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To cite this article: Don Hossler, Emily Chung, Jihye Kwon, Jerry Lucido, Nicholas Bowman & Michael Bastedo (2019) A Study of the Use of Nonacademic Factors in Holistic Undergraduate Admissions Reviews, *The Journal of Higher Education*, 90:6, 833-859, DOI: [10.1080/00221546.2019.1574694](https://doi.org/10.1080/00221546.2019.1574694)

To link to this article: <https://doi.org/10.1080/00221546.2019.1574694>



Published online: 14 Mar 2019.



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A Study of the Use of Nonacademic Factors in Holistic Undergraduate Admissions Reviews

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ABSTRACT

How colleges make admissions decisions at four-year institutions is facing high levels of scrutiny. Students, families, and policymakers are asking how offices of admissions decide to admit students. Increasing numbers of institutions are becoming test optional and/or using holistic admissions schemes, but little is known about how decisions are made. This exploratory study employs three modes of research to examine the use of nonacademic factors in admissions. The methodological approaches include: a qualitative meta-analysis of empirical and models of classificatory frameworks for assessing nonacademic factors in admissions, 19 qualitative interviews at 10 public and private institutions across a range of selectivity, and the analysis of relevant survey data from over 300 admissions professionals. Results indicate academic factors including grades, test scores, and rigor of courses were the most important considerations for admissions. The second most important were contextual: the use of student, family, and school background characteristics. The final set of factors used were non-academic; the most commonly used were measures of student performance and attitudinal factors. Institutional selectivity and public or private control also had an impact on the relative importance of these factors.

ARTICLE HISTORY

Received 30 January 2018
Accepted 23 January 2019

KEYWORDS

Nonacademic factors;
nongenerative;
undergraduate admission
policy; holistic review;
affirmative action

Introduction

College admissions decisions at four-year institutions are facing intense scrutiny. Multiple affirmative action lawsuits have recently been filed or are being adjudicated now. This includes Harvard University, University of North Carolina–Chapel Hill (Anderson, 2019; Hong & Korn, 2018), and the University of California–Berkeley (Hartocollis, 2018). The Trump administration has also recently indicated that it will focus on reducing any remnants of race-based admissions criteria. Indeed, the U.S. Department of Justice has joined the plaintiffs in the Harvard lawsuit as well as announcing

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an investigation of Yale, alleging that their admissions policies discriminate against Asian Americans (AACCE, 2018). More recently, the University of California has announced that it is examining the value of the ACT and SAT exams in predicting student success (Hernandez, 2018).

In addition to affirmative action and the test optional movement, campus administrators often want more students—or at least more paying students to balance campus budgets (Jaquette & Curs, 2015; Jaquette, Curs, & Posselt, 2016). Furthermore, they want entering classes with greater socioeconomic and ethnic diversity. Many state and federal policymakers are focused upon access, student persistence, and a more diverse student body. Many state funding formulas for public institutions have financial incentives for enrolling more students and/or more low-income students (National Conference of State Legislatures, 2015). Selective private institutions are also facing criticisms for not enrolling enough low-income students (Bastedo & Bowman, 2017; Bastedo, Bowman, Glasener, & Kelly, 2018; Chetty, Friedman, Saez, Turner, & Yagan, 2017).

Along with the general public and media, students and parents want to know *how to get in* (Hartocollis, 2018; Van Buskirk, 2006; Walton, Spencer, & Erman, 2013) and *how* these decisions are made. While affirmative action is outside the realm of this exploratory study, there are many causes for the lack of perceived transparency in admissions policies. More colleges and universities are adopting test-optional admissions in the hopes of attracting a larger and more diverse student body (Bastedo et al., 2018; Lucido, 2018; Zwick, 2017). As grades and test scores become less important, families struggle to understand what other factors in addition to grades will determine admissions outcomes.

As the use of test optional and holistic admissions schemes have grown in importance, so has the use of noncognitive criteria, or the term we use, *nonacademic factors*. Sedlacek (2011), the scholar who is most closely associated with research on the use of noncognitive variables in admissions, defines these as:

variables relating to adjustment, motivation, and student perceptions, rather than the traditional verbal and quantitative (often called cognitive) areas typically measured by standardized tests. (p. 17)

In this study, we use the term *nonacademic factors* (NAFs). Both Kyllonen (2005) and Sommerfeld (2011) have noted that *noncognitive* is a misnomer because several of the measures involve cognition.

Jaschik (2010) has noted that “the idea of noncognitive (nonacademic) admissions reviews appears to be taking off...New systems to measure other kinds of skills and qualities are moving from being theoretical to playing actual roles in admissions decisions.” NAFs are viewed as a tool to broaden the diversity of applicant pools and admitted students. Undergraduate institutions have increasingly turned to NAFs as part of

holistic admission policies (Kalsbeek, Sandlin, & Sedlacek, 2013; Kyllonen, 2012; Sternberg, Bonney, Gabora, & Merrifield, 2012; Thomas, Kuncel, & Credé, 2007). This is true of both undergraduate and professional schools (see, for example, Hagedorn & Nora, 1996; Hughes, 2002; James & Chilvers, 2001; Lopez, Self, & Karnitz, 2009).

While there is no authoritative list of the number of institutions that have adopted holistic review and use NAFs, FairTest tracks how many institutions are test optional. In 1981, 283 institutions were test optional; in 2018, more than 1,000 are test optional. Strauss (2017) reports that 275 leading colleges and universities are on the list of test optional schools. Most recently, the University of Chicago has become test optional, perhaps signaling a trend among highly selective institutions (Anderson, 2018).

To date, few efforts have been made to synthesize research on NAFs at the undergraduate level or to study how these criteria are used in decisions. For example, to what extent do four-year colleges consider student contextual factors (family income, parental education, or single-parent household)? To what extent are high school contextual factors, such as percentage of students at the school who receive free or reduced-price lunch or the percentage of graduates that pursue postsecondary education, a consideration in the admissions decision? In this study, student/family context refers to variables that pertain to the individual student background (e.g., family income, educational attainment of parents, living in a single-parent household, or the rigor of the program of studies students choose while in high school) (Bastedo et al., 2018; Rigol, 2003). However, the number of AP courses offered is considered a high school contextual factor.

The use of NAFs as part of holistic review has come under attack in part because of the lack of transparency. Long (2015) argues that efforts to use holistic review and/or contextual factors in college admissions yield an admitted class that has a lower predicted grade point average and students who are less likely to graduate. He concludes that holistic review may not be a viable strategy for universities and may bring affirmative action lawsuits. His comments reflect the type of critiques leveled at test-optional admissions and the use of NAFs. Greater transparency would shed more light on the “black box” of admissions, especially selective admission processes (Lucido, 2018). Better transparency would decrease the cry for greater scrutiny (Bastedo et al., 2018; Van Buskirk, 2006; Zwick, 2016), although what would be learned remains to be seen. Nevertheless, a better understanding is needed about how institutional selectivity, size, and control (public/private) influences the use of NAFs and contextual factors compared to grades and test scores. For example, public institutions have smaller admissions staffs than do private colleges and universities (Bloom, 2016; Clinedinst, Koranteng, & Nicola, 2015). The size of admissions staffs alone could

influence the extent to which public institutions can give a full holistic review to all applicants.

There is a long-standing body of knowledge that examines the impact of higher education admissions processes on social stratification (Alon, 2009; Bastedo & Jaquette, 2011; Karabel & Astin, 1975; Posselt & Grodsky, 2017; Sewell, 1971). However, little attention has been given to how these admission processes are actually constructed. Recently, more studies in this vein have been undertaken, reflecting the growing importance of NAFs in college admissions. For example, Beattie, Laliberté, and Oreopoulos (2016) demonstrate that the first-year college performance of high- and low-performing students could be predicted using a set of attitudinal and performance factors. While not focused on NAFs, Zimdars (2016) offers a comprehensive international comparative look at selective admissions policies through an examination of mostly elite undergraduate institutions in the UK and the U.S. Overall, recent research on the use of NAFs are focused on a single institution or a handful of elite institutions. In order to understand the recent growth of reliance on nonacademic factors in admissions, there remains a need for more research on the extent to which NAFs are used, and the type of NAFs used in admissions policies across a range of institutions.

Methods

This mixed-method exploratory study on NAFs in admissions was informed by the following questions: (1) What types of NAFs are most frequently used? (2) How important are NAFs relative to student and high school contextual factors? and (3) How do institutional control and selectivity influence the use of NAFs? Finally, this study considers the extent to which universities have studied the impact of their admissions policies on student experience and/or campus culture.

In the first phase of this mixed-method study, the research team undertook a qualitative meta-analysis of extant research, research-based syntheses, and models that focused on the use of NAFs in college admissions. Studies of college outcomes that were linked to admissions criteria (Levitt, Pomerville, & Surace, 2016) were also considered. The goal for the qualitative meta-analysis was to create or find a classificatory framework for NAFs that could be used to develop a set of interview questions for enrollment professionals and a coding sheet for the analysis of interviews.

In the next phase, the research team conducted interviews with two senior enrollment professionals across an array of institutions. We sought to interview two senior enrollment professionals at ten universities. However, only 19 interviews were completed, as one senior enrollment officer thought only a discussion with her was needed. The goal was to uncover the most frequently used NAFs across a range of institutions with a focus on selectivity and control.

The third phase of this mixed-methods study was a secondary analysis of the results of a survey completed by over 300 admissions professionals attending a national admissions conference (see Bastedo et al., 2018). Because the case-study sites included responses from just ten universities, the survey data made it possible to compare the types and frequency of NAFs used across a larger set of colleges and universities. This provided a higher level of confidence in our findings.

Qualitative meta-analysis for a coding scheme

In this first phase of this study, the research team identified empirical and proposed models of NAFs. For this reason, a qualitative form of meta-analysis (Lonsdale et al., 2013; Strobel & Van Barneveld, 2009) was employed to analyze these sources. The research team used keyword searches and reviewed and coded a selected set of empirical studies and classificatory models on the use of NAFs in undergraduate admissions. During this process, iterative drafts of coding sheets were created. Once we created a coding sheet, we reanalyzed the empirical studies using the coding sheet. The goal was to develop a reliable coding scheme with a high level of inter-rater reliability. This made it possible to analyze data collected from the interviews. The research team also met four times using consensus to finalize the coding sheet and to develop the interview questions (available upon request).

Qualitative interviews

Drawing on the work of Yin (2015), the team conducted interviews with enrollment professionals at the ten selected institutions representing a range of public and private nonprofit, four-year universities. The research team was able to develop a set of questions that provided authentic insights into the use of NAFs in holistic review (Merriam, 1998; Yin, 2015). This approach yielded a descriptive exploratory study (Baxter & Jack, 2008). Consistent with Yin's work, the research team looked for both similarities and differences in the use of NAFs across the ten sites.

Using Shenton's guidelines for trustworthiness (2004), the team recorded and conducted by phone each interview, with two or more members of the research team separately coding data (coding sheet available upon request). Interview questions were iterative in nature and the research team met four times to identify patterns and to determine if any themes fell outside of the classificatory framework. At eight universities, the senior enrollment officer on each campus and the director of admissions were interviewed. One senior enrollment officer declined to identify a second individual from the staff. In another case, the senior admissions director recommended that the director

of educational opportunity be interviewed because that office was empowered to make admissions decisions for a small number of students based on NAFs. The admissions office for this regional university is required to use a formula set by a system-level office. Each interviewee was queried with an interview protocol regarding the admissions processes used at his/her institution. The ten institutions are briefly described in [Table 1](#).

The final coding sheet included the following categories:

- (1) Academic (high school GPA, test scores, academic awards, etc.);
- (2) School context (number of AP courses offered at a school, percentage of students going to four-year institutions, the percentage of students receiving free or reduced-price lunches, etc.) or student context (first-generation college aspirant, family income, etc.); and
- (3) NAFs employed by institutional interview sites.

Table 1. Institution list and description.

Public	Urban Research University (URU)	URU is a major public research university located in downtown area of major metropolitan area. Large entering class of first-time, first-year as well as new transfer students. Many graduate programs and a medical school. Described as <i>very selective</i> by Barron's.
	Highly Selective Public Multiversity (HSPM)	HSPM is a major public research university. Enrolls large number of transfer students and has many graduate programs. Classified as <i>most competitive</i> by Barron's.
	Flagship State University (FSU)	FSU is a large major public university. Enrolls large numbers of first-time, first-year students, transfer, and graduate students. Considered <i>very selective</i> by Barron's.
	Metropolitan Public University (MPU)	MPU is a large comprehensive masters and baccalaureate-granting public university. Strong transfer mission, but also enrolls large number of first-time undergraduates. Many of its policies, including admissions, are set by state system-level office. Considered <i>less selective</i> by Barron's.
Private	Nontraditional Private College (NPC)	NPC is a well-regarded private undergraduate college. Because of its long history of being test optional, has many years of experience using NAFs. Classified by Barron's as <i>most competitive</i> .
	Private University (PU)	PU is a regional, mid-sized, primarily undergraduate institution. Described as <i>competitive</i> by Barron's.
	Highly Selective Private University (HSPU)	HSPU ranks among the most highly regarded and most selective private universities in the nation. Research institution that enrolls large numbers of undergraduate and graduate students. Classified by Barron's as <i>most competitive</i> .
	Church Affiliated University (CAU)	CAU is a large private institution affiliated with a religious body. Has a large undergraduate and graduate student population. Classified by Barron's as <i>most competitive</i> .
	Highly Selective Private Liberal Arts College (HSPLAC)	HSPLAC is a private institution focused primarily upon undergraduate education. Classified by Barron's as <i>most competitive</i> .
	Private Technical College (PTC)	PTC is a small private college that focuses on technical education. Enrolls primarily undergraduate students. Barron's classifies as a <i>most competitive</i> .

For the NAFs, the categories explicated by ETS (Kyllonen, 2005) provided the highest levels of convergence for the analyses undertaken of interviews. To summarize the data from the interviews we drew upon the work of Miles, Huberman, and Saldana (2013). This provided a straightforward approach to categorizing and counting the frequency with which NAFs are used in the admissions decisions.

Survey data

In order to gain further insights and to enhance the transferability of the results (Shenton, 2004), this study included a secondary analysis of open-ended responses to a survey of admissions professionals in 2014. Admissions professionals attending the 2014 annual meeting of National Association of College Admissions Counseling (NACAC) were asked to participate in the survey. Responses were examined from 311 admissions representatives who worked at institutions classified in the top three tiers of selectivity based upon *Barron's Profiles of American College* (2016) (very competitive; highly competitive; and most-competitive).

For this secondary analysis, participants were limited to those whose job titles implied that they regularly review applications (see Bastedo et al., 2018). Of the 311 admissions representatives, 241 professionals responded to open-ended survey items focused on the use of NAFs, yielding a response rate of 78%. The surveys did not include information as to in which institution the respondents worked. In open-ended questions, respondents were asked to identify academic, contextual, and NAFs that they used in reviews of admissions files. Since respondents could indicate more than one NAF on the survey, the total number of NAFs does not match the number of respondents (see Table 2). Interview data were triangulated with these survey data to provide more robust insights into the use of NAFs in undergraduate college admissions.

Limitations

This multi-method study draws on three sources of data: a qualitative meta-analysis of empirical students and conceptual models focused on the use of NAFs in college admission, data from the set of ten interview sites, and analysis of survey data from 241 admissions professionals. The majority of interviews and all of the survey data were gathered from professionals working at the first three tiers of selectivity using *Barron's Guide* (2016). Because selective institutions are more likely to use holistic review and thus NAFs, for the interviews, institutions that fell within the top three levels of selectivity were oversampled (Kingsbury, 2009).

Thus, findings for the first three categories of selectivity in Barron's are more robust and reliable compared with the results from the two less-

selective universities. Nevertheless, although this investigation used multiple sources of data, neither the survey data nor the interviews can claim to present a complete picture of the phenomena being studied, and thus care has been taken to not make broad generalizations. Certainly, the findings for the interviews at two less-selective colleges only enable us to speculate. However, it is worth noting that the two institutions that were placed in tiers 4 and 5 (more selective) report using the same NAFs reported for tiers 1–3 (less selective).

Results

First, the results from the meta-analysis of previous research and models regarding the use of NAFs are presented. These results are then followed by results from the ten interview sites. Finally, results from the survey of admissions professionals are reported.

Qualitative meta-analysis

The meta-analysis examined empirical studies on the use of NAFs in undergraduate admissions. Many studies on the use of NAFs in undergraduate admissions examine the relationship between admissions criteria and subsequent success in college—these investigations were also included in the qualitative meta-analysis. Twenty-eight studies were found that focused on the relationship between the use of NAFs in undergraduate college admissions decisions and/or subsequent college outcomes (list of studies available upon request).

The majority of the articles identified were one-time studies, with most of them examining the efficacy of NAFs in predicting student persistence and/or GPA. Most of these studies either were authored by William Sedlacek and colleagues, or were conducted using Sedlacek's instrument, the Non-Cognitive Questionnaire (NCQ). The NCQ was designed to measure noncognitive factors to predict college success outcomes (see, for example, Kalsbeek et al., 2013; Sedlacek, 1996, 2010; Sedlacek & Adams-Gaston, 1992; Tracey & Sedlacek, 1984a, 1984b). However, an influential meta-analysis of 47 studies that used NCQ for undergraduate and graduate admission decisions, published in a leading journal in educational psychology, found shortcomings in the studies including small sample sizes and problems with analytic techniques. As a result, NCQ factors were evaluated as being either ineffective or marginally effective in predicting student success (Thomas et al., 2007).

Other than Sedlacek's work, few instruments showed empirical data as reliable and valid assessments of NAFs. As a result, it was necessary to review other conceptual models; some of them had been used to make admissions decisions and some had not. One of these models used in

admissions was developed by Sternberg (see, for example, Sternberg et al., 2010; Vultaggio, 2009), which was put into practice at Tufts University while Sternberg was a faculty member. While Sternberg's work offers an interesting approach, Tufts no longer uses the model (Terkla, 2017). An exhaustive literature search as well as the consultation of several admissions experts seemed to indicate no universities were currently using Sternberg's model. Another approach to NAFs can be found in a focus on grit. Two studies at the University of Pennsylvania and at West Point (Duckworth, Peterson, Matthews, & Kelly, 2007; Kelly, Matthews, & Bartone, 2014) found grit to be a good predictor of academic success. However, how to best measure grit is still being studied (Datu, Yuen, & Chen, 2017), which made it impossible to use grit directly in the coding scheme. Furthermore, the results of this study demonstrate it is not sufficient to be the sole measure of NAFs. Finally, Rowan-Kenyon, Savitz-Romer, Ott, Swan, and Liu (2017) have advanced a comprehensive model of nonacademic factors relevant for both undergraduate admissions decisions and for making judgments about employment, but it has not been used in college admissions practice. Thus, for models developed by Duckworth et al., Rowan-Kenyon et al., and Sternberg et al., there are too few studies to make a persuasive case for their use. After deliberation, Sedlacek's model (1996) was also excluded because of the strong critique of the research that used his model.

As a next step, the research team looked at two typologies developed by Kyllonen. In a 2012 article, Kyllonen posits the importance of nonacademic criteria as part of "21st Century skills" that college graduates should possess to compete in the labor market. This typology was focused on skills needed for the 21st Century labor market and was judged not useful for this study. In 2005, however, Kyllonen had already developed a framework assessing NAFs in admissions decisions for the Educational Testing Service (ETS). In this model, he proposed five categories of NAFs:

- (1) Basic personality factors (Extroversion, Emotional Stability, Agreeableness, Conscientiousness, Openness/Intellect, Circadian type);
- (2) Affective competencies (Creativity, Emotional Intelligence, Cognitive style, Metacognition/Confidence);
- (3) Performance factors (Domain Proficiency, General Proficiency, Effort/Motivation/Engagement, Discipline/Professionalism, Teamwork, Leadership, and Management/Organization Skills);
- (4) Attitudinal constructs (Self-concept, Self-efficacy, Attribution Tendencies, Interests, Social Attitudes/Values/Beliefs, Ethics/Morality, Intercultural Sensitivity, Adaptability/Flexibility); and
- (5) Learning skills (Study Habits, Organization, Time Management, Test Anxiety, Stress/Coping).

This framework has been employed in several studies of nonacademic factors in admissions or college outcomes (see for example Chamorro-Premuzic, Furnham, and Lewis (2007); Kaufman, Agars, and Lopez-Wagner (2008); Trapmann, Hell, Hirn, and Schuler (2007); Kyllonen, Walters, and Kaufman (2005); Santelices, Ugarte, Flotts, Radovic, and Kyllonen (2011)). In addition, it has been influential in the work of ETS. The research team used Kyllonen's 2005 framework to analyze three existing empirical studies. Ultimately, team members found more convergence in this exploratory coding effort by using this model than other frameworks. The two most commonly used NAFs in the empirical studies reanalyzed were performance and attitudinal measures. These findings are discussed more later in this article.

Institutional interviews

The interviews with senior enrollment professionals provided insights into the relative importance of NAFs in comparison with other admission factors, including school grades, college admissions tests, and the use of other factors such as the demographic characteristics of high schools or student applicants (Appendix A). In addition, it became evident which nonacademic factors were most frequently used in admissions decisions. The results suggest differences in the ways that postsecondary institutional characteristics such as public and private control, institutional selectivity, and/or size might also influence the extent to which academic factors, contextual factors, and NAFs are used.

Table 3 presents an overview of the main findings from data analysis. The results show that performance and attitudinal factors are the most frequently used NAFs. Affective and learning skills are not used at all.

Table 4 contextualizes the importance of NAFs by looking across all factors used in the admissions decisions. The results demonstrate the following: (1) Academic factors are the most important criteria for admissions for all institutions—both public and private; (2) Contextual factors (family income, low/moderate-income high school, etc.) are next; and finally (3) Nonacademic factors follow.

Survey results

Tables 2 and 5 summarize the results of the survey data from admissions professionals. They report the number of institutions where interviews were conducted that are using NAFs, the extent to which the institutions use other admissions criteria, and the relative importance of various admissions criteria used by the interview sites.

Comparing the results in Tables 2 and 3 reveals that the NAF categories most frequently used in the ten interview sites were also the most frequent NAFs used in

Table 2. Analysis of admissions surveys.

	Basic personality factors	Affective competencies	Performance factors	Attitudinal constructs	Learning skills
	Extroversion Emotional stability Agreeableness Conscientiousness Openness/intellect Circadian type	Creativity Emotional intelligence Cognitive style Metacognition/ confidence	Domain proficiency General proficiency Effort/motivation/ engagement Discipline/ professionalism Teamwork Leadership Management/organization	Self-concept Self-efficacy Attribution tendencies Interests Social attitudes/values/ beliefs Ethics/morality Intercultural sensitivity Adaptability/flexibility	Study habits Organization Time management Test anxiety Stress/coping
Number of Respondents Indicating Use of NAFs	39	33	143	98	24



Table 3. Nonacademic factors most frequently used.

	Basic personality factors	Affective competencies	Performance factors	Attitudinal constructs
	Extroversion	Creativity	Domain proficiency	Self-concept
	Emotional Stability	Emotional Intelligence	General proficiency	Self-efficacy
	Agreeableness	Cognitive Style	Effort/motivation/engagement	Attribution tendencies
	Conscientiousness	Metacognition/confidence	Discipline/professionalism	Interests
	Openness/intellect		Teamwork	Social attitudes/values/beliefs
	Circadian type		Leadership	Ethics/morality
			Management/organization	Intercultural sensitivity
				Adaptability/flexibility
				Learning skills
				Study habits
				Organization
				Time management
				Test anxiety
				Stress/coping
				0
				4
				7
				0
				0

*Number of Institutions Indicating Most Frequently Used NAF

*Number of institutions adds up to more than 10, as several interviewees indicated their institutions used two types of NAFs most frequently.

Table 4. Admissions factors used by private and public institutions.

Sector (No. of Institutions)	Selectivity (Most = 1, Highly = 2, Very = 3, Competitive = 4, Less = 5)	Academic	High School and Student Context	Most Frequent NAF	Assessment	Formal Instrument	Other
Private (6)	All but one = 1; The only other = 4	For most, this was most important. But also more likely to use NAFs.	One or other was next most important. But often hard to unpack, especially on curricular rigor.	Performance factors, followed by attitudinal constructs.	Most have undertaken, but mostly focused on student success. Few study use of NAFs, but some plan to in near future.	2/6 have one or are starting to use one.	Most likely to use NAFs and to be unable to assign numerical score to factors (holistic review); As selectivity increases, importance of NAFs increase.
Public (4)	Mode = 3, but ranged from 1 to 5	Most important	One or other was next most important. But often hard to unpack, especially on curricular rigor.	Most publics do not use NAFs or when they do, NAFs play a limited role.	Most have undertaken, but mostly focused on student success and few on use of NAFs. Census and demographic data are predictive.	2/4 and one of two is an optional admission process.	More likely to use algorithmic approach; Size may also lead to a more formulaic approach to admit decision

Table 5. Demographic overview of secondary admissions survey information.

Total number of institutions	Total number of surveys administered	Total number of admissions officers reporting the use of NAFs
174	311	241

the analysis of surveys completed by admissions professionals. For both studies, the most-often used measures of NAFs fell under the category of performance factors. As well, for both sets of data, attitudinal factors were the second-most frequently used. The fact that performance and attitudinal factors emerged as the most frequently used NAFs from both data sources suggests that these two factors could be the most widely used categories across a full selectivity range of institutions that use NAFs as part of a holistic review admissions. However, for less-selective institutions, more research is needed.

Major findings

This study produced several important findings. First, the Kyllonen (2005) scheme provided a useful classificatory framework for reanalyzing existing empirical studies as well as in the interview and survey data that were analyzed. Across all sources of data, the results demonstrated that the most commonly used NAFs were as follows in rank order:

- (1) Performance factors;
- (2) Attitudinal factors;
- (3) Creativity; and
- (4) Grit.

The evidence suggests that the most important NAFs used in admissions decisions cluster around two factors. The first is performance factors including levels of engagement, domain proficiency (ability to manipulate specialized knowledge), general proficiency (ability to manipulate and link information across knowledge domains), effort/motivation/engagement (demonstrates willingness to devote extra time to complete a task), discipline/professionalism (degree to which someone avoids negative behaviors), teamwork, leadership (evidence of supervising a task), and management/organization (setting goals and implementing in non-face-to-face settings). The second cluster includes measures of attitudinal factors, which include self-concept, self-efficacy, attribution tendencies, interests, social attitudes/values/beliefs, ethics/morality, intercultural sensitivity, and adaptability/flexibility.

Looking across the findings from the ten interview institutions as well as the institutions represented in the survey data, similar patterns are evident (Appendix A). First, academic factors (grades and curricular rigor) are the most important criteria. However, in the interviews, highly selective

private institutions appear to place more emphasis on NAFs. This is only because virtually all applicants are admissible. The only institution that did not indicate that academic factors were most important was a highly selective private institution where all applicants possess strong academic profiles.

In addition to academic factors, the next most important consideration was contextual factors. Across all universities, contextual factors were the next most important factor. Contextual factors include student attributes such as growing up in a single-family household or being a first-generation student. High school contextual factors included school attributes such as the number of AP courses offered and the percentage of graduates that enroll in postsecondary education. School context was important to not only the ten institutions where interviews were conducted, but also to the admissions officers from the national survey.

While not the most important admission factor, regardless of selectivity and institutional size or control, NAFs are used to admit at least some students. Both the interviewees and survey participant report using NAFs. This is a noteworthy finding for institutional enrollment professionals and the general public. Drawing upon exploratory interviews from the two less-selective institutions (tiers 4 and 5) suggests that NAFs are also used to admit some students who might not be admitted if only their academic factors were considered. The main difference being that, based upon academic factors, these students would be less likely to have academic success. Overall, these results demonstrate the need to understand better the role of NAFs in the college admissions process across a range of selectivity. On any given day, a perusal of articles on college admissions shows the level of student and parental anxiety around earning high test scores and grades, in addition to showing performance in vaguely understood factors used in holistic review. For example, Bovy (2013) notes, “many institutions claim to evaluate applicants based on who they are as people rather than simply looking at test scores and grades—an approach that incites anxiety in students and parents alike.”

Academic and contextual factors were the most important consideration for all institutions in this study. However, paradoxically, this is because virtually all applicants were admissible in terms of academic profile. Thus, NAFs and contextual factors were the deciding factors. As one interviewee stated, “for some students [NAFs] make all the difference.” The results from this mixed-methods study reveal a more nuanced view of all factors that are considered when holistic admissions processes are used to admit students. Findings demonstrate that from the most selective to the least selective, NAFs are an important consideration for at least some of the admitted students.

Additional findings

In addition, it is interesting to note that among the ten interview institutions, relatively few of the highly selective universities had undertaken studies of the criteria used in their admissions decisions. Only three universities had undertaken any research to validate their use of NAFs as to whether these NAFs had indeed *shaped the class* (see [Appendix A](#)). This is a potentially provocative finding that is discussed in greater detail in the conclusion.

Similarly, the results from the secondary analyses of the survey of admissions officers also suggest that NAFs are important factors in determining the admissions decisions for most students. More than 70% of all admissions survey respondents reported that they used NAFs in their admissions decisions. Unfortunately, due to data limitations, it is not possible to report how many of the 174 universities were represented in this analysis.

In [Figure 1](#), it is evident that there were variations across types of institutions in the way NAFs are used. For example, public institutions were more likely to report academic factors, followed by high school and student contexts, as the most commonly used indicators in the admissions decisions. They were also more likely to use algorithmic approaches. Urban Research University (URU), a public university, scored each question and assigned point totals that are then combined with academic factors that are also scored in a formulaic fashion. A similar observation can be made about Metropolitan Public University (MPU) where decisions are made by a formula determined by a state-system office, except for some students who are admitted through the Educational Opportunity Program based on an evaluation of NAFs.

However, these patterns may also be a function of size. Because they have smaller staff ratios with respect to the size of the applicant pool, they may not be able to give admissions applications the same level of individualized attention as private universities (Bloom, 2016; Clinedinst et al., 2015). Public universities in this study are also more likely than privates to rely more heavily on contextual factors—high school and student factors—in making their admissions decisions. This too may be a function of institutional size and funding levels.

Some of the most selective private institutions reported attaching less weight to academic factors such as high school grades and test scores. However, to not report the importance of academic factors is misleading—because *nearly all applicants were academically admissible*. All but two institutions, one a tier 4 institution and the other tier 5, reported that contextual factors were the second-most important factor. Interestingly, some reported high school factors and yet others, that student contextual factors were more important. This is another area that deserves more research. Private institutions were also more likely to consider these specific performance factors, measures of engagement in high school, and/or examples of demonstrated leadership. They were also more likely to consider attitudinal factors such as self-efficacy, personal interests, and intercultural sensitivity. Private

institutions along a continuum of selectivity were also less likely to report using formulaic approaches for admissions decisions. Their smaller size may have enabled more personalized attention to admissions decisions. This may also be because most of the private institutions were more selective than the public institutions. These universities often had to consider NAFs because they selected from a pool of applicants where most were admissible based solely on academic factors. Looking across the patterns in private universities, it is possible that the combination of being smaller, and more selective, results in a more personalized admissions process and necessitates relying more on NAFs to make final admissions decisions (Figure 1).

In addition to performance and attitudinal factors, enrollment professionals also reported the importance of affective factors such as creativity. Grit was also often mentioned as an important consideration but there was clearly a lack of consistency in how institutions were defining grit. Some respondents used grit as a performance factor corresponding to effort/motivation/engagement, or discipline/professionalism. In other instances, it appeared that grit was used to refer to how students succeeded despite the personal contextual factors they overcame, or to indicate the rigor of the curriculum in which the student was enrolled. There simply was no clear definition of grit. Part of the purpose of the study is to make the admissions process more transparent to students and their parents, and grit is increasingly being referenced as an important NAF (Duckworth et al., 2007; Porterfield, 2017; Zinshteyn, 2015). Thus, a clearer understanding of how grit is defined and how it is measured could be helpful. However, the pragmatic question is, given institutional variation, would it be possible to come up with a single, widely used definition and/or common measures of grit?

Use of objective instruments for NAFs

Since some of the interview sites reported using questionnaires to gather data on NAFs, the research team examined the results to determine if there were any patterns in the use of institutionally developed instruments or the use of standardized surveys or inventories. An effort was made to determine if public or private universities were more likely to use such instruments. The first finding is that in this small group of ten interview sites, all of them used an established protocol to help the admissions staff to be as objective and consistent as possible in assessing

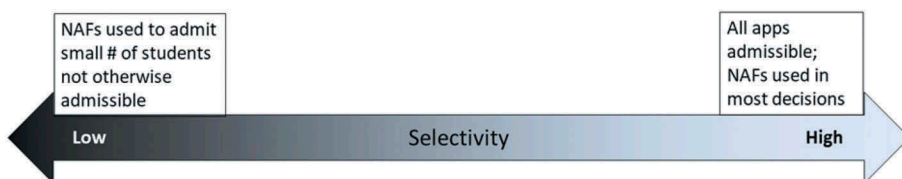


Figure 1. The role of nonacademic factors (NAFs) in admissions decisions.

NAFs. Two private and two public universities employed instruments that applicants had to complete. One public university, MPU, used Sedlacek's Noncognitive Questionnaire, while at Urban Research University (URU) faculty members in the School of Education developed a set of four short-answer prompts. The admissions staff scored these prompts as part of the holistic review process. Two private institutions were using assessment instruments already developed by external commercial vendors. Selective Technical Private Institution (STPI) a small private institution with a technology focus, was starting to use a publicly available instrument that assessed students' locus of control. Highly Selective Private University (HSPU) was piloting an instrument assessing emotional intelligence with merit-aid scholars and is searching for ways to broaden the application of this tool for admissions. Several other institutions, both public and private, made reference to rubrics they had developed that they used to help them assess applicants' academic profile and NAFs.

Overall, these results yield important insights into the range of NAFs that public and private universities collect and how they use them in their admissions processes. The secondary data analysis of admission professionals reveals a pattern similar to the results of the interview data regarding the use of NAFs. Collectively they indicate that performance and attitudinal factors are the most widely used NAFs in admissions decisions.

Conclusions and recommendations

The results from this study demonstrate the use of NAFs across a wide range of institutional size and selectivity, and across public and private institutions. Kyllonen's (2005) framework for classifying nonacademic factors proved to be a useful model for coding a wide range of NAFs as reported by ten interview institutions. Furthermore, the analyses of secondary data revealed that 70% of admissions professionals working at selective colleges and universities also used NAFs.

Which NAFs are used?

Performance factors were the most frequently used, and attitudinal constructs were the next most important NAFs used in admission decisions. Performance factors include constructs that for the most part include domain proficiency, general proficiency, effort/motivation/engagement, discipline/professionalism, teamwork, leadership, and management/organization. Attitudinal constructs include attributes such as self-concept, self-efficacy, attribution tendencies, interests, social attitudes/values/beliefs, ethics/morality, intercultural sensitivity, and adaptability/flexibility. It is worth noting that these results mirror the findings from the qualitative meta-analysis. The empirical studies also found performance and attitudinal factors to be the most frequently used after contextual NAFs.

Triangulating these three sources (meta-analysis, interview, and survey results) suggests that these are the most frequently used NAFs.

Relative importance of NAFs as admission factors

Because the survey data cannot be classified by institution, this discussion is more exploratory because it relies solely on interview data. The interview data suggests that most competitive (tier 1) private universities report using NAFs for virtually all admissions decisions. However, they do not uniformly report using contextual data. Conversely, all public competitive institutions (tiers 1–3) report that following academic factors, contextual factors are the second-most important consideration. The two less selective public and private institutions (tiers 4 and 5) also report using NAFs, but only for a smaller number of students who were on the cusp being admitted or rejected. Intuitively, these results make sense. Less selective institutions are using NAFs to admit some students who might otherwise not be admitted, but whom they believe because of NAFs might be successful. It is also possible that less selective institutions are *looking for a story*. That is, they need an explanation for admitting students whose profile does not suggest that they will be academically successful.

In addition to academic factors, high school and student contextual factors are heavily used because they seem to be more objective and are less costly to consider. Tier 1 private institutions do not uniformly use them, but all selective public institutions use them. This may be the case for public institutions because of smaller admissions staffs and contextual factors that can be more readily collected and analyzed.

There were additional nuanced findings in the interview data. For example, there are indications that some institutions have started to look for tools that will enable them to be more efficient and/or consistent in their assessments of NAFs. Two of the more selective institutions are experimenting with commercially available instruments that would reveal attributes such as creativity or commitments to campus values. Another institution has developed its own questions that would enable them to measure NAFs less subjectively and more efficiently.

Institutional evaluation of NAFs

Another interesting finding from ten sites where interviews were conducted was that few selective schools had undertaken studies of the nonacademic criteria that they use in their admissions decisions to shape the class. Less-selective universities had studied retention rates as an approach to look at the impact of admissions policies. For less-selective universities, NAFs were only used for students who were on the cusp of being rejected. Thus, retention rates were an appropriate metric. The results differed, however, for selective universities. Among the institutions that used NAFs to help craft the class by

looking for students who demonstrate unique, distinctive performance and/or attitudinal traits, it was surprising to learn that only one elite university had undertaken any research or evaluation of the NAFs they used for admissions.

These findings point to the need for additional research. The ten campus interviews undertaken, along with the survey data, indicate that nonacademic factors play a role in admissions across an array of public and private institutions. Students, their parents, and educational advisors seek more insight into what student attributes (NAFs) are valued by universities that employ holistic review. Despite the insights gained from this study, more research is warranted on contextual factors. Given its importance in this study, more information on the data that institutions use to measure high school and student contextual factors in admissions would be helpful.

- (1) Efficacy of NAFs. With increasing scrutiny on admissions offices, it is axiomatic that universities will be asked to demonstrate the efficacy of their NAFs. Our study results raise questions regarding the extent to which institutions have evaluated the impact of NAFs on the student experience or institutional culture. If future court rulings determine that holistic review and the use of NAFs are a new approach to affirmative action, it is possible that the types of studies that were evident in the Gratz (2003) and Grutter (2003) affirmative action cases will be needed.
- (2) NAF instruments. Greater knowledge of how institutions employ commercial, or develop tailored instruments in order to more objectively and possibly more efficiently use NAFs in college admissions, would be valuable to admissions officers and the general public.
- (3) Grit. Given the increasing attention being given to grit as an important nonacademic factor, it was surprising to see how many different operational definitions there were for the term grit. This merits more research.
- (4) Less-competitive public and private institutions (tiers 4 and 5). The results of this study suggest that for less selective institutions NAFs are important for a segment of their applicant pool. In addition, the findings suggest the same NAFs are used. However, these findings are speculative, because the small number of institutions in this category makes these findings exploratory and tentative at best.

Summing up

The results of the qualitative meta-analysis on NAFs, the results from ten campus sites in this study, and the results of survey data attempt to shed more light on rather opaque and misunderstood areas of college admissions. The results of this study suggest implications for prospective college students and their parents, college guidance professionals, and enrollment professionals,

as well as room for further research on these topics. These results for Barron's selective colleges and universities in tiers 1–3 when combined provide solid insights into factors associated with admissions. For less-selective institutions (tiers 4 and 5), our results are exploratory in nature, but the results are very similar to selective institutions. Our findings suggest that the less-selective institutions use the same NAFs and other admissions data are used in at least some settings. However, clearly more research is needed on less-selective institutions.

It is easy to understand why highly selective universities are reluctant to be transparent regarding how they use NAFs. Growing pressure on selective schools to enhance racial/ethnic and socioeconomic diversity may make the criteria used at selective admissions institution more transparent. However, more transparency in turn would likely increase the number of applicants and increase the number of challenges filed by parents and other groups to contest decisions on denied admissions.

Nevertheless, given the increasing number of colleges and universities that are becoming test optional and adopting holistic review processes for admissions, students, parents, admissions counselors, and the general public will demand a clearer understanding of what factors are being considered at the schools in which they are interested. Students deserve a better sense of the relative importance of academic performance, as well as contextual factors and NAFs used in admissions decisions. NAFs and the role of touted factors like “grit” in admission decisions need more research. There is much work to be done in these important areas of college admissions.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

Funding from The College Board made this study possible.

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Appendix A. Admissions Criteria at Ten Interview Institutions

N	Type	Size	Selectivity	Formal Instrument	Academic	HS Context	Student Context	Most Frequent NAF	Assessment	Other
1	Priv	Large	1	No, but starting to use an off-the-shelf instrument	Most imp			Most imp; Performance & affective factors	Not yet but plan assess efficacy of new instrument	Passion for mission of institution is important; Implement off shelf instrument
2	Pub	Multi	3	Analyze data down to census track level	Most imp	2nd most imp	3rd most imp	Performance factors	Studied the effects of their use. Census & demographic data is predictive	Looking for student diversity
3	Priv	Small	1	Home grown rubric	Most imp	2nd most imp	2nd most imp	3rd most imp; Use a constellation of performance and attitudinal factors	Conducted Thrivers study. Looked at retention & student satisfaction. Also do annual survey of counselors of how students are doing	Has been test optional for many years. Another institution where curriculum rigor could be viewed as HS or student contextual info
4	Priv	Small	1	No formal assessment yet, but plan to start doing so have been studying metacognition for 3 years	Most imp	3rd most imp		2nd most imp; Performance factors	Starting to use locus of control instrument; also creativity but no plans to use it now	Starting to get more sophisticated in use of NAFs. It is a STEM school so grades matter a lot
5	Priv	Med	1	Get from Common App and recs	Most imp	2nd most imp	2nd most imp	3rd most imp; Performance & Affective factors	In depth graduation rate studies	NAFs are very important. Diversity and community are key to building their class.
6	Pub	Multi	1	No	Most imp	2nd most imp		3rd most imp; Performance measures	Have conducted two studies seeing if faculty committee could replicate admission decisions	Majority of students admitted on basis of academics but NAFs make all difference for some students

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N	Type	Size	Selectivity	Formal Instrument	Academic Context	HS Student Context	Most Frequent NAF	Assessment	Other
7	Priv	Med	1	No	Most imp		2nd most imp; performance and attitudinal	No assessment of NAFs	Almost all students are admissible based on academic performance alone
8	Priv	Med	4	Get all info from Common App and recs; no instrument	Most imp	3rd most imp	2nd most imp	No assessment of NAFs	Only about 10% are admitted based on NAFs, but for this 10% it makes a big difference; Conservatory students (much more competitive) totally on music performance (NAFs); Curriculum rigor used but it could be both a HS and student measure; NOTE system level sets all standardized admission decisions. They said they looked for grit but it is not clear they had requisite information to determine grit.
9	Pub	Multi but up to MA only	5	For EOP students from interview; counselor recs; EOP application; Sedlacek's NCQ	Most imp for all non-EOP students		Only for EOP students; performance factors and attitudinal constructs	No assessment of NAFs	Just started this new option
10	Pub	Multi	3	Four 150-word questions	Most imp for traditional admit	3rd most imp	2nd most imp; attitudinal constructs,	Will assess effect	