

**Discrimination in the Credential Society:
An Audit Study of Race and College Selectivity in the Labor Market**

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ABSTRACT

Despite rapid expansion of the U.S. higher education system over the past few decades, little research has focused on the effects of race and college selectivity in the labor market for recent college graduates. Theoretical explanations of educational opportunities suggest that as the pool of job candidates grows quantitatively similar in terms of total educational attainment, qualitative aspects such as college selectivity should have more influence on hiring decisions. This project examines employment opportunities for white and black graduates of elite top-ranked universities vs less selective institutions. I use an experimental audit design to match candidate pairs and apply for 1,008 jobs on a national job search website. The results suggest that higher education credentials do not equalize employment opportunities for blacks compared to whites, even among elite university graduates. Although a credential from an elite university results in more call-backs for all candidates, black candidates from elite universities only do as well as white candidates from less selective universities. Moreover, race results in a double penalty: when employers do respond to black candidates it is for jobs with lower starting salaries than what their white peers receive.

INTRODUCTION

“Education is the most important determinant yet discovered of how far one will go in today's world.” (1979:3)

--Randall Collins, *The Credential Society*

In the 21st century, the age of a new racial paradigm with the election of a black man as President of the United States, we might expect that Collins is more right than ever: that educational attainment trumps race. The popular notion in U.S. society is that education is the great equalizer. From a young age, children learn that education helps individuals overcome social disadvantage and opens many doors of opportunity. Although education scholars consistently document the ways that institutions at the primary and secondary levels reinforce a stratified system with particularly deep racial divides in outcomes, scholars have devoted considerably less attention to differences among college degree holders. Now more than ever, larger proportions of high school graduates are continuing on to a rapidly expanding higher education system that promises to equalize opportunities for all. But does it? Do higher education credentials result in similar employment opportunities for whites and blacks? Furthermore, how much of an advantage does a credential from an elite university provide? The answers to these questions are of considerable importance to a wide group of individuals, including students, families, educators, policymakers, and researchers; yet to date, research has provided mixed and contradictory answers.

In this article, I examine the employment opportunities for white and black graduates of elite top-ranked universities versus less selective institutions to determine (1) how much college selectivity matters, (2) if racial differences among college graduates remain while controlling for college selectivity, and (3) if there are racial differences do they vary by college selectivity. First, I review the mechanisms scholars suggest are at the heart of the effect of educational

attainment on labor market outcomes. I then draw upon work on human capital theory and racial discrimination to suggest that racial differences in outcomes can be attributed to discrimination under tightly controlled circumstances. To explain why scholars might disagree over the effects of college selectivity and race, I draw upon the theory of effectively maintained inequality, which suggests that as quantitative aspects of education become more commonplace, qualitative aspects of education become more important. To address my research questions, I use an experimental research design known as an audit study to match candidate pairs and apply for jobs listed on a national job search website. In total, I apply for 1,008 jobs over three geographic regions in the U.S. to examine how race and college selectivity affect the likelihood of receiving an employer request via e-mail or phone for a job interview. Then, among those job candidates receiving responses I analyze how race and college selectivity influence candidates' potential salary range. The results suggest that higher education credentials do not equalize employment opportunities for blacks compared to whites, even among elite university graduates. Credentials from an elite university result in more call-backs for all candidates, but black candidates from an elite university only do as well as white candidates from a less selective university. Moreover, race results in a double penalty: when employers do respond to black candidates it is for jobs with lower starting salaries than what their white peers receive. Although these findings refute recent methodologically sophisticated research using survey data on college selectivity, I suggest that the context of the current higher education environment explains these differences.

BACKGROUND AND THEORY

The Value of Educational Attainment

There is no denying that simply obtaining a college degree is beneficial. Individuals with a bachelor's degree earn nearly \$22,000 more per year and are less than half as likely to be unemployed than individuals with just a high school diploma (Baum, Ma, and Payea 2010).

Moreover, expected lifetime earnings for bachelor's degree holders are 66% higher than for high school graduates (ibid). A long line of research has established the positive effects of educational attainment on employment status (Caspi, Wright, Moffitt, and Silva 1998), occupational status (Blau and Duncan 1967; Featherman and Hauser 1978; Grusky and DiPrete 1990), earnings (Jencks et al 1979; Murnane, Willett, and Levy 1995), and wealth (Land and Russell 1996). Indeed, today a college degree is considered so important that many Americans forgo wages for the short term and invest large amounts of time and money to attend college. And, given the statistics presented above, it is clear that employers value candidates with such a credential. But *why* does a college degree have such value? A college degree provides an individual with different forms of capital or resources for use on the labor market and during employment. Scholars describe three types of capital, human, cultural, and social, each with a different explanation for the effect of educational attainment on labor market outcomes.

The idea of the U.S. as a meritocratic society where educational achievement and attainment leads to success is undoubtedly the dominant paradigm in popular culture and the media. Economists since at least the 1950s have adopted this idea in developing theories and empirical research to explain the links between educational attainment and the labor market (Becker 1964; Mincer 1958, 1989; Schultz 1962; Spence 1973). Known as human capital theory, this work suggests that individuals enter the labor force with no previous work experience and thus no history of job specific skills. Schooling, however, provides individuals with general skills and abilities (human capital) that are valuable in a wide variety of jobs. Human capital theorists argue that employers seek to hire individuals with the most skill and ability and that educational attainment is one means by which they can assess this.

In contrast to human capital, the cultural capital perspective suggests that education may serve to reproduce the existing stratified system (Bourdieu 1977). Only individuals with the

proper attitudes, behavior, and preferences satisfy the requirements of gatekeepers (e.g. teachers) and make it to the world of higher education. Credentials serve as a form of cultural capital that excludes members of particular social backgrounds. Groups from other social backgrounds maintain advantages in employment by enacting cultural standards of educational requirements as barriers to entry (Collins 1971, 1979). Thus, employers seek to hire individuals with a shared culture using educational credentials as a marker.

One final important explanation of how education affects labor market outcomes is through social capital. In general, scholars label social capital as the resources available in a network (Lin 1999). As individuals progress through higher levels of educational attainment, their networks and social capital expand leading to increased employment opportunities. Some research connects the concentration of alumni from certain elite schools to positions of economic power (Cookson and Persell 1985; Domhoff 1967). Thus, employers may hire individuals through shared networks based on education connections.

A longstanding debate exists as to which of these theories is most appropriate in explaining the effect of educational attainment on labor market outcomes (e.g. Bills 2003, 2004; Bowles, Gintis, and Osborne 2001; Brown 1995; Kingston 2006). Whatever the true mechanism, these theories highlight the importance of education in the labor market. However, as I suggest in the following sections levels of capital should vary by college selectivity but should not vary significantly by race. Thus, we might expect these theories to predict significant effects of college selectivity levels on employment outcomes, but non-significant effects of race on employment outcomes.

Racial Differences in Returns to Education

Rates of college attendance for minorities have significantly increased since the 1960s. However, although there are employment benefits to a college degree for everyone, data suggest

that among bachelor's degree holders, black men make approximately 75% of the wages of white men and black women make approximately 90% of the wages of white women (Bradbury 2002). In fact, racial differences in earnings (Cancio, Evans, and Maume 1996; Zhang 2008) and unemployment (Wilson, Tienda, and Wu 1995) are highest among bachelor's degree holders. How do we explain these differences? Research suggests that racial discrimination has declined since the 1960s. A rich debate about why race influences the returns to educational attainment often pits scholars who argue that effects stem from employer biases and discrimination (Lucas 2008; Pager 2003, 2007a; Petersen and Saporta 2004) against those who argue that effects stem from human capital differences, or different levels of ability, skills, and effort (Farkas and Vicknair 1996; Neal and Johnson 1996).

Scholars in the human capital tradition argue that employers look to make the best possible investments in terms of who they hire. Within the literature on high school graduates, scholars argue that employers choose white candidates over black candidates at higher rates because of differences in high school quality, curriculum, and other characteristics that lead to racial differences in human capital (Card and Krueger 1990; Farkas and Vicknair 1996; O'Neill 1990; Smith and Welch 1989). Among college graduates these human capital characteristics might be captured by college selectivity, but this information is often unavailable in standard datasets. At the heart of this research is the effort to explain differences in outcomes based on a number of variables, such as educational preparation, knowledge or IQ, effort, selection of major and experience, which are undoubtedly correlated. One critique of the human capital model is a practical one. Critics point out that the model fails to explain how employers determine applicants' abilities, apart from their educational achievement and attainment, given that employers are legally prohibited from using IQ tests in hiring decisions. Another critique of the human capital model is a methodological one. In an effort to figure out what human capital is,

researchers control for too many correlated variables without understanding the processes of how these characteristics shape each other (Tomaskovic-Devey, Thomas, and Johnson 2005). Recent research that attempts to more accurately model these processes finds racial differences in the return to education even after accounting for human capital (Alon and Haberfeld 2007; Tomaskovic-Devey, Thomas, and Johnson 2005).

This suggests that racial discrimination may be operating at some level. Indeed, many studies have documented extensively the role of employer attitudes towards and opinions of blacks in reference to other racial groups (Kirschenman and Neckerman 1991; Moss and Tilly 2001; Thomas 2003; Waldinger 1997; Waldinger and Lichter 2003), the role of racially-targeted recruitment (Braddock and McPartland 1987; Kasinitz and Rosenberg 1996; Moss and Tilly 2001; Kirschenman and Neckerman 1991), and racial differences in employment outcomes using experimental methods (Bertrand and Mullainathan 2004; Pager 2003, 2007a; Pager, Western, and Bonikowski 2009; Turner, Fix, and Struyk 1991). However, these studies focus on low-wage employment that does not require a college degree. Thus, it is not clear what effect race may have on college degree holders in the labor market. We know there are racial differences in labor market outcomes for degree holders, but we know little about what accounts for those differences. Are blacks discriminated against in the labor market regardless of educational attainment, or are racial differences in employment outcomes a product of differences in college selectivity? Recent theoretical advancements suggest that college selectivity may be increasingly important to this discussion.

Horizontal Stratification and College Selectivity: Effectively Maintained Inequality

Research in sociology and economics that examines *vertical* stratification, or differences between individuals with different levels of educational attainment (e.g. high school vs. college graduate), commonly incorporates the theories of human, cultural, and social capital. Of note,

however, is that the vast majority of research continues to treat all bachelor's degrees as equal measures of educational attainment. But society has changed drastically since scholars like Ivar Berg (1971) and Randall Collins (1979) wrote about the value of a college degree as a credential. In 1980, just one year after Collins' influential book, 17.0% of the U.S. population 25 and older had at least a bachelor's degree, up from 7.7% in 1960 (National Center for Education Statistics 2010: Table 8). By 2010, the number had grown to 29.9% (ibid). Although whites made significant progress from 1980 – 2010 (an increase from 18.4% to 33.2%), blacks kept pace as well (an increase from 7.9% to 20.0%). Thus, as educational attainment has expanded dramatically over the past few decades, obtaining a bachelor's degree is both less racialized and differentiates an individual from other individuals less now than it did in the past .

Research has shown that the importance of stratification within higher education grows as mean levels of educational attainment rise (Karabel 1972). The increase in bachelor's degree holders has been matched by an expansion of general inequality among college graduates (Hoxby and Long 1999; Levy and Murnane 1992) and racial inequality among college graduates (Bradbury 2002; Cancio, Evans, and Maume 1996; Zhang 2008), which may reflect differences in the selectivity of postsecondary institutions. Essentially, educational credentials from different institutions result in *horizontal* stratification, or differences between individuals with the same educational attainment (Gerber and Cheung 2008). Still, despite a vastly different world of academic credentials from that of the 1970s, researchers still mostly identify characteristics of educational attainment using the same categories and variables since that period. With the number of college graduates growing every year, attention to this additional layer of inequality that stems from higher education is more important now than ever.

The theory of effectively maintained inequality helps elucidate the connection between rising educational attainment and the importance of college selectivity. This theory posits that as

a disadvantaged group makes quantitative gains compared to an advantaged group, the advantaged social group seeks out qualitative gains (Lucas 2001). Lucas (ibid) demonstrates how near universal attainment of high school completion over the past few decades (a quantitative gain) has increased the importance of and advantages from curriculum tracking (a qualitative gain). A more general interpretation of the theory of effectively maintained inequality suggests that steady increases in college enrollment and degree completion may shift the importance of educational attainment from obtaining a college degree to the name of the institution on that degree. In fact, some scholars point to this theory in research that shows how educational expansion has resulted in increased inequalities in types of institutional enrollment and completion (e.g. 2-year versus 4-year) in both the U.S. (Roksa 2011) and in other countries (Ayalon and Yogev 2005; Boliver 2011; Hallsten 2010; McCoy and Smyth 2011; Tsai and Kanomata 2011).

Although the U.S. has not yet reached universal attainment of college education, recent data suggests that more than 70% of high school graduates enroll in some form of college (Bureau of Labor Statistics 2010). Employers now have a larger pool of applicants to choose from who fit certain education requirements; a pool that is homogeneous in terms of total educational attainment, but heterogeneous in other ways. Perhaps the most important or at least easily measured way to differentiate these candidates is by where an individual obtains her degree.

Still, if employers are to choose one college educated individual over another, prior theory and research indicates that the chosen candidate would need an advantage in human, cultural, or social capital, any or all of which might be gleaned through college selectivity. One way to address human capital is to examine if the top colleges and universities have students with greater skills and abilities at entry. If we believe SAT scores are a valid measure of

cognitive ability, then more selective schools do indeed have students with greater ability: the top 20 colleges in the U.S. News and World Report national rankings (2011) have average SAT scores between 2002 (25th percentile) and 2286 (75th percentile), while colleges ranked 100 positions lower (101-120) have average SAT scores between 1552 (25th percentile) and 1893 (75th percentile) (author calculations from National Center for Education Statistics 2011).

Additional findings from the Intercollegiate Studies Institute suggest that political and historical literacy are correlated with selectivity (Toby 2010:126) and other research suggests that the most selective colleges rely on test scores more in admissions factors (Alon and Tienda 2007). These results all suggest that the most elite colleges at least select the students with the highest skills and abilities, even if they do not alter them during an individual's college career.

Conversely, if cultural capital theory is correct and employers look for individuals with the right cultural attributes, we might expect that where an individual obtains her college degree will matter. One reason is that more selective schools enroll students of high social status and class backgrounds (Kingston and Lewis 1990). Data from the National Educational Longitudinal Survey suggest that the attendance disparity between students from the lowest and highest income brackets is quite wide when selectivity is considered (see Soares 2007:4). Attendance, if not acceptance, at the top universities likely presents a class barrier due to the maintenance over time of a large gap (at least 2.0 since 1970) between the estimated attendance costs of a 4-year private versus 4-year public institution (National Center for Education Statistics 2010).¹ Finally, at least among public universities, students from the most advantaged social backgrounds are more likely to graduate (Bowen, Chingos, and McPherson 2009) and the graduation rate gaps between income quartiles are highest at the most selective colleges (Carnevale and Rose 2003).

¹ Author calculations from National Center for Education Statistics, *2010 Digest of Education Statistics*, Table 345.

Clearly, students from privileged social class backgrounds attend and graduate from the top colleges and universities at greater rates than students from disadvantaged backgrounds.

The final reason why college selectivity might affect labor market outcomes is social capital. Institutional endowment funds are correlated with college selectivity (see National Association of College and University Business Officers 2011) and research suggests that per student expenditures on instruction, academic support, student services, and institutional support are higher at more selective universities by a magnitude of 1.5x to 2.0x (Gansemer-Topf and Schuh 2006). Higher levels of spending may include more resources focused towards career assistance and the labor market transition. Institutions may also provide different levels of access to connections and networking opportunities that may help their students obtain jobs (Katchadourian and Boli 1994; Rivera 2011; Useem and Karabel 1990). Elite firms spend more time and money at elite colleges (Cook and Frank 1993; Rivera 2011). Thus, access to social capital varies among different types of colleges and is likely correlated with selectivity.

The theory and research findings presented in this section suggest that graduates from highly selective colleges may benefit more in the labor market than graduates from less selective college. Either through greater human capital conferred, stronger signals of cultural capital conveyed, or more powerful social capital created at elite universities, I expect that these graduates will be more desirable on the job market. With the percentage of college graduates continually increasing, employers can afford to be even more discerning among college graduates, whether justified by job demands or not. We now know that (1) educational attainment affects labor market outcomes, (2) there are well defined reasons why this occurs, (3) there are clear racial differences among bachelor's degree holders, and (4) the expansion of higher education has increased the pool of job candidates for employers. In the next section, I turn to the limited existing research on the effect of college selectivity on labor market outcomes.

Prior Research on College Selectivity

In 2010, tuition and fees cost \$38,416 at Harvard University, the number 1 ranked national university by U.S. News and World Report (2011). By contrast, out-of-state tuition and fees at the 94th ranked University of Massachusetts-Amherst were a little over half that sum at \$20,307 (ibid). Are more selective schools like Harvard worth the additional cost? Surprisingly, some of the most recent survey research in this area suggests that they are not, at least in terms of an effect on income (Dale and Krueger 2002, 2011). Still, other results show that students at more selective colleges are more likely to graduate, more likely to attend graduate or professional programs, and earn higher wages on the labor market (Alon and Tienda 2005; Bowen and Bok 1998; Brand and Halaby 2006; Brewer and Ehrenberg 1996; Light and Strayer 2000; Zhang 2005).

Early research in this area typically uses broad categorical classification such as elite or prestigious schools and finds positive effects of college type on occupational status and income later in life for white men (Griffin and Alexander 1978; Morgan and Duncan 1979; Solmon and Wachtel 1975). More recent studies using similar categorical comparisons include more representative samples. One such study uses data from the National Longitudinal Study of the High School Class of 1972 (NLSHS72) and High School and Beyond to examine the effect of a degree from different colleges on wages (Brewer, Eide, and Ehrenberg 1999). The authors find significant positive effects on wages from attending elite and middle-tier private institutions and a limited effect from attending an elite public institution when compared to a bottom-tier public institution. Additionally, Monks (2000) finds a wage benefit to a degree from a research institution compared to a liberal arts university. However, not all research finds significant effects of college selectivity, suggesting that there may be difficulties in measuring returns in the labor market (see Dale and Krueger 2002, 2011).

Research that uses non-experimental data is subject to potential bias due to the correlation between unobserved factors that may influence both admission and attendance at selective colleges and the examined outcomes, such as graduation rates and wages (Foster and Rodgers 1979; Gerber and Cheung 2008). For example, student ability and motivation may be partially or completely unmeasured, but we may assume these variables are correlated with both a student's attendance at a more selective school and her success on the labor market. A student may choose not to go to a more selective college if she believes the eventual wage benefit will not outweigh the cost of tuition, leading to biased estimates in regression coefficients. Selection bias makes it difficult to determine if employers place different values on college degrees based on college selectivity.

More recent research continues to use non-experimental data while also using more sophisticated methodological techniques to address selection bias. Black and Smith (2004) primarily use occupational IQ (ASVAB) test scores to match similar individuals from different institutions using propensity scores and find that college selectivity has a positive effect on wages. However, the authors also note a number of difficulties in using this method with their data, particularly in matching attendees of non-selective colleges with high propensities to attend a highly selective college. Using a regression discontinuity design Hoekstra (2009) finds that white men who barely made the admissions cut-off at a flagship state university experience 20% higher wages than white men who barely missed the admissions cut-off. Dale and Krueger (2002) use the College and Beyond Survey (C&B) to examine wage returns 15 years after graduation. The authors find no effect of college selectivity when matching students based on institutions they were admitted to but did not attend. In a follow-up piece, Dale and Krueger (2011) include an additional cohort from the C&B and again find no effect of college selectivity on earnings in models adjusted for selection. Additional research that addresses selection bias

finds varying results on the existence and size of bias in non-adjusted OLS regression estimates examining the effect of college selectivity on wages (Behrman et al. 1996; Brand and Halaby 2006; Long 2008). Thus, although research that does not adjust for selection suggests that there is an effect of college selectivity on wages, the research that does adjust for selection presents mixed findings.

One recent qualitative study focuses on the employers and recruiters who are in positions to hire recent graduates (Rivera 2011). The author finds that nearly 80% of the employers she interviewed in top-tier firms use school prestige to weed out potential candidates. Additionally, these employers often mentioned that they only reviewed candidates from elite private schools. In some cases, firms had strong ties with specific elite schools, spending millions of dollars on recruitment activities and using a full time employee liaison at these schools. Additionally, Martin (2009) found some modest effects of social capital on graduating with honors, graduate school attendance, and occupational aspirations at one elite private university. Finally, one qualitative study found that students at an elite private university recognized and mentioned the importance of institutional networks in securing employment (Mullen 2010). This research suggests that, at least in some cases of elite schools, individuals may reap large benefits from both the signal of their degree and the social capital unlocked by their institution.

Thus, the literature on the effect of college selectivity on labor market outcomes is limited and the findings are mixed. I suggest four improvements in the present research to help illuminate the answers to a number of questions regarding horizontal stratification at the higher education level. First, after reconciling the previous findings with the EMI hypothesis, I chose to collect original data that accurately depicts the current labor market. Some of the most methodologically sophisticated work uses data on individuals who graduated from college in the early 1980s (Black and Smith 2004; Dale and Krueger 2002) and early 1990s (Dale and Krueger

2011). The EMI hypothesis suggests that the qualitative differences, such as college selectivity, may be more important now that college education is more widespread. Much like Lucas' 2001 work on tracking, the goal of the present research is not to explicitly test the EMI hypothesis. I cannot directly compare the effects of college selectivity in the present to the past. Rather, I cite the EMI hypothesis to suggest (1) why college selectivity might matter at all in the present and (2) why past research has failed to consistently find an effect of college selectivity with older cohort data. Second, I collect new data using a field experiment to preempt the selection bias inherent in survey research that other researchers attempt to address in a post-hoc analysis. Third, with this method I eliminate social capital as a potential mechanism of the effect of college selectivity on employment outcomes and focus on the signal of a credential. Fourth, I also control for direct measures of human capital that an employer has access to in the resume review process (i.e. college selectivity, GPA, employment history, extracurricular activities, and skills) to more definitively test discrimination as a explanation for racial differences. I address these final three issues in relation to the audit method in more detail in the next section.

Using Audit Studies to Examine Labor Market Outcomes

An audit study is a field experiment that matches two individuals with nearly identical characteristics to participate in a test of some outcome. Ideally, the only variation between the two individuals is on the characteristic(s) of interest (independent variable). The audit method takes on a few variations: in-person, correspondence, and computerized. In-person audits rely on trained assistants, armed with similar credentials and characteristics other than race, to pose as job or housing applicants, typically in examinations of discrimination (see Pager 2003; Yinger 1995). In correspondence audits, researchers respond by mail to advertisements (newspaper or otherwise) without face-to-face interaction in an attempt to eliminate the error of the human assistant component. Finally, scholars discuss computerized audits as an alternative to

correspondence audits to increase efficiency (Lahey and Beasley 2009). In each variation of the audit method, careful sampling and randomization of certain components along with matching on all potential important criteria between auditors allows researchers to observe specific differences in outcomes. To date, audit studies mostly have come in the form of the in-person type, with some use of correspondence studies and only a few recent occurrences of computerized audit studies (e.g. Ahmed and Hammarstedt 2008; Butler and Broockman 2011; Hogan and Berry 2011; Lauster and Easterbrook 2011).

Previous audit studies successfully examine labor market outcomes with a number of treatment variables such as criminal record, race, gender, sexual orientation, age, and quality of resume (e.g. Bertrand and Mullainathan 2004 and Pager 2007a). This type of research examines labor market outcomes by creating two job candidates with similar resumes or job applications. Researchers randomly select and apply for jobs with one of the two candidates receiving random assignment to the treatment (e.g. criminal record) and the other candidate receiving assignment to the control. Thus, researchers examine treatment effects and their moderators by comparing the rates of call-backs from employers.

Most uses of this method require human assistants, or auditors. Depending on the research, auditors drop off resumes, talk to other individuals, or are otherwise involved in the process. Although some scholars praise the in-person audit technique, it is not without its critics (Heckman 1998; Heckman and Siegelman 1993). Near the top of the list of critiques is the possibility that researchers are unable to control for important characteristics that differ between individual auditors. A computerized audit study alleviates many of the problems encountered by in-person audit studies, such as delays in speech, poise, etc., differences employers can witness and the researcher cannot. By removing the human element of the audit, researchers eliminate some potential measurement error. Unlike the correspondence or in-person methods, a

computerized audit study also closely mimics the real experience of college-educated job seekers today.

I aim to address three critical research questions regarding horizontal stratification using the first-ever computerized audit study to examine educational credentials and labor market outcomes: (1) Does college selectivity affect labor market success? (2) Does race affect labor market success among bachelor's degree holders? (3) Does race moderate the effect of college selectivity on labor market success? By using the audit method, I am able to carefully control the important variables that may affect employment outcomes and examine the contribution of each one individually. This eliminates the threats of omitted variable bias and selection. For instance, each job candidate's resume is created in a way so that I can examine the effect of college selectivity between a series of matched pair applicants while all other variables are equally controlled. An additional benefit of the audit method is that I can eliminate the potential mechanism of social capital in explaining the effect of college selectivity on labor market outcomes by only sending resumes to employers through impersonal channels. This is important because research has established employer-institution connections and institutional resources as explanations for the effect between college selectivity and labor market outcomes (Rivera 2011). Furthermore I can control for direct evidence of human capital differences (i.e. GPA, employment history, extracurricular activities, and skills), thus any effect of college selectivity suggests that employers infer something important that is indirectly communicated about the signal of a credential. As other researchers suggest (Ishida, Spilerman, and Su 1997) the effect of college selectivity at an individual's entry point into the labor market is likely driven mostly by the signaling effect. Similarly, the ability to control human capital differences by race implies that any effect of race is due to discrimination. Although other methods fall short, the audit

method presents a unique way to address questions important to scholars of education, race, labor markets, and discrimination.

DATA AND METHODS

Between April and July of 2011, I conducted a computerized audit study to examine the effect of college selectivity and its moderators on labor market success. To implement this experiment, I created resumes and cover letters for hypothetical job candidates and applied for jobs through a major national job search website. I created a series of candidate profiles by varying each candidate's listed college of attendance, college major, race, gender, social class, and geographic location. I then matched profiles and applied for jobs with two candidates per job listing. Black candidates from elite schools were matched with white candidates from less selective schools while white candidates from elite schools were matched with black candidates from less selective schools. In total, I used these candidates to apply to 1,008 jobs (or 2,016 total data points)

College Selectivity

To examine college selectivity, I first selected elite universities that ranked highly in both the U.S. News and World Report and Baron's rankings and paired these with a nationally ranked state university in the same state but below the elite university on the U.S. News and World Report rankings (U.S. News and World Report 2011). The pairs I used were: (1) Harvard and University of Massachusetts – Amherst, (2) Stanford and University of California – Riverside, and (3) Duke and University of North Carolina – Greensboro.² These choices in schools were driven by a few factors. First, I needed to be sure there was a reasonable distance in rankings between schools to capture any potential effect of selectivity while conforming to a limitation of the data (U.S. News and World Reports limits the numerical ranking of national universities to

² The exact National University Rankings from the U.S. News and World Report are: (1) Harvard, (5) Stanford, (10) Duke, (94) UMass-Amherst, (97) UC-Riverside, and (190) UNC-Greensboro.

200 schools). Second, prior research suggests the effect of selectivity may not be linear but may only come from the elite schools near the very top of the rankings.

Conveying Race through Names

Although in-person audits have the advantage of personal appearance to convey race, correspondence and computerized audits must rely on written information to convey race. A number of previous studies have used names as an indicator of race (Bertrand and Mullainathan 2004; Hogan and Berry 2011). However, scholars have raised concerns that racialized names may conflate race and social class and bias the results from an experiment (Fryer and Levitt 2004; Pager 2007b). To control for this potential confounder, I used data from New York births in the early 2000s to select names. The data I obtained separately list the total number of births by (1) name and race and (2) name and mother's education.

To search for possible names I limited the criteria to names with at least 50 births in a year in the state and at least 75% one particular race (black or white). I then chose from this list names across race and gender that were similar on mother's education so that I had three names for each race and gender combination representing three tiers of education levels (upper, middle, and lower). In total, I used 24 different names (3 black/male, 3 black/female, 3 white/male, 3 white/female). These names were: Jalen, Lamar, DaQuan, Nia, Ebony, Shanice, Caleb, Charlie, Ronny, Aubrey, Erica, and Lesly. Appendix Table A1 contains more information on the race and education composition of each name.

Resumes and Cover Letters

Following the methods of Bertrand and Mullainathan (2004), I next researched actual resumes on the job website to help me finish creating the information that I would use in my candidates' resumes. I focused my search on recent graduates to get information on the objectives, extracurriculars, typical work experience, and skills listed on real resumes. I used

these examples to write two short objective statements to use in my resumes. I decided to give candidates 4-5 activities in organizations (no dates listed) that were not exact, but similar. For example, if one candidate was listed as a member of a student business organization, the other candidate was listed as a member of a different student business organization. For each activity, I searched through the appropriate university's list of student organizations to verify that the organization existed on that campus. Additionally, candidates were assigned a small leadership role in two organizations (e.g. secretary treasurer, team leader). To avoid raising employers' suspicions of resumes that were too similar, I attempted to balance activities with skills: candidates with more activities listed fewer skills and vice versa. I assigned skills based on the frequently listed skills from resumes of their real peers (many technologically based) and in accordance with skills that would have reasonably been learned or used in the listed employment history and course information from cover letters (see below). Each candidate was also assigned an employment history that included work in typical part-time student jobs (e.g. salesperson, wait staff) and one internship position. Each employer is a real, local employer. I equalized the total time of employment across candidates.

The next step in creating my candidates was to compile this information into a believable resume. I used two basic style templates to create my resumes (each candidate could be assigned either template but each job never had two applicants with the same template). I then entered the pertinent information for each candidate into the resume template. I assigned a GPA based on the requirements listed for graduation with honors (cum laude) for each school. After I compiled this information into a basic resume, I created four possible options for each candidate/school combination: (1) template 1 with employment history 1, (2) template 1 with employment history 2, (3) template 2 with employment history 1, and (4) template 2 with employment history 2. Because these resumes were randomly assigned to each job posting, I use these small variations

in resumes to minimize experiment discovery but also control for employment history and template. Finally, I used two possible majors for each resume, economics and psychology, each one of the top choices by gender for men and women respectively (Carnevale, Strohl, and Melton 2011).

Next, I created cover letters and once again used real examples to guide me through this process. I created two different cover letters that I could assign to each candidate. The overall content of each cover letter was the same, but I altered the specific words, phrases, and order. Each cover letter contained information on college courses, leadership experience, skills, and an explanation that the candidate had recently relocated from their college town to a residence local to the employer. Due to the nature of the research, I was unable to extensively customize each cover letter specifically to the job, but I always included some custom information such as the company name and the reference code into each cover letter.

Completing Candidate Profiles

For each candidate/school combination, I established an individual telephone number associated with the proper area code, a voice mailbox, a Google e-mail account, and a mailing address. Each voice mailbox had the same recorded message with the candidate's name substituted in. I enlisted the aid of assistants to record identical messages using individuals of the corresponding race and gender of the fictitious applicant. I created e-mail accounts that contained the applicants name followed by a two to four digit random number. Because employers might be aware of differences in rental prices in local areas, I used Google to investigate apartments and select an address for each candidate. I chose one modest apartment complex in each city that was similar in market price across regions (using a cost of living adjustment calculator). I then assigned each candidate a real address with the exception that the specific apartment number does not exist.

Job Search, Sampling, and Submission Processes

I implemented a computerized audit study by programming and testing computer scripts to automate the data collection process. Two scripts queried the job search website to pool and record information about available jobs. Within each region, the sampling frame was limited to jobs that required some college, were listed as “entry level” or “student”, were posted in the past 30 days, and were located within a 50 mile radius of the region's “host” cities. Additionally, I eliminated jobs that required specialized degrees or training (such as nursing, engineering, etc.).

I created an additional script to select jobs and assign two matched candidate profiles (e.g. a black graduate from a highly selective school and a white candidate from a less selective school) to each job. Candidates were matched in a way that race and college selectivity are directly comparable. College major was randomly assigned but each matched pair listed the same major. Resume type and cover letter type were also randomly assigned but each matched pair incorporated distinct values. Appendix Table A2 shows the basic matrix of matched candidate assignments.

Once jobs and candidates were matched for a particular geographic region, I applied for 240 jobs (2 candidates per job) in their home region (e.g. Boston and New York City for Harvard and UMass graduates) and 96 jobs in one of the two outside regions (e.g. Los Angeles and San Francisco). Thus, in total I applied for approximately 1,008 jobs or 2,016 data points. I then waited for approximately 3 months after the submission of each application for employers to make decisions and call or e-mail candidates with requests for an interview before concluding the data collection phase.

RESULTS³

³ Although response rates vary by both social class and gender within racial categories, examination of those results is beyond the scope of this article (see Gaddis 2012). Both the design of the audit method and the logit regressions control for these characteristics to avoid biased coefficients.

Table 1 shows the descriptive statistics for all known successfully submitted job applications from the original sample. Out of the 1,008 selected jobs, 103 job listings were removed prior to successful submission of either the first or the second applicant's resume and cover letter. Since these cases represent non-matched pairs (either 0 or 1 successful submission), I removed all 103 cases from the analysis, or approximately 10% of the original job sample.

Employer Responses by Education and Race

Employers responded to job applications from candidates in one of three ways: email, phone, or both. Employers used email to solicit additional information or to setup a time for a phone or in-person interview. When employers called candidates, they almost always explicitly requested an interview, although voicemails were occasionally vague about whether an intermediate step was required (such as an online questionnaire). Generally, emails seemed less urgent and gave employers more power in the relationship (e.g. "Please fill out this questionnaire if you wish to still be considered for this position.") but phone calls seemed more urgent and gave candidates more power in the relationships (e.g. "We would love to hear back from you as soon as possible with a time that works best for you."). Employers made multiple attempts to contact candidates in 16.1% of phone responses compared to 3.7% of email responses.

In Table 2, I examine the number of email, phone, both, and total employer responses by college selectivity. Candidates from elite colleges received more email responses than candidates from less selective colleges at a rate of approximately 1.44 to 1 (8.73% vs. 6.08%). Moreover, phone responses from employers show an even greater difference of 1.86 to 1 (10.72% vs. 5.75%). If we examine the results of either an email or phone response from employers, candidates from elite colleges are 1.7x as likely to get a response as candidates from less selective colleges (15.25% vs. 8.95%). In all of these three cases, a one-sample two-tailed t-test for proportions shows that these results are significantly different between candidates from

elite colleges and candidates from less selective colleges ($p < 0.05$ for email; $p < 0.001$ for phone or either response).

Table 3 reports the same outcomes for white versus black candidates. White candidates received more email responses than black candidates at a rate of approximately 1.48 to 1 (8.84% vs. 5.97%). Similarly, white candidates received more phone responses from employers than black candidates at a rate of approximately 1.61 to 1 (10.17% vs. 6.30%). If we examine the results of either an email or phone response from employers, white candidates are 1.5x as likely to get a response as black candidates (14.59% vs. 9.61%). In all of these three cases, a one-sample two-tailed t-test for proportions shows that these results are significantly different between white and black candidates ($p < 0.05$ for email; $p < 0.01$ for phone or either response). Moreover, when both white and black candidates were contacted by the same employer, black candidates experienced a longer wait time between responses (3.6 days longer) than white candidates. In other words, employers gave white candidates more time to respond before moving on to contact black candidates, but more quickly moved on to white candidates after failing to hear back from black candidates.

In Table 4, I examine employer responses across race and college selectivity combined. In two cases (I.e. white elite university candidate vs. black less selective university candidate and black elite university candidate vs. white less selective university candidate) I use a one-sample t-test because it is a direct comparison of matched pairs. In the other two cases I use a two-sample t-test because it compares cases across different job samples. These results suggest a tiered pattern of responses: white candidates from elite universities have the highest response rate, followed by black candidates from elite universities and white candidates from less selective universities (these two categories are never statistically different), and finally black

candidates from less selective universities have the lowest response rate. Figure 1 shows this pattern visually for total responses (either phone or email).

Although these results suggest important differences in the return to a college degree by race, one important area of inquiry remains regarding employer responses: an interaction between race and college selectivity. In other words, do whites or blacks gain more from a degree from an elite university over a degree from a less selective university? The email response ratio for white candidates from an elite university vs. a less selective university is 1.28 (9.80% / 7.85%), although not significantly different. The same ratio for black candidates is 1.75 (7.62% / 4.36%) and is significant at $p < 0.05$. The phone response ratio for white candidates from an elite university vs. a less selective university is 1.91 (13.29% / 6.95%) and is significant at $p < 0.01$. The same ratio for black candidates is 1.76 (8.07% / 4.58%) and is significant at $p < 0.05$. Finally, the total response rate for white candidates from an elite university vs. a less selective university is 1.54 (17.65% / 11.43%) and is significant at $p < 0.01$. The same ratio for black candidates is 1.95 (12.78% / 6.54%) and is also significant at $p < 0.01$. These ratios present mixed results about an interaction between race and college selectivity.

As a complimentary analysis, Table 5 presents logistic regressions predicting employer responses. In each regression, I control for gender, class, region, submission number, resume template, cover letter, and major. Model 1 for each dependent variable (email, phone, or total) shows separate odds-ratios for black and less selective variables while model 2 includes an interaction effect. These results confirm that black candidates are 62% as likely to receive any employer response to a job application as white candidates and candidates from less selective universities are 55% as likely to receive any employer response to a job application as candidates from elite universities. However, in no case is the race*college selectivity interaction significant. Thus, although there are significant differences in response rates among these four types of

candidates (see Table 4), the gain from a college degree from an elite college university over a college degree from a less selective university is not significantly different for blacks than whites.

Posted Salary of Jobs by Education and Race

A final way to examine the issue of race and college selectivity is to use the salary information that is listed in 30% of the job listings (271 out of 905). Of the job postings that included salary information, most listed a range (e.g. \$30,000 - \$37,500), although some listed a single number (e.g. \$30,000). I created three variables (low, mean, and high) for each job posting's salary range. I then used these salary variables as the outcomes in OLS regression models using only the cases in which candidates received a response (email or phone) and the job posting had a listed salary range (n = 89). Table 6 shows the results of these regression models. In two of the three models, the results suggest that black candidates receive responses for jobs with significantly lower posted salary ranges (\$3000-\$3600 less than white candidates). In only the model predicting the low end of the posted salary range, candidates from less selective universities receive responses for jobs with a lower posted salary, although the coefficient is only significant at $p < 0.10$. Additional models with interactions between race and college selectivity do not show significant results.

Employer Sentiment about Elite Schools

Beyond employer contact with candidates about interviews or for more information, employers exchanged internal emails amongst themselves. In thirteen cases, employers accidentally included candidates on correspondence that was intended for other employees of the company, presumably in the human resources department. Most of these emails were forwarded versions of the brief email that is sent to employers with limited candidate information notifying them of a new application. Typically, the sender included a sentence indicating that the intended

recipient should examine this candidate. In five cases, these messages explicitly mentioned the institution from which a candidate graduated in an excited or urgent tone:

“ok, she had me at [elite university name]. Eat our dust [competitor's name].”

“forget the others: [ELITE UNIVERSITY NAME] GRAD”

“Kids coming out of [elite university name] are by far the most capable. Push this one to the top of the list.”

“[elite university name] guy wants to work for us!”

“We had a real bright app pop up this morning – [elite university name] grad with great credentials.”

These emails provide qualitative insight into the importance employers place on degrees from elite universities. In zero of the thirteen cases did an employer explicitly mention one of the less selective universities.

DISCUSSION

Although our society subscribes to the notion of education as the great equalizer, we implicitly recognize the important stratifying process of college selectivity through the desire to send our children to the most elite universities. With higher education credentials becoming more common in the labor market, examining labor market outcomes among individuals with a college degree is critical to understanding education's role in reducing or exacerbating inequalities. Yet prior research has failed to adequately address how much obtaining a degree from an elite institution results in additional gains in the labor market. In perhaps an even more important debate, human capital theory suggests that college selectivity is a major reason for racial difference in employment outcomes while other scholars cite continued racial

discrimination as an independent cause. These issues provide substantial reason to explore the effects of college selectivity and racial differences among credential holders from the same institutions.

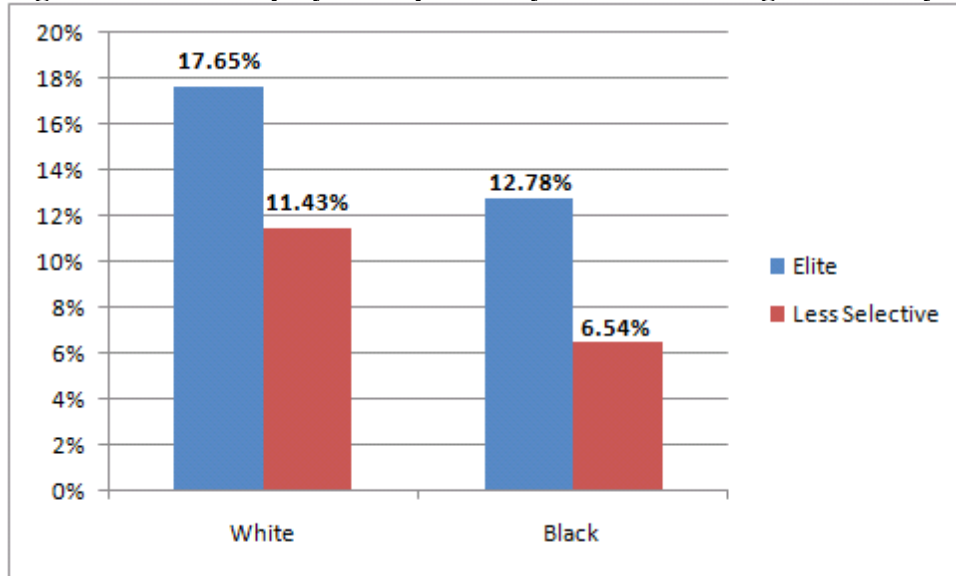
This research suggests that the name of the institution on a degree carries a lot of weight in the labor market. Furthermore, the opportunities that arise upon graduation from an elite college are not equal between whites and blacks. Although there is clearly a premium to a degree from an elite university over a less selective university for both white and black candidates, black candidates still lag behind white candidates in employer responses. Surprisingly, the black-white gap in employment outcomes is similar between graduates of elite universities and graduates of less selective universities. Additionally, the job opportunities that become available for black candidates have lower starting salary ranges. Due to the tightly controlled nature of the experimental method used in this study, these results strongly suggest that racial discrimination is still a serious concern in the labor market, even among graduates from elite universities.

These findings refute some of the most recent and methodologically advanced research using survey data on college selectivity. The effectively maintained inequality hypothesis may explain these differences. Prior research has focused on the employment outcomes of older cohorts of college graduates, but as the percentage of bachelor's degree holders has increased, college selectivity may be a more important signal than just simply obtaining a college degree. Advantages of the audit method over survey research may also explain the differences in findings. This research is free from the selection bias that plagues previous survey research, circumvents social capital as an explanation for the effect of college selectivity, and controls for a number of important human capital variables. Thus, the college selectivity effect focuses on what the credential signals to employers.

The results presented here suggest a different picture than the romanticized idea of the U.S. as a post-racial society as well as the notion that education is the great equalizer. On a number of quantitative and qualitative aspects, blacks are at a disadvantage compared to their white peers. Essentially, the effect of race for blacks works similarly as the effect of college selectivity for whites. However, while both whites and blacks can alter their educational trajectories and improve their college selectivity, blacks can never shed the penalty of race and catch up to whites.

My research addresses the gaps in our knowledge of horizontal stratification and raises a number of important issues. The results suggest that other scholars should be more cautious when measuring any college education as one category of a variable. Although this research only tests employment outcomes at the entry-level stage, college selectivity may be important at other stages of employment and for other important life outcomes. Furthermore, education, even an elite education, does not erase racial inequality at the most preliminary stages of employment. Other research finds that racial inequality in the labor market increases over the career, suggesting that future research should examine whether graduating from an elite university may help to attenuate or exacerbate inequalities over time. This research stands to potentially improve this situation by drawing media and employer attention to the stark racial differences in employment prospects among individuals with the same college degree. Overall, my research contributes to our theoretical and empirical understanding of the possibilities and limits of education in reducing social inequality.

Figure 1. Total Employer Responses by Race and College Selectivity



Note: The total response rate for white candidates from elite universities is significantly different from all other categories at a minimum of $p < 0.05$. The total response rate for black candidates from less selective universities is significantly different from all other categories at a minimum of $p < 0.05$. The total response rates for black candidates from elite universities and white candidates from less selective universities are not significantly different from each other. See Table 4 for full results.

Table 1. Descriptive Statistics

	Candidate 1		Candidate 2	
	N	% (mean)	N	% (mean)
White	450	49.72%	455	50.28%
Black	455	50.28%	450	49.72%
Elite College	456	50.39%	449	49.61%
Less Selective College	449	49.61%	456	50.39%
Male	448	49.50%	448	49.50%
Female	457	50.50%	457	50.50%
Upper Class	303	33.48%	303	33.48%
Middle Class	293	32.38%	293	32.38%
Lower Class	309	34.14%	309	34.14%
Southeast	296	32.71%	296	32.71%
Northeast	307	33.92%	307	33.92%
California	302	33.37%	302	33.37%
Home Region	626	69.17%	626	69.17%
Out of Region	279	30.83%	279	30.83%
Major - Economics	456	50.39%	456	50.39%
Major - Psychology	449	49.61%	449	49.61%
Listed Salary - Low	271	\$31,175.87	271	\$31,175.87
Listed Salary - Mean	271	\$35,944.98	271	\$35,944.98
Listed Salary - High	271	\$40,714.08	271	\$40,714.08
Response - Email	66	7.29%	68	7.51%
Response - Phone	73	8.07%	76	8.40%
Response - Email + Phone	30	3.31%	34	3.76%
Response - Either	109	12.04%	110	12.15%
Removed	103	10.22%	103	10.22%
N	905	89.78%	905	89.78%

Table 2. Employer Responses by College Selectivity

	Elite	Less Selective	Ratio
Email	79 / 905 (8.73%)*	55 / 905 (6.08%)*	1.44
Phone	97 / 905 (10.72%)**	52 / 905 (5.75%)**	1.86
Both	38 / 905 (4.20%)	26 / 905 (2.87%)	1.46
Total (either response)	138 / 905 (15.25%)**	81 / 905 (8.95%)**	1.70

Note: * denotes the proportion is significantly different from the other college category using a one-sample two-tailed t-test for proportions. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3. Employer Responses by Race

	White	Black	Ratio
Email	80 / 905 (8.84%)*	54 / 905 (5.97%)*	1.48
Phone	92 / 905 (10.17%)**	57 / 905 (6.30%)**	1.61
Both	40 / 905 (4.42%)*	24 / 905 (2.65%)*	1.67
Total (either response)	132 / 905 (14.59%)**	87 / 905 (9.61%)**	1.52

Note: * denotes the proportion is significantly different from the other race category using a one-sample two-tailed t-test for proportions. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4. Employer Responses by Race and College Selectivity

	Elite	Less Selective	Selectivity Ratio
Email			
White candidate	45 / 459 (9.80%) ^{b1}	35 / 446 (7.85%) ^{a2}	1.25
Black candidate	34 / 446 (7.62%) ^{a1}	20 / 459 (4.36%) ^{b1, a1,a2}	1.75
Race Ratio	1.29	1.80	
Phone			
White candidate	61 / 459 (13.29%) ^{c1,a1,b1}	31 / 446 (6.95%) ^{b1}	1.91
Black candidate	36 / 446 (8.07%) ^{a1,a2}	21 / 459 (4.58%) ^{c1,a2}	1.76
Race Ratio	1.65	1.52	
Both			
White candidate	25 / 459 (5.45%) ^{a1,z1}	15 / 446 (3.36%)	1.62
Black candidate	13 / 446 (2.91%) ^{z1}	11 / 459 (2.40%) ^{a1}	1.21
Race Ratio	1.87	1.40	
Total (either response)			
White candidate	81 / 459 (17.65%) ^{c1,a1,b1}	51 / 446 (11.43%) ^{b1,a2}	1.54
Black candidate	57 / 446 (12.78%) ^{a1,b2}	30 / 459 (6.54%) ^{c1,b2,a2}	1.95
Race Ratio	1.38	1.75	

Note: Significance tests between white elite college vs. black less selective college or black elite college vs. white less selective college use a one-sample two-tailed t-test for proportions (same job samples). Other significance tests use a two-sample two-tailed t-test for proportions (different job samples). Superscript letters and numbers match significantly different categories (e.g. a1 and a1 match together).

$z = p < 0.10$, $a = p < 0.05$, $b = p < 0.01$, $c = p < 0.001$

Table 5. Logistic Regression Predicting Employer Responses

	Email		Phone		Total	
	(1)	(2)	(1)	(2)	(1)	(2)
Black	0.655*** (0.083)	0.763 (0.183)	0.594*** (0.087)	0.570* (0.127)	0.622*** (0.070)	0.683* (0.129)
Less Selective	0.677** (0.086)	0.787 (0.189)	0.506*** (0.076)	0.484** (0.113)	0.545*** (0.063)	0.601** (0.117)
Black*Less Selective		0.691 (0.322)		1.122 (0.475)		0.785 (0.287)
N	1810	1810	1810	1810	1810	1810

Note: Odds-ratios shown. All regressions also control for gender, class, region, submission number, and major. Cluster-corrected (job level) standard errors in parenthesis.

* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

Table 6. Regression Predicting Posted Salary Range of Job

	Mean	Low	High
Black	-3576.15* (1590.60)	-3039.66** (1098.54)	-4112.63 (2487.03)
Less Selective	-1850.03 (1601.04)	-2222.01+ (1285.25)	-1478.05 (2185.42)
Constant	37676.75***	35239.32***	40114.18***
N	89	89	89

Note: Cases represent those applicants receiving either an email or phone response. All regressions also control for gender, class, region, submission number, and major. Cluster-corrected (job level) standard errors in parenthesis.

* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

Appendix

Table A1. Names by Race and Education

	% Black	% White	% =< HS	% >= Some College
Jalen	78.7%	18.7%	41.1%	58.9%
Lamar	86.1%	12.7%	69.2%	30.8%
DaQuan	87.3%	12.7%	90.1%	9.9%
Nia	84.4%	14.3%	38.8%	61.2%
Ebony	75.1%	24.9%	62.5%	37.5%
Shanice	92.9%	7.1%	82.1%	17.9%
Caleb	10.6%	84.0%	39.0%	61.0%
Charlie	10.2%	85.4%	64.2%	35.8%
Ronny	2.8%	91.7%	85.8%	14.2%
Aubrey	12.7%	83.6%	41.6%	58.4%
Erica	13.6%	76.7%	56.7%	43.3%
Lesly	7.7%	91.5%	87.1%	12.9%

Table A2. Audit Design Matrix

Candidate 1					Candidate 2				
ID #	Race	Gender	Social Class	College Select.	ID #	Race	Gender	Social Class	College Select.
1	B	M	U	E	16	W	M	U	LS
2	B	M	M	E	17	W	M	M	LS
3	B	M	L	E	18	W	M	L	LS
4	B	M	U	LS	13	W	M	U	E
5	B	M	M	LS	14	W	M	M	E
6	B	M	L	LS	15	W	M	L	E
7	B	F	U	E	22	W	F	U	LS
8	B	F	M	E	23	W	F	M	LS
9	B	F	L	E	24	W	F	L	LS
10	B	F	U	LS	19	W	F	U	E
11	B	F	M	LS	20	W	F	M	E
12	B	F	L	LS	21	W	F	L	E
13	W	M	U	E	4	B	M	U	LS
14	W	M	M	E	5	B	M	M	LS
15	W	M	L	E	6	B	M	L	LS
16	W	M	U	LS	1	B	M	U	E
17	W	M	M	LS	2	B	M	M	E
18	W	M	L	LS	3	B	M	L	E
19	W	F	U	E	10	B	F	U	LS
20	W	F	M	E	11	B	F	M	LS
21	W	F	L	E	12	B	F	L	LS
22	W	F	U	LS	7	B	F	U	E
23	W	F	M	LS	8	B	F	M	E
24	W	F	L	LS	9	B	F	L	E

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