big Five correlates of GPA and SAT scores. *Journal of Personality and Social Psychology*, 93, 116–130.
- Omi, M., & Winant, H. (1986). *Racial formation in the United States: From the 1960s to the 1980s*. New York: Routledge & Kegan Paul.
- Ones, D. S., Viswesvaran, C., & Reiss, A. D. (1996). Role of social desirability in personality testing for personnel selection: The red herring. *Journal of Applied Psychology*, 81, 660–679.
- Outtz, J. L. (1998). Testing medium, validity, and test performance. In M. D. Hakel (Ed.), *Beyond multiple choice: Evaluating alternatives to traditional testing for selection* (pp. 41–58). Mahwah, NJ: Erlbaum.
- Outtz, J. L. (2002). The role of cognitive ability tests in employment selection. *Human Performance*, 15, 161–171.
- Pager, D. (2003). The mark of a criminal record. *American Journal of Sociology*, 108, 937–975.
- Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, 46, 589–609.
- Perkins, L. A., Thomas, K. M., & Taylor, G. A. (2000). Advertising and recruitment: Marketing to minorities. *Psychology & Marketing*, 17, 235–255.
- Phillips, J. M. (1998). Effects of realistic job previews on multiple organizational outcomes: A meta-analysis. *Academy of Management Journal*, 41, 673–690.
- Potosky, D., Bobko, P., & Roth, P. L. (2005). Forming composites of cognitive ability and alternative measures to predict job performance and reduce adverse impact: Corrected estimates and realistic expectations. *International Journal of Selection and Assessment*, 13, 304–315.
- Powell, G. N. (1998). Reinforcing and extending today's organizations: The simultaneous pursuit of person-organization fit and diversity. *Organizational Dynamics*, 26, 50–61.
- Raudenbush, S. W. (1993). A crossed random effects model for unbalanced data with applications in cross-sectional and longitudinal research. *Journal of Educational Statistics*, 18, 321–349.
- Ree, M. J., Carretta, T. R., & Earles, J. A. (1998). In top-down decisions, weighting variables does not matter: A consequence of Wilks' theorem. *Organizational Research Methods*, 1, 407–420.
- Robertson, I. T., & Smith, M. (2001). Personnel selection. *Journal of Occupational and Organizational Psychology*, 74, 441–472.
- Roth, P. L., Bevier, C. A., Bobko, P., Switzer, F. S., III, & Tyler, P. (2001). Ethnic group differences in cognitive ability in employment and educational settings: A meta-analysis. *Personnel Psychology*, 54, 297–330.
- Roth, P. L., Bobko, P., & Switzer, F. S. (2006). Modeling the behavior of the 4/5ths rule for determining adverse impact: Reasons for caution. *Journal of Applied Psychology*, 91, 507–522.
- Ryan, A. M., Ployhart, R. E., & Friedel, L. A. (1998). Using personality testing to reduce adverse impact: A cautionary note. *Journal of Applied Psychology*, 83, 298–307.
- Ryan, A. M., Sacco, J. M., McFarland, L. A., & Kriska, S. D. (2000). Applicant self-selection: Correlates of withdrawal from a multiple hurdle process. *Journal of Applied Psychology*, 85, 163–179.
- Rynes, S. L. (1991). Recruitment, job choice, and post-hire consequences: A call for new research directions. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology: Vol. 2* (2nd ed., pp. 399–444). Palo Alto, CA: Consulting Psychologists Press.
- Sackett, P. R., & Ellingson, J. E. (1997). The effects of forming multi-predictor composites on group differences and adverse impact. *Personnel Psychology*, 50, 707–721.
- Sackett, P. R., & Roth, L. (1996). Multi-stage selection strategies: A Monte Carlo investigation of effects on performance and minority hiring. *Personnel Psychology*, 49, 549–572.
- Sackett, P. R., Schmitt, N., Ellingson, J. E., & Kabin, M. B. (2001). High-stakes testing in employment, credentialing, and higher education: Prospects in a post-affirmative action world. *American Psychologist*, 56, 302–318.
- Schmidt, F. L., & Hunter, J. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124, 262–274.
- Schmidt, F. L., & Hunter, J. (2004). General mental ability in the world of work: Occupational attainment and job performance. *Journal of Personality and Social Psychology*, 86, 162–173.
- Schmit, M. J., & Ryan, A. M. (1997). Applicant withdrawal: The role of test-taking attitudes and racial differences. *Personnel Psychology*, 50, 855–876.
- Schmitt, N., Rogers, W., Chan, D., Sheppard, L., & Jennings, D. (1997). Adverse impact and predictive efficiency of various predictor combinations. *Journal of Applied Psychology*, 82, 719–730.
- Schneider, B. (1987). The people make the place. *Personnel Psychology*, 40, 437–453.
- Schneider, B. (1996). When individual differences aren't. In K. R. Murphy (Ed.), *Individual differences and behavior in organizations* (pp. 548–571). San Francisco: Jossey-Bass.
- Schneider, B., Smith, D. B., & Sipe, W. P. (2000). Personnel selection psychology: Multilevel considerations. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 91–120). San Francisco: Jossey-Bass.
- Schwab, D. P., Rynes, S. L., & Aldag, R. J. (1987). Theories and research on job search and choice. In K. Rowland & G. Ferris (Eds.), *Research in personnel and human resources management* (Vol. 5, pp. 129–166). Greenwich, CT: JAI Press.
- Segal, J. A. (2002, June). Hiring days are (almost) here again! *HR Magazine*, 47(6), 125–135.
- Shackelford, W. G. (2003). The changing definition of workplace diversity. *The Black Collegian Online*. Retrieved August 21, 2008, from <http://www.black-collegian.com/issues/2ndsem03/changing2003-2nd.shtml>
- Stoll, M. A., Raophael, S., & Holzer, H. J. (2001). *Why are black employees more likely than white employees to hire blacks?* (Discussion Paper No. 1236–01). Madison, WI: Institute for Research on Poverty.

Thaler-Carter, R. E. (2001, June). Diversify your recruitment advertising. *HR Magazine*, 46(6), 92–100.

Thomas, K. M., & Wise, P. G. (1999). Organizational attractiveness and individual differences: Are diverse applicants attracted by different factors? *Journal of Business and Psychology*, 13, 375–390.

Trank, C. Q., Rynes, S. L., & Bretz, R. B., Jr. (2002). Attracting applicants in the war for talent: Differences in work preferences among high achievers. *Journal of Business and Psychology*, 16, 331–345.

Turban, D. B., & Keon, T. L. (1993). Organizational attractiveness: An interactionist perspective. *Journal of Applied Psychology*, 78, 184–193.

Uniform guidelines on employee selection procedures. 41 C.F.R. § 60, pt. 60–3 (1978).

Wainer, H. (1976). Estimating coefficients in linear models: It don't make no nevermind. *Psychological Bulletin*, 83, 213–217.

Wanous, J. P. (1977). Organizational entry: Newcomers moving from outside to inside. *Psychological Bulletin*, 84, 601–618.

Appendix

Organizational Attraction Policy Capture Items (Probability of Applying)

Instructions: We are interested in understanding the characteristics of job postings that attract candidates. Please rate YOUR probability of applying for the job as described. You can assume that the company is an Equal Opportunity Employer where all employees are afforded an equal chance to succeed. Please rate using the following scale (e.g., 5 = 41%–50% chance that you would apply for the job):

0	1	2	3	4	5	6	7	8	9	10
0%	1%–10%	11%–20%	21%–30%	31%–40%	41%–50%	51%–60%	61%–70%	71%–80%	81%–90%	91%–100%

If you were looking for a job, what is the probability that you would apply to this company?

Manipulated recruitment conditions (Applicant Traits Sought × Company Descriptions)	First-order measurement parameters	
	First-order factor loadings (applicant traits)	First-order factor loadings (company descriptions)
	(Smart)	
1. The job requires someone who is smart. Should desire working for a demanding company.	.64	.66 (Demanding)
2. The job requires someone who is smart. Should desire working for a results-oriented company.	.72	.60 (Results)
3. The job requires someone who is smart. Should desire working for a detail-oriented company.	.65	.61 (Details)
4. The job requires someone who is smart. Should desire working for an innovative company.	.67	.64 (Innovative)
	(Intelligent)	
5. The job requires someone who is intelligent. Should desire working for a demanding company.	.61	.64 (Demanding)
6. The job requires someone who is intelligent. Should desire working for a results-oriented company.	.66	.61 (Results)
7. The job requires someone who is intelligent. Should desire working for a detail-oriented company.	.49	.77 (Details)
8. The job requires someone who is intelligent. Should desire working for an innovative company.	.58	.67 (Innovative)
	(Logical)	
9. The job requires someone who is logical. Should desire working for a demanding company.	.70	.58 (Demanding)
10. The job requires someone who is logical. Should desire working for a results-oriented company.	.63	.62 (Results)

(table continues)

(Appendix continues)

Manipulated recruitment conditions (Applicant Traits Sought × Company Descriptions)	First-order measurement parameters	
	First-order factor loadings (applicant traits)	First-order factor loadings (company descriptions)
11. The job requires someone who is logical. Should desire working for a detail-oriented company.	.59	.63 (Details)
12. The job requires someone who is logical. Should desire working for an innovative company.	.69	.57 (Innovative)
	(Sharp)	
13. The job requires someone who is sharp. Should desire working for a demanding company.	.48	.75 (Demanding)
14. The job requires someone who is sharp. Should desire working for a results-oriented company.	.62	.64 (Results)
15. The job requires someone who is sharp. Should desire working for a detail-oriented company.	.34	.86 (Details)
16. The job requires someone who is sharp. Should desire working for an innovative company.	.61	.67 (Innovative)
	(Brilliant)	
17. The job requires someone who is brilliant. Should desire working for a demanding company.	.70	.53 (Demanding)
18. The job requires someone who is brilliant. Should desire working for a results-oriented company.	.80	.44 (Results)
19. The job requires someone who is brilliant. Should desire working for a detail-oriented company.	.82	.45 (Details)
20. The job requires someone who is brilliant. Should desire working for an innovative company.	.68	.48 (Innovative)
	(Reliable)	
21. The job requires someone who is reliable. Should desire working for a demanding company.	.58	.67 (Demanding)
22. The job requires someone who is reliable. Should desire working for a results-oriented company.	.70	.57 (Results)
23. The job requires someone who is reliable. Should desire working for a detail-oriented company.	.58	.71 (Details)
24. The job requires someone who is reliable. Should desire working for an innovative company.	.60	.68 (Innovative)
	(Self-disciplined)	
25. The job requires someone who is self-disciplined. Should desire working for a demanding company.	.25	.82 (Demanding)
26. The job requires someone who is self-disciplined. Should desire working for a results-oriented company.	.60	.62 (Results)
27. The job requires someone who is self-disciplined. Should desire working for a detail-oriented company.	.74	.56 (Details)
28. The job requires someone who is self-disciplined. Should desire working for an innovative company.	.46	.66 (Innovative)
	(Conscientious)	
29. The job requires someone who is conscientious. Should desire working for a demanding company.	.37	.83 (Demanding)
30. The job requires someone who is conscientious. Should desire working for a results-oriented company.	.30	.78 (Results)
31. The job requires someone who is conscientious. Should desire working for a detail-oriented company.	.75	.52 (Details)
32. The job requires someone who is conscientious. Should desire working for an innovative company.	.56	.59 (Innovative)
	(Well organized)	
33. The job requires someone who is well-organized. Should desire working for a demanding company.	.72	.55 (Demanding)
34. The job requires someone who is well-organized. Should desire working for a results-oriented company.	.76	.46 (Results)
35. The job requires someone who is well-organized. Should desire working for a detail-oriented company.	.72	.50 (Details)
36. The job requires someone who is well-organized. Should desire working for an innovative company.	.73	.47 (Innovative)

(table continues)

Manipulated recruitment conditions (Applicant Traits Sought × Company Descriptions)		First-order measurement parameters	
		First-order factor loadings (applicant traits)	First-order factor loadings (company descriptions)
		(Hard working)	
37. The job requires someone who is hard-working. Should desire working for a demanding company.		.67	.59 (Demanding)
38. The job requires someone who is hard-working. Should desire working for a results-oriented company.		.71	.57 (Results)
39. The job requires someone who is hard-working. Should desire working for a detail-oriented company.		.71	.57 (Details)
40. The job requires someone who is hard-working. Should desire working for an innovative company.		.62	.61 (Innovative)
Second-order measurement parameters			
First-order factors	Second-order factor loadings	First-order factors	Second-order factor loadings
Applicant traits	Smart applicant	Company descriptions	Results-oriented company
Smart	.97	Demanding	.85
Intelligent	.99	Results oriented	.92
Logical	.77	Detail oriented	.88
Sharp	.95		
Brilliant	.82		
	Conscientious applicant		Innovative company
Reliable	.86	Innovative	1.00
Self-disciplined	.96		
Conscientious	.83		
Well organized	.81		
Hard working	.88		
Latent correlations between higher order attraction factors			
Smart–conscientious	.65		
Results–innovative	.63		
Goodness-of-fit statistics			
$\chi^2/df = 2,548.02/685$			
Root-mean-square error of approximation (RMSEA) = .08			
Tucker-Lewis Index (TLI) = .98			
Comparative fit index (CFI) = .98			
Standardized root-mean-square residual (SRMR) = .09			

Note. All estimates derived from second-order confirmatory factor analysis. Factors reflect latent job posting dimensions, which manifest in applicant self-reported probability of applying for job.

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