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What Role May Admissions Office Diversity and Practices Play in Equitable Decisions?

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Abstract Attending a selective college or university has a notable impact on the likelihood of graduation, graduate school attendance, social networks, and career earnings. Given these short-term and long-term benefits, surprisingly little research has directly explored the factors that might promote or detract from equitable admissions decisions at these schools. This study examined a unique national sample of 311 undergraduate admissions officers who work at selective institutions to explore this issue. Among the descriptive findings, more than half of respondents reported that they consider applicants' demonstrated interest in attending their institution when making a recommendation, about two-thirds review at least 100 applications during busy weeks, and almost half were working at their alma mater. Moreover, in a simulation of admissions scoring, admissions officers from historically underrepresented groups were more likely to admit low-SES applicants, whereas participants with more work experience and who were employed at their alma mater provided less equitable recommendations.

Keywords College admissions · College access · Equity · Decision making · Socioeconomic status

Introduction

Institutional selectivity and admissions competition has increased dramatically in recent years, resulting in continued stratification of college opportunity by race and class (Bastedo and Jaquette 2011; Posselt et al. 2012). While students from high-SES families are overrepresented at selective institutions, low-income undergraduate students are more

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likely to attend community colleges and for-profit colleges irrespective of academic ability, achievement, and expectations (Astin and Oseguera 2004; Carnevale and Strohl 2013; Saenz et al. 2007). Given the low graduation and transfer rates at these institutions (Bowen et al. 2009; Long and Kurlaender Long and Kurlaender 2009), institutional context is a major contributor to the low bachelor's degree attainment rates of low-SES students (Bailey and Dynarski 2011).

In an increasingly competitive job market, institutional prestige also serves as a powerful differentiator among degree holders. Students who graduate from highly-selective institutions have greater lifetime earnings, deeper professional networks, and are more likely to enroll in graduate education (Bound et al. 2009; Brewer et al. 1999; Thomas and Zhang 2005). Research also suggests that these benefits are intensified for high-achieving, low-income, and minority students (Bowen and Bok 1998; Dale and Krueger 2011; Espenshade and Radford 2009). As a result, understanding the effects of the admissions office on decisions to admit underrepresented students is crucial, particularly given contemporary discussion and debates about increasing low-income student representation at selective colleges.

We examine these developments in the context of the diffusion of holistic admissions practices at highly-selective colleges. Holistic admissions is a poorly defined concept, and admissions officers use a range of definitions, from simply reading the whole file, to considering the applicant as a whole person, to considering that applicant in family and school context (Bastedo et al. 2017). For our purposes, holistic admissions is defined as evaluating prospective students in the context of the educational, personal, and financial conditions experienced by the applicant (Bastedo and Bowman 2017; College Board 2012; Lucido 2014). In light of a highly unequal and segregated school system, contextual evaluation of student performance is critical for several reasons. First, students do not have equal access to college preparatory curricula. For instance, students in rural high schools, underrepresented minorities, and lower-SES students are less likely to have access to Advanced Placement (AP) courses (Attewell and Domina 2008; Klopfenstein 2004; Perna 2004). Students from affluent families or those who attend private high schools also have better access to college counselors, private tutors, and test preparation services (Buchmann et al. 2010; McDonough 1994). Lastly, high schools' college-going climates also have substantial influence on whether students enroll in college and the types of schools students perceive as within reach (Holland 2014; McDonough 1994, 1998; Roderick et al. 2011). Admissions offices often have poor information on high school contexts (Bastedo 2014), but they will make more equitable admissions decisions when provided with robust information on high school contexts (Bastedo and Bowman 2017).

To further understand the role of the admissions office in equitable access to selective colleges, this paper examines the extent to which admissions office structure and diversity predict the scoring of low-SES and high-SES college applicants. We use the results of a unique national study, in which 311 working admissions officers read simulated files to determine their propensity to admit low-SES applicants and their higher-SES counterparts. We examine how elements of admissions office structure, practices, and diversity predict these admissions decisions. Thus, this study provides an unusual opportunity to look systematically inside of the decision-making process of selective college admissions, exploring how variations in admissions offices may have an influence on access and equity in higher education.

Literature and Framework on Undergraduate Admissions

Practices inside the undergraduate admissions office—in particular, how decisions are made—have often been the "black box" of access to selective colleges and universities. Thankfully, we can draw important insights from prior ethnographic work inside the admissions process (Karen 1990; Posselt 2016; Stevens 2007), histories (Duffy and Goldberg 1997; Karabel 2005; Synott 1979; Wechsler 1977), and journalistic accounts (Steinberg 2002). This work highlights a great deal of pressure on undergraduate admissions officers to meet institutional goals, particularly to increase revenue and prestige. These goals rarely lead to practices that improve socioeconomic diversity (Astin and Oseguera 2004).

Further insights can be gleaned from surveys of admissions officers by the National Association for College Admissions Counseling (NACAC) and the American Council on Education (ACE). Admissions offices report significant differences in the criteria used to evaluate applications and in the structure of admissions offices personnel and careers (Clinedinst 2015). Although there is a great deal of turmoil in the admissions and enrollment management sector in recent years, the Fisher v. University of Texas (2013) decision seemed to change relatively little in admissions offices practices (Espinosa et al. 2015). Admissions office practices can be highly idiosyncratic, with variation in practices that is disconnected from evidence on effectiveness, such as the connection between admissions criteria and student success, or equity considerations (College Board 2012).

Conceptually, we draw upon the extant research on employee hiring, which is the organizational literature that is most analogous to the admissions process. We draw specifically on the idea of homophily, the idea that interpersonal similarity breeds connection; this tendency that is particular true for connections based upon personal identities, such as race, gender, education, and social class (McPherson et al. 2001). Homophily can have positive effects on trust, belonging, and other factors through social networks, but it also can result in higher degrees of segregation and stratification of equity and opportunity. These dynamics are particularly apparent in the hiring process, which has a robust literature (e.g., Fernandez and Weinberg 1997; Pager and Shepherd 2008). Without structured protocols, the hiring process of selective college graduates can be conducted as a kind of "cultural matching" where candidates are sought who are most similar to themselves in terms of identity, self-presentation, and personal experiences (Rivera 2012).

Although the hiring and homophily literature can provide insights, it remains virtually unknown how admissions officers think about diverse backgrounds in the undergraduate admissions process, particularly with respect to social class. Theoretically, holistic admissions should consider social class as one context of an applicant's background (Lucido 2014), but fidelity to holistic admissions practices seems to be lower than anticipated (Bastedo et al. 2016), and admissions officers report unclear understandings of holistic admissions when asked to define it (Bastedo et al. 2017). Efforts to promote class-based affirmative action, such as the interesting experiment in Colorado (Gaertner and Hart 2013), are not yet reflected by preferences for low-SES applicants nationally, with the number of low-income students at selective public colleges actually falling in recent years (Leonhardt 2017). And how admissions decisions may differ by admissions officer characteristics, such as their own race, gender, or social class, is completely unexplored due to a lack of publically-available data.

However, given the frameworks and findings on hiring and homophily, we might expect that admissions officers will hold a more favorable view of applicants who share their

identity or background. In particular, admissions officers who are people of color, who are women, and who have lower parental education may be more likely to admit an applicant from an underrepresented demographic group. In turn, admissions officers who are white, male, and have higher levels of parental education may show implicit preferences for higher-SES and candidates from other majority groups who have stronger decontextualized credentials.

Drawing upon this prior work, we seek to answer the following questions to provide an understanding of admissions offices more generally and predictors of admissions decisions specifically:

1. What are the characteristics of admissions offices and officers at selective colleges and universities?
2. How do these characteristics vary by institutional selectivity?
3. To what extent do characteristics of admissions offices and officers predict their admissions recommendations?
4. To what extent do these characteristics predict differential ratings of low-SES and higher-SES applicants?

Method

Participants

Participants were 311 admissions officers at 174 colleges or universities that are within the top three tiers of Barron's (2012) selectivity ratings. These participants were recruited from attendees of the 2014 annual meeting of National Association of College Admissions Counseling (NACAC). In addition, the leadership of College Admissions Collaborative Highlighting Engineering and Technology (CACHET), a subgroup within NACAC, encouraged its members attending the annual meeting to participate. We obtained a list of registered attendees several weeks before the conference that included attendees' institutions and job titles, so we limited invitations to those who worked at a selective college or university and whose job title implied that they would regularly review applications (e.g., directors of enrollment management at large institutions, whose responsibilities generally involve managing other employees and working with university administrators, were not invited). Of these attendees, 1017 were admissions officers at an institution in the top three Barron's categories. Invitations were sent to admissions officers to recruit them to participate in person at the annual meeting. Because power analyses suggested that the initial number of participants would be insufficient to identify the expected effects, we recruited additional attendees to participate online several weeks after the conference; these admissions officers were from the same pool of conference attendees who met the original inclusion criteria. The in-person administration was used initially, because it made providing compensation easier (all participants received $50 gift cards), and the principal investigators would be available to answer any questions in real time. Of the 311 participants, 57% were female, 73% were White/Caucasian, 8% were Black/African American, 7% were Latino/Hispanic/Chicano, 3% were Asian American/Pacific Islander, 2% were from "other" racial/ethnic groups, and 7% were multiracial/multiethnic.

Materials and Procedure

A pilot survey was conducted to ensure that participants understood the protocol and to obtain feedback on questions regarding admissions office practices, admissions officer demographics, and other measures. We pilot tested the survey with six admissions officers at the 2014 annual conference of the Michigan Association of College Admissions Counseling (MACAC). These participants were recruited from the attendee list provided by MACAC, and only admissions officers from selective colleges participated (they also received a $50 gift card as compensation). The participants gave crucial information on how information on high school context is used in their admissions offices, how to simulate admissions files so that they were appropriate for the selectivity group, and a number of logistical issues.

For the in-person data collection for the primary study, participants entered a room in the conference center, were seated at one of the computers, and were given a paper consent form to sign. Fully online participants viewed and completed the consent form on the first page of the online survey. Besides these differences, the procedure for all participants was identical. Admissions officers were informed that they would review three simulated admissions files and that they should use the same standards and criteria that they would use when reading files at their own institution. Participants were then presented simulated admissions files for three applicants (the order in which the applications were viewed was randomized to avoid potential order effects). For each application, participants read information about the applicant's high school, academic qualifications (i.e., unweighted and weighted high school GPA, number of honors/AP courses taken, scores for each section of the SAT and/or ACT (including composite ACT), examinations and scores, and the names and grades of all academic courses during their 4 years), extracurricular activities, and personal statement. One applicant had strong academic credentials (in terms of high school grades, difficulty of coursework, and standardized test scores) and attended an upper-middle-class high school. Another applicant also attended an upper-middle-class high school, but his grades, coursework, and standardized test scores were all lower than those of the first applicant. A third applicant received good grades and took among the most difficult courses offered at the lower-SES high school that he attended, but his courses were less advanced and his standardized test scores were lower than those of the most qualified applicant. The grades, coursework, and test scores were adjusted across selectivity tiers so that these hypothetical applicants could be reasonably competitive at institutions with very different admissions standards. For a detailed discussion of the creation of these files, see Bastedo and Bowman (2017).

Within the online survey, each of the application sections was presented on a separate page, and participants were allowed to go back to earlier pages if they desired. Participants provided ratings of the quality of academic record, extracurricular activities, and personal statement at the end of the corresponding page with that information. Because admissions recommendations can vary notably depending upon the race/ethnicity and gender of applicants (Bielby et al. 2014; Posselt et al. 2012) and the college or major to which they apply (Bastedo and Bowman 2017), these attributes were identical across applications. Specifically, the top of the page with the academic profile stated the applicant's sex (male), race/ethnicity (White/Caucasian), U.S. citizenship (yes), college (engineering), and father's and mother's education (both had master's degrees for the higher-SES, high achieving applicant; doctorate and master's for the higher-SES, middle-achieving applicant; and high school diploma and some high school for the low-SES applicant). After

reading all sections of a given application, participants also provided their admissions recommendation if that applicant had applied to the institution at which they work. When all three admissions files had been read and scored, participants provided information about their admissions office practices and their own demographics and work experience.

Measures

The primary dependent variable for the multivariate analyses was an ordinal measure of admissions recommendation (1 = deny, 2 = wait list, 3 = accept). Because many students who are placed on wait lists at selective institutions are never ultimately accepted (Clinedinst 2015), a binary acceptance outcome (0 = deny or wait list, 1 = accept) was also examined.

Several participant attributes were used as predictors, including sex (0 = male, 1 = female), race/ethnicity (given the small sample sizes for some groups, this was combined into a single dichotomous indicator in which 0 = White/Caucasian, 1 = person of color), parental education (1 = elementary school, to 9 = graduate degree), experience working in admissions (1 ≤ 1 year, to 7 = 21 years or more), and whether they were working at the same institution from which they received their bachelor's degree (0 = no, 1 = yes). Institutional attributes included dummy-coded variables for being in Barron's tier 2 (highly competitive) and tier 3 (very competitive), with tier 1 (most competitive) as the referent group.

Dichotomous admissions office indicators (0 = no, 1 = yes) were used to indicate whether applicants' demonstrated interest in the school (e.g., through campus visits) is considered in the admissions decision, whether admissions officers have to write a paragraph explaining their admissions recommendation, whether there is a minimum cutoff below which a candidate has virtually no chance of admission, and whether there is a maximum cutoff above which a candidate is virtually assured of admission. Additional variables included the quality of high school information that their institution usually receives (1 = very poor, to 6 = excellent). Participants also reported whether they were the sole decision maker on an application; the four categories from which they could choose were "yes, always," "only when I recommend admitting the student," "only when I recommend denying the student," and "no, never." For inclusion in multivariate analyses, these four categories were recoded into a three-point ordinal scale (0 = no, 1 = sometimes, 2 = yes). The number of applications that the participant reads per week in a busy time period was assessed through open-ended responses. A few participants reported ranges (e.g., 100–125); when this occurred, the median was computed and used (e.g., 112.5). Given the skewed distribution of this variable, a natural-log transformation was employed for inclusion in statistical analyses. Participants were also asked to select the most important piece of information for determining academic merit (coursework rigor, high school GPA, class rank, and test scores). Because few participants selected class rank, this group was combined with high school GPA into one dummy variable within multivariate analyses; test scores constituted another dummy variable, and coursework rigor served as the referent group.

Analyses

First, frequencies were computed to provide an overview of the characteristics of admissions officers and admissions office practices at selective colleges and universities. Second, chi square analyses and analyses of variance were conducted to examine differences in

these admissions office characteristics across institutional selectivity tiers. Third, ordinal logit regression analyses were conducted to explore predictors of admissions recommendation for each applicant. Independent variables included participants' sex, race/ethnicity, parental education, admissions work experience, and employment at their alma mater; institutional selectivity; and the admissions office characteristics of consideration of applicants' demonstrated interest, requirement that officers write a paragraph explaining their decision, use of (virtual) minimum and maximum admissions cutoffs, whether the officer is the sole decision maker, quality of high school information in applications, number of applications read during busy weeks, and the most important factor for determining academic merit. Variance inflation factors were below 2.5 for all variables (and below 1.4 for all predictors except institutional selectivity), so multicollinearity did not appear to be a problem. These analyses also satisfied the parallel lines assumption of ordinal logit regression analyses (Long 1997).

Fourth, to determine whether the predictors of admissions recommendations differ for low-SES versus higher-SES applicants, multilevel analyses were conducted with admissions recommendations for applicants (level 1) nested within participants (level 2). Hierarchical generalized linear modeling (HGLM) analyses were used to predict the non-continuous admissions recommendations; HGLM is analogous to multilevel ordinal and logistic regression analyses (treating each of the respective outcomes appropriately). Considerable variation in these outcomes occurred across participants, as indicated by the intraclass correlation coefficients for the ordinal admissions outcome (.32) and the binary acceptance outcome (.24). These figures are well above the suggested value of .05 that typically necessitates multilevel modeling (Heck and Thomas 2009; Porter 2006).

The use of HGLM in this study is different than most research in higher education and other social sciences. Multilevel modeling is often employed to examine participants (at level 1) who are nested within a college or other organizational unit (at level 2). In this case, participant ratings of several applicants (at level 1) occur within a particular participant (at level 2). This presence of multiple non-time-series responses from the same participant is frequently explored using within-subjects analysis of variance (ANOVA), but the consideration of binary and ordinal outcomes would lead to violating an assumption of this technique. ANOVAs that contain within-subject and between-subject independent variables are frequently referred to as "repeated measures" or "mixed models," which reflects their similarity to HGLM within a generalized linear modeling framework (for detailed information about ANOVA, see Doncaster and Davey 2007; Scheffé 1959/1999). Therefore, the present use of multilevel modeling is appropriate for this examination of within- and between-participant factors (see Gelman and Hill 2007; Raudenbush and Bryk 2002), and this specific application of HGLM for exploring college admissions recommendations was employed in Bastedo and Bowman (2017).

In the HGLM analyses, all predictors used in the regression analyses were included at level 2, and a binary variable indicating the low-SES applicant was included at level 1 (this applicant attribute was the lone level-1 predictor). To examine whether certain participant and institutional characteristics predicted differential recommendations for low- versus higher-SES students, selected level-2 variables were added as predictors of the level-1 slope for the low-SES student, because we anticipated that these variables might predict differential relationships. The cross-level interactions included all participant characteristics (sex, race/ethnicity, parental education, admissions work experience, and employment at one's alma mater) and key admissions office indicators (the quality of high school information provided to the institution, whether admissions officers had to write a

paragraph explaining their decision, and whether applicants' demonstrated interest was considered in the admissions process).

Limitations

Some limitations should be noted. First, the information about admissions offices and policies was provided by participants, so admissions officers at the same institution may provide different responses for certain questions (e.g., quality of high school information typically received). Accordingly, we modeled these "institutional" characteristics at the participant level (i.e., level 2). Second, because there is no nationally representative database of college admissions officers, it is impossible to determine to what extent these data are representative of all admissions officers at selective colleges and universities. Third, participants reviewed only three admissions files, so the findings for the ordinal regression and multilevel analyses could be at least partially attributed to the use of these particular simulated files. As a result, we do not try to draw conclusions about differences in the overall scores given across files (e.g., whether one applicant was rated or should be rated more highly than another on average), but we instead focus our attention on predictors of ratings and whether these diverge for the low-SES applicant versus the higher-SES applicants.

Finally, when interpreting the influence of admissions office diversity and characteristics on admissions recommendations and outcomes, we must also keep in mind that these admissions officers participated in a realistic simulation of admissions decisions, but the choices they made were not high stakes. As a result, admissions decisions may differ when the applicants and institutions would have real consequences for both institutions and applicants. In addition, these decisions are made outside of enrollment management practices that maximize institutional revenue and prestige (Bastedo 2016). This study is therefore more accurately a reflection of admissions scoring practices rather than admissions decisions.

Results

The frequencies for admissions office characteristics are presented in Table 1. More than half of admissions officers say that their recommendation never solely determines the admissions decision (60%), whereas others have sole decision-making power all of the time (18%) or when they make a particular recommendation (22%). The vast majority of participants report that the high school information that they regularly receive for applications is either good (44%) or very good (36%), but few report that it is excellent (6%). About half of the participants report that they have to write a paragraph explaining their admissions recommendation (44%) and that their admissions office considers applicants' demonstrated interest in attending their institution (56%). Demonstrated interest, or the degree to which an applicant demonstrates their likelihood of attending the institution if admitted, has become an increasingly important factor in admissions decisions, even at highly-selective colleges (Clinedinst 2015).

When asked about the most important piece of information for determining academic merit, coursework rigor is the most frequent response (46%), followed by high school GPA (36%), and then test scores (14%) and class rank (5%). Nearly half of participants report the presence of a minimum cutoff score below which an applicant has virtually no chance

Table 1 Frequencies for admissions office and officer characteristics

Construct	Response	Frequency (%)
Admissions officer writes paragraph explaining recommendation	Yes	44
	No	56
Consider applicants' demonstrated interest in the institution during admissions recommendation	Yes	55
	No	45
Admissions officer's recommendation solely determines the admissions decision	Yes, always	18
	Only when recommending admission	16
	Only when recommending denial	6
	No, never	60
Quality of high school information that your institution receives	Very poor	0
	Poor	1
	Fair	13
	Good	44
	Very good	36
	Excellent	6
Most important piece of information for determining academic merit	Coursework rigor	46
	High school GPA	36
	Test scores	14
	Class rank	5
Presence of an academic cutoff below which a student has virtually no chance of admission	Yes	46
	No	54
Presence of an academic cutoff above which a student is virtually assured of admission	Yes	27
	No	73
Number of admissions files reviewed per week during busy times of the year	10–50	18
	55–90	16
	100	20
	110–150	21
	160–250	16
	More than 250	10
Years of experience as a college admissions officer	<1	2
	1–2	6
	3–5	22
	6–10	26
	11–15	20
	16–20	8
	21 or more	15
Admissions officer working at institution at which they received their bachelor's degree	Yes	45
	No	55

For number of admissions files reviewed, participants provided open-ended responses when taking the survey; the categories listed above were chosen to provide an overview of the distribution of these responses

of admission (46%), whereas only about a quarter report having a maximum cutoff score above which a student is virtually assured admission (27%). The number of admissions files reviewed during busy weeks varies considerably, with substantial portions of participants who report reading 10–50 applications (18%), 55–90 (16%), 100 (20%), 110–150 (21%), 160–250 (16%), and more than 250 (10%). For years of experience as an admissions officer, few participants reported 2 years or less (8%), whereas considerable proportions reported 3–5 years (22%), 6–10 years (26%), 11–15 years (20%), and 21 or more years (15%). Finally, almost half of participants are working at the same institution from which they received their bachelor's degree (45%).

Table 2 displays admissions office characteristics that differ significantly by institutional selectivity. No significant relationships are observed for considering applicants' demonstrated interest in the institution, quality of high school information available to the institution, and years of experience as a college admissions officer ($ps > .25$). For two of the attributes (key criterion for determining academic merit and sole determination of admissions decision), one of the cells had an expected count below five, which violates an assumption of chi square analyses (e.g., Weiss 2011). Preliminary analyses indicated that

Table 2 Admissions office characteristics by institutional selectivity group

Admissions office characteristic	Category	Tier 1	Tier 2	Tier 3
Admissions officer writes paragraph explaining recommendation***	Yes	80%	36%	34%
	No	20%	64%	66%
Most important piece of information for determining academic merit***	Coursework rigor	68%	50%	32%
	High school GPA	14%	32%	49%
	Class rank	6%	5%	4%
	Test scores	11%	14%	15%
Presence of an academic cutoff below which a student has virtually no chance of admission*	Yes	35%	52%	47%
	No	65%	48%	53%
Presence of an academic cutoff above which a student is virtually assured of admission***	Yes	5%	28%	37%
	No	95%	72%	63%
Admissions officer's recommendation solely determines the admissions decision***	Yes, always	11%	18%	22%
	Only when recommend admit	3%	13%	26%
	Only when recommend deny	11%	4%	5%
	No, never	74%	66%	48%
Admissions officer working at institution at which they received their bachelor's degree**	Yes	31%	54%	44%
	No	69%	46%	56%
Number of admissions files reviewed per week during busy times of the year (natural log)*		4.84	4.68	4.56

Tier 1 refers to Barron's most competitive schools, tier 2 refers to highly competitive schools, and tier 3 refers to very competitive. Only characteristics that differ significantly by selectivity are shown; no significant relationships were observed for considering applicants' demonstrated interest in the institution, quality of high school information available to the institution, and years of experience as a college admissions officer

* $p < .10$, ** $p < .05$, *** $p < .01$

combining two of the categories yielded substantively identical chi square results, so the column percentages for the original categories are shown.

Admissions officers are much more likely to write a paragraph explaining their admissions recommendation at tier 1 schools (80%) than at tier 2 or tier 3 (36 and 34%, respectively). Coursework rigor is considerably more likely than high school GPA to be rated as the most important criterion for determining academic merit at tier 1 institutions (68% vs. 14%, respectively), whereas this gap is smaller at tier 2 institutions (50% vs. 32%), and it is reversed at tier 3 institutions (32% vs. 49%). Tier 1 schools are less likely to have a minimum cutoff below which an applicant is virtually certain to be denied (35%) than are tier 2 or tier 3 schools (52 and 47%, respectively). Similarly, few tier 1 schools have a maximum cutoff above which an applicant is virtually assured of admission (5%), whereas this practice is more common at tier 2 and 3 schools (28 and 37%, respectively). Most tier 1 and 2 institutions do not use one admissions officer's recommendation as the sole determinant of the admission decision (74 and 66%, respectively), whereas about half of tier 3 schools do so (48%). Fewer admissions officers at tier 1 schools are working at their undergraduate alma mater (31%) than at tier 2 and 3 schools (54 and 44%, respectively). Finally, admissions officers at tier 1 institutions read somewhat more applications on average during the busy weeks (126) than do those at tier 3 institutions (96), with tier 2 (108) in the middle (the values for number of applications presented here are the reverse of the natural-log transformations used in the ANOVA).

The results of ordinal logit regression analyses predicting admissions recommendations for each of the three applicants are reported in Table 3. Participants at tier 2 and 3 institutions provide more favorable admissions recommendations for all applicants than those at tier 1 schools, and the number of admissions files read during busy weeks predicts lower admissions recommendations for all applicants. For both the low-SES and the middle-achieving, higher-SES applicant, female participants provided more favorable recommendations than male participants, and the quality of high school information is inversely related to recommendations. For the low-SES and the high-achieving, higher-SES applicant, having a maximum cutoff above which acceptance is virtually assured is associated with more favorable admissions recommendations. Some additional significant findings only occur for one of the higher-SES applicants. Specifically, considering demonstrated interest in the institution, having the admissions officer's recommendation solely determine the admissions decision, and using grades (rather than coursework rigor) as the most important criterion for academic merit are all both positively related to recommendations for the middle-achieving applicant. For the high-achieving applicant, participants of color provide less favorable admissions recommendations than White/Caucasian participants, whereas participants who are working at their alma mater provide more favorable recommendations.

Table 4 shows the results of HGLM analyses for applicant ratings nested within participants. The main effects for the ordinal admissions and binary acceptance recommendations are quite similar: These recommendations are more favorable at tier 2 and 3 schools than tier 1 schools, for participants who are female and who work at their alma mater, at institutions with a maximum cutoff above which virtually all applicants are accepted, and when grades (rather than coursework rigor) are viewed as the most important criterion for academic merit. Conversely, the quality of high school information available to the institution and the number of files read during busy weeks are both inversely related to admissions recommendations.

The results for the cross-level interactions between the low-SES applicant and level-2 characteristics are somewhat less consistent across the two measures of recommendations

Table 3 Results of ordinal logit regression analyses predicting admissions recommendations

Independent variable	Applicant		
	Low-SES	Higher-SES, middle-achieving	Higher-SES, high-achieving
Tier 2 institution	.843** (.361)	1.042*** (.367)	1.407** (.623)
Tier 3 institution	.873** (.365)	1.559*** (.377)	1.304** (.576)
Minimum cutoff below which an applicant is almost certainly denied	−.134 (.270)	−.226 (.278)	−.349 (.482)
Maximum cutoff above which an applicant is almost certainly accepted	.730** (.331)	.558 (.340)	1.569* (.872)
Consider demonstrated interest in the institution	.258 (.256)	.633** (.263)	.285 (.461)
Write paragraph to explain admissions recommendation	.404 (.283)	−.129 (.288)	−.068 (.520)
Quality of high school information provided to institution	−.519*** (.163)	−.364** (.164)	−.363 (.282)
Admissions officer's recommendation solely determines decision	.214 (.167)	.309* (.172)	.209 (.298)
Number of admissions files read on busy weeks (natural log)	−.395** (.190)	−.519*** (.201)	−1.254*** (.398)
Test scores are most important for determining academic merit	.395 (.399)	.575 (.412)	−.181 (.678)
Grades are most important for determining academic merit	.393 (.286)	.546* (.293)	.416 (.547)
Participant is person of color	−.057 (.298)	−.332 (.299)	−1.102** (.492)
Participant is female	.597** (.258)	.726*** (.265)	−.322 (.473)
Participant's parental education	−.065 (.071)	.016 (.072)	.075 (.120)
Participant's work experience in admissions	−.111 (.085)	.027 (.086)	.179 (.157)
Participant works at alma mater	.052 (.267)	.418 (.274)	1.451** (.571)
Nagelgerke pseudo R-square	.181	.294	.329

Standard errors are in parentheses. Curricular rigor is the referent group for most important academic merit criterion, and tier 1 institution (i.e., Barron's most competitive) is the referent group for institutional selectivity

* $p < .10$, ** $p < .05$, *** $p < .01$

(see the bottom half of Table 4). For both outcome indicators, writing a paragraph to explain the admissions recommendation is associated with more favorable recommendations for the low-SES applicant relative to the higher-SES applicants, whereas work experience in admissions has the opposite relationship. For the ordinal outcome, working at one's undergraduate alma mater is associated with relatively worse recommendations for the low-SES applicant. For the dichotomous acceptance outcome, parental education is associated with providing lower recommendations to the low-SES applicant relative to his higher-SES counterparts.

Table 4 Results for hierarchical generalized linear modeling analyses predicting admissions outcomes

Independent variable	Outcome type	
	Ordinal admissions recommendation	Binary acceptance recommendation
Tier 2 institution	1.068*** (.296)	.889*** (.269)
Tier 3 institution	1.255*** (.323)	1.109*** (.290)
Minimum cutoff below which an applicant is almost certainly denied	−.166 (.243)	−.064 (.232)
Maximum cutoff above which an applicant is almost certainly accepted	.659** (.294)	.672** (.275)
Consider demonstrated interest in the institution	.391* (.220)	.298 (.207)
Write paragraph to explain admissions recommendation	.070 (.232)	.083 (.222)
Quality of high school information provided to institution	−.376*** (.142)	−.353*** (.134)
Admissions officer's recommendation solely determines decision	.226 (.158)	.176 (.149)
Number of admissions files read on busy weeks (natural log)	−.497** (.192)	−.377** (.183)
Test scores are most important for determining academic merit	.343 (.344)	.127 (.339)
Grades are most important for determining academic merit	.412* (.246)	.395* (.231)
Participant is a person of color	−.332 (.248)	−.442* (.242)
Participant is female	.474** (.215)	.411** (.204)
Participant's parental education	.000 (.061)	−.014 (.059)
Participant's work experience in admissions	−.011 (.068)	−.008 (.064)
Participant works at alma mater	.390* (.221)	.391* (.210)
Low-SES applicant	−.866*** (.128)	−.881*** (.128)
Consider demonstrated interest in the institution	−.247 (.252)	−.216 (.264)
Write paragraph to explain admissions recommendation	.599** (.265)	.558** (.271)
Quality of high school information provided to institution	−.249 (.155)	−.211 (.160)
Participant is person of color	.464 (.290)	.273 (.315)
Participant is female	.289 (.259)	.336 (.265)
Participant's parental education	−.108 (.071)	−.134* (.075)
Participant's work experience in admissions	−.174** (.087)	−.150* (.089)
Participant works at alma mater	−.562** (.282)	−.437 (.282)

Standard errors are in parentheses. Low-SES applicant is the lone level-1 predictor in the model. Coefficients for variables listed below "low-SES applicant" indicate level-2 predictors of the level-1 slope for the low-SES applicant (i.e., the extent to which this participant or institutional characteristic predicts differential recommendations between this applicant and the higher-SES applicants). Curricular rigor is the referent group for most important academic merit criterion, and tier 1 institution (i.e., Barron's most competitive) is the referent group for institutional selectivity

* $p < .10$, ** $p < .05$, *** $p < .01$

Discussion

This study provides a variety of insights into admissions at selective colleges and universities. Some of what we learned descriptively about admissions officers and their decision-making practices is consistent with other national data (e.g., Clinedinst 2015). Curriculum rigor, which is often overlooked in studies that attempt to predict admissions decisions (Bastedo and Flaster 2014), is a crucial aspect of the decision making process at tier 1 institutions, and it is very important at just over 1/3 of all other selective institutions. Nearly half of the respondents are working at their alma maters, and the life of an admissions officer in high season is intense, with 2/3 of our respondents reading at least 100 files per week, in addition to other duties.

Other aspects are more surprising, particularly given the rhetoric surrounding holistic admissions. Demonstrated interest is used by more than half of these admissions officers, which is much higher than previously reported (Clinedinst 2015). Despite what admissions officers often claim about holistic review—that every application gets a "full read"—most respondents reported that academic criteria almost solely determine admission for applicants at the top and bottom of the pool, meaning that there is no consideration of family or educational circumstances. Unlike what is most often described in public conversations, a holistic review may not be used at many institutions when the applicants' academic credentials are relatively strong or weak for the pool. There may well be reasons for this—a floor may be established because students with weak credentials may be unlikely to succeed at the institution—but these nuances are rarely conveyed in the rhetoric of holistic review.

The multivariate results contain interesting patterns that have not been revealed by prior studies, because data about decision-making patterns in selective admissions offices are so rare. Women give overall higher admissions recommendations than men, including for the low-SES applicant, whereas no such difference was observed for the higher-SES, high-achieving applicant. Admissions officers of color were much less likely to admit this high-achieving, high-SES applicant compared to White admissions officers (albeit with no significant interaction for the low-SES applicant in the multilevel analyses). Moreover, participants with higher parental education gave lower recommendations to the low-SES applicant relative to the high-SES applicants in the multilevel analyses. These results indicate that admissions officers from historically underrepresented groups may be more inclined toward equity and social justice in the decision-making process (or perhaps simply toward giving sufficient consideration of the challenges that many low-SES students face), even when accounting for other admissions office practices and admissions officer characteristics.

Multiple admissions officer employment attributes are also associated with differential recommendations across the applicants. Greater work experience in admissions and working at one's undergraduate alma mater are both associated with providing lower recommendations to the low-SES applicant relative to the higher-SES counterparts. In general, admissions officers working at their alma mater had a particularly strong preference for the high-SES, high-achieving candidate. These patterns perhaps reflect a comparative lack of interest in equity among these readers and/or a stronger desire to increase academic prestige at their home institution, and thus the perceived value of their own degree. As a whole, such findings may contradict the idealized notion that admissions officers can be trained to provide recommendations that are entirely distinct from their own experiences and identities.

In terms of the effect of admissions practices, the results for cutoffs are intriguing: minimum cutoffs are not negatively related to any evaluations, but low-SES and high-SES applicants both had more favorable recommendations when maximum cutoffs were used.

Furthermore, reading more applications per week predicted lower recommendations for all applicants. Although the mechanisms responsible for these findings are unclear, these variables may be proxies for institutional prestige or selectivity. That is, more selective institutions may generally receive more applications (and therefore require admissions officers to read more files per week), and less selective institutions are more likely to accept all high-achieving applicants (by using a maximum cutoff). The analyses controlled for Barron's competitiveness tier, but institutions within each tier are known to exhibit some variation in selectivity (Bastedo and Jaquette 2011).

In terms of differential recommendations by socioeconomic status, perhaps the most noteworthy admissions practice involves having admissions officers write a paragraph explaining their admissions decision. This procedure is associated with more positive recommendations for the low-SES applicant relative to the higher-SES applicants. This explicit explanation of the decision may serve at least two functions. First, it provides a form of accountability such that readers have to provide evidence to support their recommendation. Second, admissions officers may think more deeply when they have to provide this paragraph, which may help them avoid biases in judgment that could privilege higher-SES applicants.

Conclusion

This study provides a unique nationwide glimpse into admissions practices and decision making at selective colleges and universities, including the nature and prevalence of these practices as well as predictors of admissions recommendations for applicants from diverse socioeconomic backgrounds. These findings support some pre-existing perceptions and beliefs (whether based on anecdote or research), whereas they contradict various others. Given the substantial benefits that may occur as a result of attending and graduating from a selective institution, understanding the "black box" of admissions decisions is crucial, particularly pertaining to equity and access.

Future research, both qualitative and quantitative, is needed to extend and expand upon this study. Examining longitudinal data from multiple admissions offices, including how admissions officers rate and score thousands of files, would provide stronger information on patterns of college admissions decision making with respect to both admissions officer diversity and admissions office practices. Intensive observation of admissions scoring and committee deliberations could also reveal important patterns (e.g., Posselt 2016). The present results suggest that offices seeking to improve equitable outcomes should hire greater numbers of women, people of color, people from lower socioeconomic backgrounds, and those whose degrees are from outside the institution to help pursue these goals more effectively. In addition, certain practices that are often "below the radar," such as the requirement to write a paragraph explaining admissions recommendations, the use of maximum/minimum cutoffs, and the intensity of the reading process, may affect decision making to a greater degree than many admissions leaders and administrators would anticipate. Additional examination of these issues may prove fruitful in understanding admissions decision making.

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References

Astin, A. W., & Oseguera, L. (2004). The declining "equity" of American higher education. *The Review of Higher Education, 27*(3), 321–341.

Attewell, P., & Domina, T. (2008). Raising the bar: Curricular intensity and academic performance. *Educational Evaluation and Policy Analysis, 30,* 51–71.

Bailey, M. J., & Dynarski, S. M. (2011). *Gains and gaps: Changing inequality in US college entry and completion* (No. w17633). Cambridge, MA: National Bureau of Economic Research.

Bastedo, M. N. (2014). *Cognitive repairs in the admissions office: New strategies for improving equity and excellence at selective colleges*. Presentation at the Annual Meeting of the American Educational Research Association, Philadelphia, PA, April 3–7, 2014.

Bastedo, M. N. (2016). Enrollment management and the low-income student: How holistic admissions and market competition can impede equity. In A. P. Kelly, J. S. Howell, & C. Sattin-Bajaj (Eds.), *Matching students to opportunity: Expanding college choice, access, and quality* (pp. 121–134). Cambridge, MA: Harvard Education Press.

Bastedo, M. N., & Bowman, N. A. (2017). Improving admission of low-SES students at selective colleges: Results from an experimental simulation. *Educational Researcher, 46*(2), 67–77.

Bastedo, M. N., & Flaster, A. (2014). Conceptual and methodological problems in research on college undermatch. *Educational Researcher, 43,* 93–99.

Bastedo, M. N., Glasener, K. M., Kelly, J. L., & Bowman, N. A. (2017). *What are we talking about when we talk about holistic review? Selective college admissions and its effects on low-SES students*. Ann Arbor: University of Michigan.

Bastedo, M. N., Howard, J. E., & Flaster, A. (2016). Holistic admissions after affirmative action: Does "maximizing" the high school curriculum matter? *Educational Evaluation and Policy Analysis, 38,* 389–409.

Bastedo, M. N., & Jaquette, O. (2011). Running in place: Low-income students and the dynamics of higher education stratification. *Educational Evaluation and Policy Analysis, 33,* 318–339.

Bielby, R., Posselt, J. R., Jaquette, O., & Bastedo, M. N. (2014). Why are women underrepresented in elite colleges and universities? A non-linear decomposition analysis. *Research in Higher Education, 55,* 735–760.

Bound, J., Hershbein, B., & Long, B. T. (2009). *Playing the admissions game: Student reactions to increasing college competition* (No. 15272). Cambridge, MA: National Bureau of Economic Research.

Bowen, W. G., & Bok, D. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton, NJ: Princeton University Press.

Bowen, W. G., Chingos, M. M., & McPherson, M. S. (2009). *Crossing the finish line: Completing college at America's public universities*. Princeton, NJ: Princeton University Press.

Brewer, D. J., Eide, E. R., & Ehrenberg, R. G. (1999). Does it pay to attend an elite private college? Cross-cohort evidence on the effects of college type on earnings. *The Journal of Human Resources, 34*(1), 104–123.

Buchmann, C., Condron, D. J., & Roscigno, V. J. (2010). Shadow education, American style: Test preparation, the SAT, and college enrollment. *Social Forces, 89*(2), 435–461.

Carnevale, A. P., & Strohl, J. (2013). *Separate and unequal: How higher education reinforces the intergenerational reproduction of White racial privilege*. Washington, DC: Georgetown University.

Clinedinst, M. (2015). *State of college admission 2014*. Washington, DC: National Association for College Admission Counseling.

College Board. (2012). *Best practices in admissions decisions: A report on the third College Board conference on admission models*. New York, NY: College Board.

Dale, S., & Krueger, A. B. (2011). *Estimating the return to college selectivity over the career using administrative earnings data* (No. w17159). Cambridge, MA: National Bureau of Economic Research.

Doncaster, C. P., & Davey, A. J. H. (2007). *Analysis of variance and covariance: How to choose and construct models for the life sciences*. Cambridge, UK: Cambridge University Press.

Duffy, E. A., & Goldberg, I. (1997). *Crafting a class: College admissions and financial aid, 1955–1994*. Princeton: Princeton University Press.

Espenshade, T. J., & Radford, A. W. (2009). *No longer separate, not yet equal: Race and class in elite college admission and campus life*. Princeton, NJ: Princeton University Press.

Espinosa, L. L., Gaertner, M. N., & Orfield, G. (2015). *Race, class, and college access: Achieving diversity in a shifting legal landscape*. Washington, DC: American Council on Education.

Fernandez, R., & Weinberg, N. (1997). Shifting and sorting: Personal contacts and hiring in a retail bank. *American Sociological Review, 62,* 883–902.

Fisher v. University of Texas, 570 U.S. (2013).

Gaertner, M. N., & Hart, M. (2013). Considering class: College access and diversity. *Harvard Law and Policy Review, 7,* 367–387.
Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. Cambridge, UK: Cambridge University Press.
Heck, R. H., & Thomas, S. L. (2009). *An introduction to multilevel modeling techniques* (2nd ed.). New York, NY: Routledge.
Holland, M. M. (2014). Navigating the road to college: Race and class variation in the college application process. *Sociology Compass, 8*(10), 1191–1205.
Karabel, J. (2005). *The chosen*. New York, NY: Houghton Mifflin.
Karen, D. (1990). Toward a political-organizational model of gatekeeping: The case of elite colleges. *Sociology of Education, 63*, 227–240.
Klopfenstein, K. (2004). Advanced placement: Do minorities have equal opportunity? *Economics of Education Review, 23,* 115–131.
Leonhardt, D. (2017). The assault on public colleges – and the American dream. *The New York Times*. Retrieved June 30, 2017, from https://www.nytimes.com/2017/05/25/opinion/sunday/the-assault-on-colleges-and-the-american-dream.html.
Long, J. S. (1997). *Regression models for categorical and limited dependent variables*. Thousand Oaks, CA: Sage.
Long, B. T., & Kurlaender, M. (2009). Do community colleges provide a viable pathway to a baccalaureate degree? *Educational Evaluation and Policy Analysis, 31*(1), 30–53.
Lucido, J. A. (2014). How admissions decisions get made. In D. Hossler & B. Bontrager (Eds.), *Handbook of strategic enrollment management* (pp. 147–170). San Francisco, CA: Jossey-Bass.
McDonough, P. M. (1994). Buying and selling higher education: The social construction of the college applicant. *Journal of Higher Education, 65*(4), 427–446.
McDonough, P. M. (1998). Structuring college opportunities: A cross-case analysis of organizational cultures, climates, & habiti. In C. A. Torres & T. R. Mitchell (Eds.), *Sociology of education: Emerging perspectives* (pp. 181–210). Albany, NY: SUNY Press.
McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology, 27,* 415–444.
Pager, D., & Shepherd, H. (2008). The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets. *Annual Review of Sociology, 34,* 181–208.
Perna, L. W. (2004). The key to college access: Rigorous academic preparation. In W. G. Tierney, Z. B. Corwin, & J. E. Colyar (Eds.), *Preparing for college: Nine elements of effective outreach* (pp. 113–134). Albany: SUNY Press.
Porter, S. R. (2006). What can multilevel models add to institutional research? In M. A. Coughlin (Ed.), *Applications of intermediate/advanced statistics in institutional research.* (Resources in Institutional Research, Vol. 16). Tallahassee, FL: Association for Institutional Research.
Posselt, J. R. (2016). *Inside graduate admissions: Merit, diversity, and faculty gatekeeping*. Cambridge: Harvard University Press.
Posselt, J. R., Jaquette, O., Bielby, R., & Bastedo, M. N. (2012). Access without equity: Longitudinal analyses of institutional stratification by race and ethnicity, 1972–2004. *American Educational Research Journal, 49*(6), 1074–1111.
Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.
Rivera, L. A. (2012). Hiring as cultural matching: The case of elite professional service firms. *American Sociological Review, 77*(6), 999–1022.
Roderick, M., Coca, V., & Nagaoka, J. (2011). Potholes on the road to college: High school effects in shaping urban students' participation in college application, four-year college enrollment, and college match. *Sociology of Education, 84*(3), 178–211.
Saenz, V. B., Oseguera, L., & Hurtado, S. (2007). Losing ground? Exploring racial/ethnic shifts in enrollment at selective institutions. In G. Orfield, P. Marin, S. M. Flores, & L. M. Garces (Eds.), *Charting the future of college affirmative action: Legal victories, continuing attacks, and new research* (pp. 173–204). Los Angeles, CA: The Civil Rights Project at UCLA.
Scheffé, H. (1959/1999). *The analysis of variance* (Rev. ed.). New York, NY: Wiley.
Steinberg, J. (2002). *The gatekeepers: Inside the admissions process of a premier college*. New York, NY: Penguin.
Stevens, M. (2007). *Creating a class*. Cambridge, MA: Harvard University Press.
Synott, M. G. (1979). *The half-opened door: Discrimination and admissions at Harvard, Yale, and Princeton, 1900–1970*. Westport, CT: Greenwood Press.

Thomas, S. L., & Zhang, L. (2005). Post-baccalaureate wage growth within four years of graduation: The effects of college quality and college major. *Research in Higher Education, 46*(4), 437–459.
Wechsler, H. S. (1977). *The qualified student: A history of selective college admission in America*. New York: Wiley.
Weiss, N. A. (2011). *Introductory statistics* (8th ed.). Boston, MA: Pearson.