





# The surprising underperformance of East Asians in US law and business schools: The liability of low assertiveness and the ameliorative potential of online classrooms

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Edited by Susan Fiske, Princeton University, Princeton, NJ; received October 4, 2021; accepted February 6, 2022

In the United States, Asians are commonly assumed to excel across all educational stages. We challenge this assumption by revealing the underperformance of ethnic East Asians in US law schools and business schools, two prevalent professional schools that are consequential gateways to societal influence. Whereas most educational and governmental statistics lump all Asians together, we distinguish culturally between East Asians (e.g., ethnic Chinese) and South Asians (e.g., ethnic Indians), the two largest Asian groups in the United States. We propose that East Asians—but not South Asians—underperform academically because their low verbal assertiveness is culturally incongruent with the assertive class participation prized by US law schools and business schools. Across six large studies ( $n = 19,194$ ), East Asians had lower grades than South Asians and Whites despite performing well on admission tests (e.g., Law School Admission Test, Graduate Management Admissions Test). East Asians' underperformance was not explained by academic motivation but by lower assertiveness (whether assessed by self-ratings, peer ratings, or class participation scores)—after controlling for factors such as birth country and English proficiency. Consistent with the assertiveness mechanism, East Asians' underperformance was more pronounced in social courses emphasizing class participation (e.g., leadership, strategy) than in quantitative courses (e.g., accounting, finance). Notably, we found that East Asians' underperformance was mitigated in online classes conducted via Zoom, a communication medium characterized by lower social presence than in-person classes. By revealing a “Bamboo Ceiling” in the classroom, this research highlights the importance of fostering an inclusive classroom for students from diverse cultural backgrounds.

Bamboo Ceiling | cultural psychology | education | assertiveness | in-person vs. online classroom

I had carefully read the class materials, prepared the case, highlighted, outlined, and re-outlined the material the night before, only to sit silently listening as the classroom discussion unfolded. Sometimes, even when I knew I had something great to say, I left class disappointed, having remained mute for two hours ... My struggle to get into the discussion goes something like this ... Ideas flow, but they're not perfect yet, nor do I have quite the right formulation of words. I don't want to make a fool of myself. Time passes and I know I need to get into the discussion but can't manage to raise my hand. Finally, there's the strikeout, where just as my hand is about to spring up, someone else makes my point, and the discussion careens forward in a different way. Class ends. Another missed opportunity. (East Asian American student quoted in ref. 1)

To date, researchers and practitioners have focused on the academic challenges faced by underrepresented and economically disadvantaged ethnic groups in the United States, such as Black and Latino students. In comparison, Asian students have received limited attention, as they are stereotyped to be a “model minority” with consistently high academic achievements (2). Indeed, Asian students attain the highest grades in both math and reading from kindergarten to high school (3, 4). They also outperform other ethnic groups on admission tests, such as the Scholastic Aptitude Test (SAT), the Graduate Record Examinations (GRE), the Graduate Management Admissions Test (GMAT), and the Law School Admission Test (LSAT) (5–8). Given such academic success, Asians are often assumed to excel at every educational stage. As one meme has it, they are “A-sians,” not “B-sians.”

We challenge this stereotype by revealing the underperformance of ethnic East Asians (EAs) in US law schools and business schools, two prevalent and consequential educational settings. Whereas most educational and governmental statistics lump all Asians together, we distinguish culturally between EAs (e.g., ethnic Chinese, Japanese,

## Significance

To date, researchers and practitioners have focused on the academic challenges of underrepresented ethnic groups in the United States. In comparison, Asians have received limited attention, as they are commonly assumed to excel across all educational stages. Six large studies challenge this assumption by revealing that East Asians (but not South Asians) underperform in US law schools and business schools. This is not because East Asians are less academically motivated or less proficient in English but because their low verbal assertiveness is culturally incongruent with the assertiveness prized by US law and business schools. Online classes (via Zoom) mitigated East Asians' underperformance in courses emphasizing assertiveness and class participation. Educators should reexamine pedagogical practices to create a culturally inclusive classroom.

Author contributions: J.G.L. and M.W.M. designed research; J.G.L. and M.W.M. performed research; J.G.L. analyzed data; J.G.L. wrote the paper; and R.E.N. and M.W.M. provided critical revisions.

The authors declare no competing interest.

This article is a PNAS Direct Submission.

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This article contains supporting information online at <http://www.pnas.org/lookup/suppl/doi:10.1073/pnas.2118244119/-/DCSupplemental>.

Published March 21, 2022.

Koreans) and South Asians (SAs; e.g., ethnic Indians, Pakistanis), the two largest Asian ethnic groups in the United States (9).<sup>\*</sup> We propose that EAs—but not SAs—underperform academically because their cultural habit of unassertiveness is incongruent with the assertive class participation prized by US law schools and business schools. Consistent with our proposition, six studies of students at top US law schools ( $n = 11,043$ ) and business schools ( $n = 8,151$ ) revealed that EAs had lower grades than SAs and Whites, an effect mediated by EAs' lower assertiveness. Consistent with the assertiveness mechanism, EAs' underperformance was more pronounced in "social" courses emphasizing class participation (e.g., leadership, strategy) than in "quantitative" courses (e.g., accounting, finance). Notably, we found that EAs' underperformance was mitigated in online classes conducted via Zoom, a communication medium characterized by lower social presence than in-person classes.

Our findings are consequential because these professional schools are gateways to societal influence in the United States. Prospective employers place a heavy weight on law school grades, and "some law firms just won't look at candidates who have below a certain GPA, irrespective of what school they come from" (10). About half of US senators have a Juris Doctor (JD) degree, and their class rank (based on grades) in law school may be referenced throughout their careers (11). Similarly, as the most prevalent graduate degree in the United States, the Master of Business Administration (MBA) is a key portal to the business elite (12). In any given year, about 40% of S&P 500 chief executive officers hold an MBA degree (13). Business school GPA is an important consideration for some employers, especially consulting firms and investment banks (14).

## Verbal Assertiveness in US Law Schools and Business Schools

Assertiveness is defined as "the quality of expressing opinions or desires in a strong and confident way" (15). It is measured by items such as "X speaks up and shares his/her views when it is appropriate" and "X is willing to engage in constructive interpersonal confrontations" (16).

While US education generally encourages students to assert individual opinions (17), US law schools and business schools especially prize verbal assertiveness in the classroom. Law schools use confrontational debate to train students for adversarial legal procedures (18). The so-called Socratic method "requires participants to articulate, develop and defend positions that may at first be imperfectly defined intuitions" (19). It trains students to articulate their views and "respond on their feet and under fire" (20). Starting a century ago, US business schools followed law schools in centering their pedagogy on animated discussions, debates, and role plays of business scenarios (16, 20). The emphasis on verbal assertiveness is institutionalized in the grading policies of US law schools and business schools. In many JD and MBA classes, class participation is a large fraction of students' overall grade (21).<sup>†</sup>

Because assertiveness is considered vital in US law schools and business schools, cultural differences in assertiveness may

give rise to differences in academic performance. To date, few studies have examined the effects of cultural background on academic performance in business schools or law schools (25, 26), and these few studies have lumped all Asian subgroups together despite their distinct cultural differences. To address these limitations and advance theory, we distinguish culturally between EAs and SAs. In the next section, we theorize that EAs—but not SAs—underperform in US law schools and business schools because of their low assertiveness.

## Cultural Differences in Assertiveness

Influenced by Confucianism, EA cultures emphasize humility, harmony, and hierarchy rather than assertiveness (27–30). First, EAs tend to keep their opinions to themselves because reticence reflects humility and maturity (17). The cultural emphasis on humility is reflected in EA proverbs, such as "Those who know do not speak. Those who speak do not know" (31). In EA cultures, students who raise their hands eagerly are sometimes scorned as show-offs (32). EA students tend to scrutinize their ideas and speak up only if they believe that they have a highly valuable comment. Relatedly, they hesitate to raise their hands until they have perfected the answer, but the opportunity to speak may already be gone (1). Second, studies by Heejung Kim (33, 34) found that talking while thinking can impair EAs' cognitive performance, as they make less use of internal speech than do European Americans. Therefore, the pressure for quick, extemporaneous comments in the Socratic classroom may adversely impact EAs. Third, assertive communication often involves disagreeing with ideas expressed by others and thus, threatens interpersonal harmony (9). EAs may be disinclined to argue competitively because doing so may cause one or both sides to "lose face" (27). Fourth, EAs are taught that "the teacher is considered the sole holder and provider of knowledge, and the students are expected to be attentive recipients, with few questions" (35). Whereas questioning the teacher is acceptable and even encouraged in US education (36), such behavior is frowned upon in EA cultures because it challenges the teacher's authority and disrupts the hierarchy.

In light of the above reasons, we propose that EAs may underperform in US law schools and business schools because EAs' cultural habit of unassertiveness is incongruent with the argumentative environment of the Socratic classroom. Such cultural incongruence is illustrated by the experience of a Korean student in a US business school:

In my marketing class, I noticed that my peers were raising their hands to make very minor, at times irrelevant, comments about the subject matter of the day. It came to a point where I only raised my hand if I had something hugely important to add or some new insight into something. I did well on my papers and tests, so I was totally shocked when I got a C+ in the class. When I asked my professor about the grade, she told me that I rarely participated in class and it was difficult to determine how engaged I was in the topic from the evidence of my participation in discussions. (37)

By contrast, SA cultures encourage verbal assertiveness (9). As elaborated in Nobel Laureate Amartya Sen's book *The Argumentative Indian* (38), "Proximity is not alien to us in India. We are able to talk at some length ... And we encounter masses of arguments and counterarguments spread over incessant debates and disputations" (ref. 38, p. 3). Whereas the most popular nonathletic extracurricular club is music for Chinese students,

<sup>\*</sup>In addition to EAs and SAs, our samples also included some Southeast Asians (e.g., ethnic Filipinos, Indonesians, Malaysians, Thais, Vietnamese), but their sample sizes were much smaller given their small population sizes in the United States.

<sup>†</sup>In many US law school classes, "class participation plays a substantial role in the student's final grade" (22), and grades are sometimes based solely on class participation. Similarly, in some US MBA courses, class participation accounts for 50% of the final grade (23, 24).

it is debate club for SA students: 36% of Indian students and 38% of Pakistani students participated in debate clubs in 2018 (39).

While past research has not compared EAs, SAs, and Whites in US law schools and business schools, one study of Canadian students in 7th to 12th grades found that 67% of Whites and 62% of SAs felt comfortable speaking up in class, whereas only 46% of EAs felt comfortable (40). Based on the above theoretical reasoning, we hypothesized that EAs—but not SAs—may underperform in US law schools and business schools because of EAs' low assertiveness.<sup>‡</sup>

## Social Courses vs. Quantitative Courses

Beyond this primary hypothesis, we also examine the type of courses in which EAs' underperformance may be more pronounced. Within business programs, courses are often categorized as quantitative or social (16). For example, courses like accounting, finance, and statistics are more quantitatively oriented, whereas courses like leadership, marketing, and strategy are more socially oriented. Social courses tend to emphasize verbal assertiveness more than quantitative courses, as reflected in grade composition differences. On average, problem sets and examinations count as a larger percentage of quantitative course grades, whereas class participation counts as a larger percentage of social course grades. For example, in study 4's business school, class participation is 25% of the grade for corporate strategy (a social course) but only 5% of the grade for finance (a quantitative course). Because assertiveness is more central to social courses, we hypothesized that EAs' academic underperformance is greater in social courses than in quantitative courses.

## The Ameliorative Potential of Online Classrooms

Our final hypothesis concerns the potential of online classrooms to mitigate EAs' underperformance in courses that demand verbal assertiveness. As the COVID-19 pandemic continues, educators have observed that “students who were not talkative in in-person classes were expressing themselves more frequently in distance learning” (42). Drawing on such observations, we theorize that online classes (e.g., via Zoom) may dampen the social cues that evoke EAs' unassertiveness.

Researchers theorize that communication media differ in social presence, which refers to how much a communication medium facilitates awareness of other people during an interaction (43). Compared with in-person classes, online classes are characterized by lower social presence (44) and thus, are less likely to trigger EAs' cultural norms of “saving face,” yielding to classmates, and deferring to the professor. First, in a physical classroom, classmates' evaluative reactions (e.g., eye-rolling, smirks, laughter) are salient cues for EAs' concerns about “losing face.” By contrast, in online classrooms, expressions are barely visible, and microphones are muted. Thus, EA students may feel less like they are under the gaze of a roomful of people and more comfortable asserting their opinions. Second, online platforms allow students more time to formulate and organize their thoughts before speaking up. The slower pace of the online medium also means that students are less likely to get caught “at a loss for words” in exchanges with assertive

classmates (45). In online classrooms, students also have the option of reading their written comments off of their computer screen. This option is less viable in person. If a student reads out his/her notes in a physical classroom, other students may notice and judge the student unfavorably. Third, in law and business school classrooms, it can be daunting to see many hands go up at every opportunity to speak. This sight may cue EAs to yield the floor to others due to the cultural habits of humility and harmony. In online classrooms, virtual hands are less visually salient and hence, less likely to deter EAs. Fourth, when the professor stands at the front of a physical classroom, it makes the professor–student hierarchy salient, activating the EA cultural expectation that students should be attentive listeners rather than impudent talkers. In online classes, everyone appears side by side on the computer screen, which may reduce cues of hierarchy and increase EAs' assertiveness (46).

In light of the above reasons, we further hypothesize that although EAs tend to underperform in courses that emphasize assertiveness and class participation, this underperformance may be mitigated when such courses are taught online (vs. in person). Importantly, the online format is not a panacea but merely a communication medium that dampens the cultural habits contributing to EAs' unassertiveness. We consider caveats and other solutions in *General Discussion*.

## Overview of Studies

To test our hypotheses, we conducted six large-scale studies at top US law schools ( $n = 11,043$ ) and business schools ( $n = 8,151$ ). Table 1 provides an overview of the key findings of each study. Across the studies, we rule out alternative explanations, such as academic motivation, English proficiency, US/foreign born, and pre-admission academic aptitude (LSAT/GMAT/GRE scores). To ascertain the reliability of our theoretical perspective, we triangulate the assertiveness mechanism by assessing it with 1) self-ratings, 2) peer ratings, and 3) class participation scores. This research was approved by the institutional review boards of the Massachusetts Institute of Technology (protocol no. 1794) and Columbia University (protocol nos. AAAI0771 and AAAA6074). All participants provided informed consent.

## Study 1

Given US law schools' emphasis on argumentation and debate, we first tested whether EAs—but not SAs—underperform in US law schools as a function of EAs' lower classroom assertiveness. To our knowledge, this is the largest study to date on ethnocultural differences in law school academic performance ( $n = 11,043$ ).

**Method.** We obtained privileged data access to the Law School Survey of Student Engagement (LSSSE), a large-scale annual survey about the student experience in law schools. Each year, LSSSE collaborates with a set of US law schools to invite their JD students to participate in the survey. We analyzed four consecutive years of LSSSE data, which involved 22 US law schools that are consistently ranked in the top 50 by *US News & World Report*.

**Sample.** To ensure data reliability and comparability, we applied several exclusion criteria, which excluded about 2% of participants before data analysis. First, we excluded 24 students who self-reported being younger than 21 y old, as they either misreported or entered law school under special circumstances. Second, we excluded 285 part-time students who might differ substantively from full-time students. Third, because JD

<sup>‡</sup>Lu et al. (9) and Lu (41) found that both EA internationals and EA Americans were less assertive than their SA and White counterparts. This finding suggests that EAs' low assertiveness cannot be explained by just English proficiency but rather, has deep cultural roots. Although EA Americans are native English speakers, their family upbringings (e.g., dinner conversations with their EA parents) can still foster unassertiveness.

**Table 1. Overview of studies**

	Sample size	Setting	Compared with SAs and Whites...
Study 1	11,043	22 US law schools	EAs had lower cumulative GPAs, an effect mediated by their lower assertiveness (self-rated)
Study 2	2,423	US business school	EAs had lower cumulative GPAs
Study 3	1,320	US business school	EAs had lower grades in core courses, especially in social core courses; this effect was mediated by EAs' lower assertiveness (peer rated)
Study 4 (preregistered)	2,078	US business school	EAs had lower grades in two social core courses (corporate strategy and operational strategy) but not in a quantitative core course (finance); importantly, EAs underperformed in the two social courses only when taught in person but not when taught online via Zoom
Study 5 (preregistered)	1,752	US business school	EAs had lower grades in a social core course (leadership) when taught in person but not when taught online via Zoom; this effect was mediated by EAs' low assertiveness (class participation score)
Study 6	578	US business school	EAs were less assertive but equally motivated academically

programs are typically 3 y, we further excluded six students who self-reported being in their fourth year. All results were robust without excluding these few cases.

These exclusion criteria yielded a large dataset of 11,043 full-time JD students (53.3% female; 6.7% foreign born;  $M_{\text{age}} = 25.96$  y,  $SD = 3.96$ ); 36.7% were in their first year, 32.9% were in their second year, and 30.4% were in their third year. Of these students, 607 were EA, 238 were SA, 7,317 were White, 668 were Latino, 495 were Black, and the rest belonged to other categories.

**Law school grades (outcome).** Participants were asked: "What have most of your grades been up to now at this law school?" (1 = C- or lower, 2 = C, 3 = C+, 4 = B- ... 8 = A).

**Classroom assertiveness (mediator).** Participants were asked how often they "asked questions in class or contributed to class discussions" (1 = never, 2 = sometimes, 3 = often, 4 = very often). This served as a measure of classroom assertiveness, with higher scores indicating higher assertiveness. While this measure has face validity, we acknowledge that it is a single-item measure and address this limitation in later studies.

**Controls.** We accounted for a broad set of relevant control variables. First, we controlled for each student's score on the LSAT, which is a prerequisite for US law schools. Based on law school records, LSSSE provided LSAT scores in the following ordinal scale: 1 = 120 to 145, 2 = 146 to 150, 3 = 151 to 155, 4 = 156 to 160, 5 = 161 to 165, 6 = 166 to 170, and 7 = 171 to 180.

Moreover, we controlled for age, gender, class year (first, second, or third year), and US/foreign born. Because 93.3% of the students were US born, English proficiency was unlikely to be a confounding variable for any observed differences in assertiveness or law school grades. Indeed, all results were robust when we limited the analyses to US-born students only.

Finally, we controlled for school-level characteristics: 1) private or public and 2) enrollment size (provided by LSSSE in ordinal scale: fewer than 500 students, 500 to 900 students, or more than 900 students).

**Results.** Descriptive statistics and bivariate correlations are displayed in *SI Appendix, Table S1*. Because students were nested within law schools, we conducted multilevel analyses to account for within-school statistical dependence.

**LSAT scores (control).** In terms of LSAT performance, EAs scored as high as SAs ( $B = -0.009$ ,  $SE = 0.09$ ,  $P = 0.92$ ) and Whites ( $B = -0.09$ ,  $SE = 0.06$ ,  $P = 0.11$ ) and significantly higher than Blacks ( $B = 1.46$ ,  $SE = 0.09$ ,  $P < 0.001$ ) and Latinos ( $B = 0.82$ ,  $SE = 0.08$ ,  $P < 0.001$ ).

**Law school grades (outcome).** Despite excelling at the LSAT, EAs had significantly lower law school grades than both SAs (*SI Appendix, Table S2*, model 1:  $B = -0.35$ ,  $SE = 0.09$ ,  $P < 0.001$ ) and Whites (*SI Appendix, Table S2*, model 1:  $B = -0.48$ ,  $SE = 0.05$ ,  $P < 0.001$ ). These results were robust after accounting for LSAT score (model 2), other student-level controls (model 3), and school-level controls (model 4). Although EAs appeared to have higher law school grades than Blacks and Latinos (*SI Appendix, Table S2*, model 1), these differences became nonsignificant once we controlled for LSAT scores (models 2 to 4). That is, EAs did not outperform Blacks and Latinos in law schools once we accounted for pre-admission academic aptitude.

By contrast, SAs performed equally well as Whites ( $B = -0.10$ ,  $SE = 0.07$ ,  $P = 0.17$ ) and significantly better than Blacks ( $B = 0.44$ ,  $SE = 0.12$ ,  $P < 0.001$ ) and Latinos ( $B = 0.43$ ,  $SE = 0.10$ ,  $P < 0.001$ ) in multilevel regressions with controls. The contrasting results between EAs and SAs highlight the importance of differentiating between them.

**Classroom assertiveness (mediator).** EAs had the lowest classroom assertiveness of all ethnic groups. As shown in *SI Appendix, Table S3*, model 1, EAs were significantly less assertive than SAs ( $B = -0.26$ ,  $SE = 0.06$ ,  $P < 0.001$ ), Whites ( $B = -0.42$ ,  $SE = 0.04$ ,  $P < 0.001$ ), Blacks ( $B = -0.45$ ,  $SE = 0.05$ ,  $P < 0.001$ ), and Latinos ( $B = -0.18$ ,  $SE = 0.05$ ,  $P < 0.001$ ). These results were robust after accounting for the controls (models 2 and 3).

**Mediation analysis.** Classroom assertiveness positively predicted law school grades (without controls:  $B = 0.24$ ,  $SE = 0.01$ ,  $P < 0.001$ ; with controls:  $B = 0.22$ ,  $SE = 0.01$ ,  $P < 0.001$ ). These results indicate the importance of classroom assertiveness in US law schools.

As hypothesized, classroom assertiveness significantly mediated EAs' low performance in law school grades (EA vs. SA: indirect effect =  $-0.06$ , bootstrapped 95% CI =  $[-0.11, -0.03]$ ; EA vs. White: indirect effect =  $-0.09$ , bootstrapped 95% CI =  $[-0.11, -0.07]$ ). These results suggest that EAs underperformed as a function of their lower classroom assertiveness.

**Exploratory analyses.** We also explored the interaction effects between US/foreign born and ethnicity on 1) assertiveness and 2) law school grade. None of the interaction terms were significant (all  $P$  values are  $>0.10$ ), suggesting that the ethnic differences in 1) assertiveness and 2) law school grade did not depend on whether a student was US born.

**Discussion.** Contrary to the assumption that Asians excel across all educational stages, study 1 revealed a “Bamboo Ceiling” in GPA at US law schools by analyzing a large dataset of JD students (93.3% US born). Although EAs entered law schools with LSAT scores as high as those of SAs and Whites, EAs had lower academic performance in law schools; by contrast, SAs performed equally well as Whites. Among all ethnic groups, EAs had the lowest classroom assertiveness, which mediated their low academic performance. These effects were robust after controlling for student-level variables (e.g., LSAT score, US/foreign born) and school-level variables (e.g., private/public, enrollment size).

## Study 2

Study 2 extended study 1 in two important ways. First, we examined whether EAs’ underperformance in US law schools is also observable in US business schools, another educational setting that emphasizes classroom assertiveness (16). Second, whereas study 1 used a self-report measure of law school grades, study 2 analyzed objective GPAs recorded by the school to reduce subjective biases. For example, EAs might have self-reported lower grades because of humility (28).

### Method.

**Sample.** We procured data on six consecutive and complete cohorts of full-time MBA students ( $n = 2,423$ ) at a top US business school (37.7% female; 46.2% foreign born;  $M_{\text{entry year age}} = 28.20$  y,  $SD = 2.39$ ). Of these students, 402 were EA, 241 were SA, 986 were White, 439 were as Latino, 88 were Black, and the rest self-identified as other categories.

**MBA GPA (outcome).** We procured final GPA data from the business school’s educational services office, which uses the following scale: A = 5, B = 4, C = 3, D = 2, F = 0. The business school does not have grade nondisclosure policies, which means that recruiters can ask students about their GPAs.

**Controls.** We considered various control variables to rule out alternative explanations. First, we procured quantitative and verbal scores of the required MBA admissions examinations: the GMAT and the GRE. About 90% of the students took the GMAT, and 10% took the GRE. To standardize across the two examinations in different years, we followed the official GMAT and GRE websites to convert all scores to percentiles. Notably, GMAT/GRE verbal score is a reliable indicator of English proficiency. For example, research found that for non-native English speakers who took both the GRE verbal and the Test of English as a Foreign Language (TOEFL), the two scores were highly correlated at  $r = 0.82$  (47).

Second, we controlled for whether a student was born in the United States or abroad, as foreign-born students may be less assertive due to lower English proficiency or unfamiliarity with the US educational system.

Furthermore, we controlled for age, gender, and whether a student was enrolled in a dual-degree program that awards both an MBA degree and a Master of Science degree.

**Results.** Descriptive statistics and bivariate correlations are displayed in *SI Appendix, Table S4*.

As shown in *SI Appendix, Table S5*, model 1, EAs had significantly lower GPAs than SAs ( $B = -0.13$ ,  $SE = 0.02$ ,  $P < 0.001$ ), Whites ( $B = -0.15$ ,  $SE = 0.01$ ,  $P < 0.001$ ), and Latinos ( $B = -0.06$ ,  $SE = 0.02$ ,  $P < 0.001$ ), and did not differ significantly from Blacks ( $B = 0.05$ ,  $SE = 0.03$ ,  $P = 0.09$ ). These results were robust after accounting for GMAT/GRE percentiles (model 2) and the other controls (model 3). By contrast, SAs scored near the top of all ethnic groups and as high as Whites ( $B = -0.02$ ,  $SE = 0.02$ ,  $P = 0.39$ ).

Importantly, these effects were substantively similar when we examined foreign-born and US-born students separately (in regressions with controls). Among foreign-born students, EAs scored lower than SAs ( $B = -0.12$ ,  $SE = 0.03$ ,  $P < 0.001$ ) and Whites ( $B = -0.12$ ,  $SE = 0.03$ ,  $P < 0.001$ ), whereas SAs did not differ significantly from Whites ( $B = 0.01$ ,  $SE = 0.03$ ,  $P = 0.67$ ). Similarly, among US-born students, EAs scored lower than SAs ( $B = -0.07$ ,  $SE = 0.03$ ,  $P = 0.035$ ) and Whites ( $B = -0.09$ ,  $SE = 0.02$ ,  $P < 0.001$ ), whereas SAs did not differ significantly from Whites ( $B = -0.03$ ,  $SE = 0.02$ ,  $P = 0.16$ ).

**Discussion.** Consistent with EAs’ underperformance in US law schools, study 2 revealed a Bamboo Ceiling in GPA at a US business school. Across six cohorts of MBA students, EAs scored near the bottom of all ethnic groups, whereas SAs scored near the top (as high as Whites). Notably, EAs’ underperformance existed for both foreign-born and US-born students, suggesting that it could not be explained by just English proficiency. Although EA Americans are native English speakers, their family upbringing can still imprint the cultural habit of unassertiveness.

## Study 3

Study 3 extended the first two studies in five ways. First, we examined whether EAs’ academic underperformance is replicable at another US business school. Second, whereas study 1 assessed self-rated assertiveness as a mediator for EAs’ low academic performance, study 3 assessed peer-rated assertiveness. Third, instead of cumulative GPA, study 3 focused on the GPA of core courses required of all MBA students. This precludes the possibility that EAs have lower GPAs merely because they select more challenging electives.

Fourth, study 3 was able to distinguish between social and quantitative core courses. This enabled us to test whether EAs’ underperformance is greater in social courses, which strongly emphasize verbal assertiveness and class participation.

Finally, we accounted for the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability) as additional control variables. Notably, assertiveness is related to but distinct from the personality trait extraversion, as “there are important aspects of that trait [extraversion] that are not part of assertiveness (e.g., positive affect) and vice versa (e.g., nonverbal displays of disagreement)” (48).

### Method.

**Sample.** We collected data on four consecutive and complete cohorts of full-time MBA students ( $n = 1,320$ ) at another top US business school (33.5% female; 46.9% foreign born;  $M_{\text{entry year age}} = 28.09$  y,  $SD = 2.41$ ). Of these students, 203 were EA, 117 were SA, 751 were White, 100 were Latino, 79 were Black, and the rest self-identified as other categories.

**Social and quantitative course GPA (outcome).** We procured each student’s core course grades from the business school’s educational

services office. The program uses a 10-point GPA scale: 10 = honors, 7 = high pass, 4 = pass, 1 = low pass, and 0 = fail.

The MBA program had 13 core courses: accounting I (quantitative; “q” hereafter), accounting II (q), decision models (q), finance (q), macroeconomics (q), microeconomics (q), statistics (q), operations (q), leadership (social; “s” hereafter), organizational change (s), strategy (s), marketing I (s), and marketing II. As shown in *SI Appendix, Fig. S1 and Table S6*, an exploratory factor analysis of grades revealed that these core courses loaded on two factors. Courses marked with a q represent the quantitative factor, whereas courses marked with an s represent the social factor. Marketing II loaded on both factors because it was a social course that focused on quantitative analyses; thus, it was not included in our confirmatory factor analysis (CFA). A two-factor CFA model not only fitted the data well ( $\chi^2 = 112.89$ ,  $P < 0.001$ , comparative fit index [CFI] = 0.96, Tucker–Lewis index [TLI] = 0.95, root mean square error of approximation [RMSEA] = 0.05, standardized root mean square residual [SRMR] = 0.05), but also fitted the data significantly better than a one-factor CFA model, in which all 12 courses indicated the same latent factor ( $\chi^2 = 167.98$ ,  $P < 0.001$ , CFI = 0.92, TLI = 0.90, RMSEA = 0.07, SRMR = 0.06;  $\Delta\chi^2 = 55.09$ ,  $P < 0.001$ ). Therefore, we averaged grades for the quantitative courses to compute a GPA-q score and averaged grades for social courses to compute a GPA-s score.

**Assertiveness (mediator).** Each student was rated anonymously by at least four classmates as part of a required peer evaluation about 2 mo after the MBA program started (i.e., after they had already had plenty of opportunities to observe one another’s assertiveness). To measure assertiveness, we used a three-item scale from previous research (9, 16): “X speaks up and shares his/her views when it is appropriate,” “X is willing to engage in constructive interpersonal confrontations,” and “X is able to stand his/her ground in a heated conflict” (1 = strongly disagree, 7 = strongly agree;  $\alpha = 0.84$ ).

**Controls.** In addition to the control variables in study 2 (GMAT/GRE verbal percentile, GMAT/GRE quantitative percentile, US/foreign born, age, gender), study 3 also controlled for the Big Five personality traits as potential confounding variables. To assess the Big Five, we adopted the widely used Ten-Item Personality Inventory (49), which the students completed as part of a required self-evaluation (1 = strongly disagree, 7 = strongly agree) 2 wk after the MBA program started.

**Results.** Descriptive statistics and bivariate correlations are displayed in *SI Appendix, Table S7*.

**Assertiveness.** Consistent with study 1’s results, EAs were the least assertive of all ethnic groups. As shown in *SI Appendix, Table S8*, model 1, EAs were significantly less assertive than SAs ( $B = -0.47$ ,  $SE = 0.08$ ,  $P < 0.001$ ), Whites ( $B = -0.60$ ,  $SE = 0.06$ ,  $P < 0.001$ ), Blacks ( $B = -0.29$ ,  $SE = 0.10$ ,  $P = 0.002$ ), and Latinos ( $B = -0.45$ ,  $SE = 0.08$ ,  $P < 0.001$ ). These results were robust after accounting for GMAT/GRE percentiles (model 2), demographics (model 3), and personality traits (model 4). By contrast, SAs did not differ significantly from Whites, Blacks, or Latinos (all  $P$  values are  $>0.05$ ).

**Grades for social courses (GPA-s) vs. quantitative courses (GPA-q).** EAs had the lowest social course grades of all ethnic groups (*SI Appendix, Table S9*, model 1), whereas SAs performed equally well as Whites ( $B = -0.10$ ,  $SE = 0.13$ ,  $P = 0.42$ ). Across regressions with controls (models 2 to 4), EAs had significantly lower GPA-s than SAs (all  $P$  values are  $<0.001$ ), Whites (all

$P$  values are  $<0.001$ ), Blacks (all  $P$  values are  $<0.01$ ), and Latinos (all  $P$  values are  $<0.001$ ).

Although EAs also performed worse than SAs and Whites in quantitative courses (*SI Appendix, Table S10*), their underperformance was much more pronounced in social courses. A paired-samples  $t$  test revealed that EAs’ mean GPA-s ( $M = 6.25$ ,  $SD = 1.41$ ) was significantly lower than their mean GPA-q ( $M = 7.07$ ,  $SD = 1.30$ ;  $t = -7.30$ ,  $P < 0.001$ , 95% CI =  $[-1.04, -0.60]$ ). By contrast, SAs’ mean GPA-s ( $M = 7.35$ ,  $SD = 1.14$ ) was similar to their mean GPA-q ( $M = 7.35$ ,  $SD = 1.26$ ;  $t = -0.02$ ,  $P = 0.98$ , 95% CI =  $[-0.23, 0.22]$ ).

**Mediation analysis.** As hypothesized, assertiveness significantly mediated EAs’ underperformance in GPA-s (EA vs. SA: indirect effect =  $-0.29$ , bootstrapped 95% CI =  $[-0.52, -0.08]$ ,  $P < 0.001$ ; EA vs. White: indirect effect =  $-0.47$ , bootstrapped 95% CI =  $[-0.65, -0.30]$ ,  $P < 0.001$ ). Although assertiveness also mediated EAs’ underperformance in GPA-q (EA vs. SA: indirect effect =  $-0.08$ , bootstrapped 95% CI =  $[-0.22, -0.01]$ ,  $P = 0.030$ ; EA vs. White: indirect effect =  $-0.13$ , bootstrapped 95% CI =  $[-0.24, -0.04]$ ,  $P = 0.002$ ), the indirect effects were visibly larger in social courses than in quantitative courses. These results suggest that verbal assertiveness is more important in social courses than in quantitative courses.

**Discussion.** Study 3 extended our previous findings to core MBA courses of another US business school. EAs had lower GPAs than SAs and Whites, whereas SAs performed equally well as Whites. Assertiveness mediated EAs’ underperformance, suggesting that EAs had lower GPAs partly because they were less assertive. In further support of the assertiveness mechanism, EAs’ underperformance was more pronounced in social courses that strongly emphasized classroom assertiveness.

## Study 4

Study 4 had two aims. First, we examined whether EAs’ relative disadvantage in social courses (vs. quantitative courses) is replicable at another US business school. Specifically, we procured data on three MBA core courses: corporate strategy, operational strategy, and finance. We tested whether EAs perform worse than SAs and Whites in corporate strategy and operational strategy (social courses that emphasize assertiveness) and whether EAs’ underperformance is less pronounced in finance (quantitative course).

Second, study 4 tested whether EAs’ underperformance in the social courses is mitigated when the courses are taught online (vs. in person). Because of the COVID-19 pandemic, courses that are usually taught in person were taught online via Zoom in 2020 fall and 2021 spring. While the pandemic brought about logistic changes, these changes were unlikely to uniquely benefit EAs in online classes. Thus, if EAs underperformed in social courses when taught in person but did not underperform when taught online, it would constitute preliminary evidence that online classrooms mitigate EAs’ underperformance in social courses that emphasize assertiveness. Analyses were preregistered at [https://aspredicted.org/blind.php?x=LJS\\_R1P](https://aspredicted.org/blind.php?x=LJS_R1P).

### Method.

**Sample.** We analyzed 10 consecutive semesters of full-time students ( $n = 2,078$ ) enrolled in three core courses at another top US business school (41.6% female; 42.3% foreign born;  $M_{\text{graduation year age}} = 30.03$  y,  $SD = 2.28$ ). Of these students, 318 were EA, 199 were SA, 876 were White, 368 were Latino, 105 were Black, and the rest self-identified as other categories.

**Social vs. quantitative courses.** From the business school's educational services office, we procured grades of three core courses: corporate strategy, operational strategy, and finance. We renamed these courses to protect the confidentiality of this sample (especially the 2020 fall and 2021 spring students). We also standardized the grades to  $z$  scores because the grading scale could disclose the identity of the school; results were identical without the standardization.

Class participation is 25% of the grade for corporate strategy and 15% of the grade for operational strategy, whereas class participation is only 5% of the grade for finance. As illustrated in *SI Appendix, Fig. S2 and Table S11*, grades of the three courses loaded on two factors. Corporate strategy and operational strategy are social courses, whereas finance is a quantitative course.

**In-person vs. online classes.** The core courses are offered every semester, often by the same instructors. The courses were taught in person before the pandemic (2019 fall and earlier). In 2020 spring, the courses started in person but shifted to Zoom classes in March 2020 due to the onset of the pandemic. Our analyses excluded 2020 spring because students received a "pass" or "fail" rather than a letter grade per university policy. In 2020 fall and 2021 spring, the core courses continued to be taught online, and students received regular letter grades. For all three courses, class size was similar for in-person and online classes.

Based on our theoretical reasoning, we preregistered an EA  $\times$  class mode interaction effect, such that EAs' underperformance in the two social courses (corporate strategy and operational strategy) would be mitigated in online classes relative to in-person classes.

**Control variables.** Similar to the previous studies, study 4 controlled for GMAT/GRE verbal percentile, GMAT/GRE quantitative percentile, US/foreign born, age, and gender. We also controlled for instructor fixed effects to account for any unobserved instructor characteristics (e.g., some instructors are consistently stricter graders).

**Results.** Descriptive statistics and bivariate correlations are displayed in *SI Appendix, Table S12*. Because students were nested within class sections, we conducted multilevel analyses to account for the within-section statistical dependence.

**Social courses (corporate strategy and operational strategy).** Whereas SAs and Whites did not differ significantly in corporate strategy grade ( $B = -0.17$ ,  $SE = 0.11$ ,  $P = 0.11$ ), EAs had significantly lower grades than SAs and Whites (*SI Appendix, Table S13*, model 1:  $B = -0.48$ ,  $SE = 0.08$ ,  $P < 0.001$ ). However, this main effect was qualified by a significant interaction between EA (vs. SA/White) and class mode (1 = online, 0 = in person; model 2:  $B = 0.57$ ,  $SE = 0.19$ ,  $P = 0.002$ ), such that EAs had significantly lower grades in corporate strategy when taught in person ( $B = -0.63$ ,  $SE = 0.09$ ,  $P < 0.001$ ) but not when taught online ( $B = -0.06$ ,  $SE = 0.16$ ,  $P = 0.74$ ). This interaction effect was robust after we accounted for the control variables (models 3 and 4).

These patterns were the same for operational strategy (the other social course). Whereas SAs and Whites did not differ significantly ( $B = 0.09$ ,  $SE = 0.11$ ,  $P = 0.43$ ), EAs had significantly lower grades than SAs and Whites (*SI Appendix, Table S14*, model 1:  $B = -0.37$ ,  $SE = 0.08$ ,  $P < 0.001$ ). However, this main effect was qualified by a significant interaction between EA (vs. SA/White) and class mode (model 2:  $B = 0.46$ ,  $SE = 0.21$ ,  $P = 0.026$ ), such that EAs had significantly lower grades in operational strategy when taught in person ( $B = -0.44$ ,  $SE = 0.09$ ,

$P < 0.001$ ) but not when taught online ( $B = 0.03$ ,  $SE = 0.16$ ,  $P = 0.85$ ). This interaction effect was robust after we accounted for the control variables (models 3 and 4).

**Quantitative course (finance).** In contrast to EAs' underperformance in the two social courses, EAs, SAs, and Whites did not differ significantly in finance grade—whether the course was taught in person or online (all  $P$  values are  $>0.10$ ). Relatedly, there was no significant interaction effect between EA and class mode on finance grade (*SI Appendix, Table S15*, models 2 to 4, all  $P$  values are  $>0.10$ ). These results are consistent with our theoretical perspective, as class participation is only 5% of the grade for the finance course.

**Discussion.** Study 4 lent further support to the assertiveness mechanism via nuanced analyses of another large sample of business school students. EAs performed equally well as SAs and Whites in finance (quantitative course) but performed worse in corporate strategy and operational strategy (social courses). Importantly, EAs underperformed in social courses when taught in person but not when taught online via Zoom. These results provide preliminary evidence that online classrooms can mitigate EAs' underperformance in social courses that emphasize assertiveness and class participation.

## Study 5

Study 5 had three purposes. First, we tested whether EAs' underperformance in social courses is replicable in a core leadership course (class participation = 20% of the grade) at another business school. Second, we examined the replicability of study 4's finding that EAs' underperformance in social courses is mitigated when taught online (vs. in person). Third, we explored whether assertiveness explains EAs' underperformance in in-person classes (or lack thereof in online classes). Notably, whereas the previous studies measured assertiveness by self-ratings (study 1) or peer ratings (study 3), study 5 examined class participation (recorded by teaching assistants) as a more objective measure of assertiveness.

Based on our theoretical perspective, we made the following predictions. When the leadership course is taught in person, EAs have low course grades because they underperform in class participation but not because they underperform in other course components (e.g., examinations or essays); that is, EAs' underperformance in course grade is uniquely mediated by their lower class participation scores. By contrast, when the leadership course is taught online, EAs' underperformance in class participation is mitigated, and thus, their underperformance in course grade is also mitigated. Analyses were preregistered at [https://aspredicted.org/blind.php?x=8DZ\\_RTR](https://aspredicted.org/blind.php?x=8DZ_RTR).

### Method.

**Sample.** We analyzed five semesters of full-time MBA students ( $n = 1,752$ ) at another top US business school (39.5% female; 50.4% foreign born;  $M_{\text{entry year age}} = 27.90$  y,  $SD = 2.38$ ). Of these students, 344 were EA, 197 were SA, 865 were White, 137 were Latino, 63 were Black, and the rest self-identified as other categories.

**Course grade (outcome).** We procured data on the core leadership course required of all MBA students. The course grade (on a 100-point scale) consists of five components: class participation (20%), case analysis (15%), essay I (6.25%), essay II (18.75%), and final examination (40%).

**Assertiveness (mediator).** Like many other social courses, this leadership course values class participation (scored on a 100-point scale). As stated in the syllabus, while the instructor

aimed to involve as many students as possible, class participation was mostly voluntary. To ensure fairness and preclude instructor bias, teaching assistants were responsible for recording and grading class participation. This grade served as a relatively objective measure of classroom assertiveness.

**In-person vs. online classes.** Our analyses involved four in-person semesters (2018 spring, 2018 fall, 2019 spring, 2019 fall) and one online semester (2021 spring).<sup>§</sup> This core course is taught every semester, often by the same instructors. It was taught in person before the pandemic (e.g., 2019 fall) and was taught online in 2021 spring.

**Controls.** Across the five semesters, a total of four instructors taught this leadership course with the same syllabus. They rotated to teach one or two sections of the course each semester. Notably, the two instructors who taught this course online in 2021 spring also taught it in person before the pandemic. We controlled for instructor fixed effects to compare the online vs. in-person semesters and to account for any unobserved instructor-specific characteristics.

As in the previous studies, we also controlled for GMAT/GRE quantitative percentile, GMAT/GRE verbal percentile, age, gender, US/foreign born, and self-reported Big Five personality traits (49).

**Results.** Descriptive statistics and bivariate correlations are displayed in *SI Appendix, Table S16*. Because students were nested within class sections, we conducted multilevel analyses to account for the within-section statistical dependence (e.g., if some students in a section spoke up frequently, then other students might speak up less). Multilevel analyses also accounted for potential differences among teaching assistants, as each class section had different teaching assistants.

SAs, Whites, Blacks, and Latinos did not differ significantly in course grade or class participation score—whether the leadership course was taught in person or online (all  $P$  values are  $>0.10$ ). Thus, we combined these non-EA ethnicities as one group (“non-EA”) for subsequent analyses.

**Course grade (outcome).** Consistent with study 4’s results, there was a marginally significant interaction effect between EA (vs. non-EA) and class mode (1 = online, 0 = in person) on course grade (without controls:  $B = 1.15$ ,  $SE = 0.65$ ,  $P = 0.078$ ; with controls:  $B = 1.09$ ,  $SE = 0.65$ ,  $P = 0.091$ ), such that EAs underperformed when the course was taught in person (*SI Appendix, Table S17*) but not when it was taught online via Zoom ( $B = 0.13$ ,  $SE = 0.77$ ,  $P = 0.86$ ).

**Assertiveness (mediator).** In support of our theoretical perspective, there was a significant interaction effect between EA and class mode on class participation score (without controls:  $B = 1.89$ ,  $SE = 0.78$ ,  $P = 0.015$ ; with controls:  $B = 1.73$ ,  $SE = 0.76$ ,  $P = 0.023$ ), such that EAs had significantly lower class participation scores than SAs, Whites, Blacks, and Latinos when the course was taught in person (*SI Appendix, Table S18*) but not when it was taught online via Zoom ( $B = -0.76$ ,  $SE = 0.82$ ,  $P = 0.35$ ).

**Other components of course grade.** Regardless of whether the leadership course was taught in person or online, EAs performed similarly to SAs, Whites, Blacks, and Latinos in each of

the other four grade components (i.e., case analysis, essay I, essay II, final examination) in multilevel regressions with controls (all  $P$  values are  $>0.10$ ).

**Mediation analysis.** Unsurprisingly, course grade was correlated with each of the five grade components (all  $r$  values are  $>0.20$ , all  $P$  values are  $<0.001$ ). However, because EAs performed equally well as non-EAs in the other four grade components, only class participation significantly mediated EAs’ underperformance in in-person course grade (EA vs. non-EA: indirect effect =  $-0.75$ , bootstrapped 95% CI =  $[-0.91, -0.61]$ ; EA vs. SA: indirect effect =  $-0.82$ , bootstrapped 95% CI =  $[-1.28, -0.48]$ ; EA vs. White: indirect effect =  $-0.76$ , bootstrapped 95% CI =  $[-0.94, -0.61]$ ).

**Discussion.** Study 5 extended the previous studies by analyzing another core social course (leadership) and examining class participation as a relatively objective measure of assertiveness. When the course was taught in person, EAs had lower course grades than the other ethnic groups, an effect uniquely mediated by their lower class participation scores. When the same course was taught online via Zoom, EAs did not have lower class participation scores and thus, did not have lower course grades. These findings converge with study 4’s findings and provide further evidence that online classrooms can mitigate EAs’ underperformance in social courses.

## Study 6

Our final study explores an alternative explanation for EAs’ low performance in US business schools: academic motivation. Lower academic motivation may result in lower class participation and academic performance. It is possible that EAs care less about MBA GPA and instead, invest more effort in other activities (e.g., job search, student clubs). Nevertheless, we considered this possibility to be improbable because Asian cultures prize academic effort (4).

### Method.

**Sample.** We procured data on another complete cohort of MBA students ( $n = 578$ ) at the same US business school as in study 3 (41.3% female; 41.3% foreign born;  $M_{\text{entry year age}} = 27.97$  y,  $SD = 2.52$ ). Of these students, 125 were EA, 50 were SA, 291 were White, 63 were Latino, 28 were Black, and the rest self-identified as other categories.

**Assertiveness.** In the first week of classes, each student self-rated assertiveness using the same three-item scale in study 3 (9, 16) (e.g., “I speak up and share my views when it is appropriate” [1 = strongly disagree, 7 = strongly agree;  $\alpha = 0.76$ ]).

**Academic motivation.** About a month later, students completed another required survey that assessed their academic motivation. Importantly, the survey took place before students received any course grades, so they could not infer their motivation level from their grades post hoc. We measured academic motivation with a three-item scale adapted from Wallen et al. (16): “I work hard to earn a high GPA at [the business school],” “I believe it is important to excel in academics at [the business school],” and “Having good grades at [the business school] is important to me” (1 = strongly disagree, 7 = strongly agree;  $\alpha = 0.91$ ).

**Controls.** As in the previous studies, we controlled for age, gender, US/foreign born, and the Big Five personality traits (49).

**Results.** Descriptive statistics and bivariate correlations are displayed in *SI Appendix, Table S19*.

<sup>§</sup>In 2020 spring, the course started in person but shifted to Zoom classes in March 2020 due to the onset of the pandemic. In 2020 fall, the business school adopted a “hyflex” (hybrid and flexible) teaching mode to ensure social distancing. For a given section of about 70 to 75 students, there were three classrooms of about 20 students, and the remaining students attended via Zoom from home. The instructor was in one of the three classrooms, while the other two classrooms and the remote students participated via Zoom. Teaching mode rotated for each student from week to week. Given the logistic complications, we decided not to analyze grades of 2020 spring and 2020 fall.



**Academic motivation.** A one-way ANOVA found that the five ethnic groups did not differ significantly in academic motivation ( $F = 0.96$ ,  $P = 0.43$ ). These null results were similar in OLS regressions with controls; EAs were not significantly less motivated than SAs ( $B = -0.21$ ,  $SE = 0.22$ ,  $P = 0.34$ ), Whites ( $B = -0.16$ ,  $SE = 0.16$ ,  $P = 0.32$ ), Blacks ( $B = -0.32$ ,  $SE = 0.28$ ,  $P = 0.25$ ), or Latinos ( $B = 0.11$ ,  $SE = 0.20$ ,  $P = 0.57$ ). These results suggest that academic motivation is unlikely to be a mechanism of EAs' underperformance.

**Assertiveness.** Consistent with our previous studies, EAs were the least assertive of all ethnic groups. As shown in *SI Appendix, Table S20*, model 1, EAs were significantly less assertive than SAs ( $B = -0.35$ ,  $SE = 0.17$ ,  $P = 0.036$ ), Whites ( $B = -0.44$ ,  $SE = 0.11$ ,  $P < 0.001$ ), Blacks ( $B = -0.85$ ,  $SE = 0.21$ ,  $P < 0.001$ ), and Latinos ( $B = -0.51$ ,  $SE = 0.15$ ,  $P = 0.001$ ). These results were robust after controlling for academic motivation (model 2), demographics (model 3), and personality traits (model 4). By contrast, SAs were equally assertive as Whites, Blacks, and Latinos (all  $P$  values are  $>0.05$ ).

**Discussion.** Analyzing another complete cohort of MBA students, study 6 provided further evidence for EAs' low assertiveness. Moreover, this study found that EAs were no less motivated than other ethnicities, thus ruling out academic motivation as 1) an alternative explanation for EAs' low academic performance or 2) an antecedent of EAs' low assertiveness.

## General Discussion

Contrary to the assumption that Asians excel across all educational stages, six studies ( $n = 19,194$ ) revealed that ethnic EAs—but not ethnic SAs—underperform in US law schools and business schools. EAs' underperformance was not explained by academic motivation but by lower verbal assertiveness. Consistent with the assertiveness mechanism, EAs' underperformance was more pronounced in social courses (e.g., leadership, strategy) than in quantitative courses (e.g., accounting, finance). Moreover, two preregistered studies found that online classes via Zoom mitigated EAs' underperformance.

**Methodological Strengths.** Our studies have noteworthy methodological strengths. First, the present research is one of the largest investigations into academic performance in US law schools ( $n = 11,043$ ) and business schools ( $n = 8,151$ ). The large samples enabled us to distinguish between EAs and SAs and to examine their differences in assertiveness and academic performance. Second, we analyzed complete cohorts of MBA students, precluding selection bias in sampling. Third, we triangulated the assertiveness mechanism by assessing it with 1) self-ratings, 2) peer ratings, and 3) class participation scores. Fourth, results were reliable whether we examined grades of particular core courses or cumulative GPA. Fifth, our findings are robust when accounting for a variety of variables, such as academic motivation, English proficiency, US/foreign born, admission test scores, and personality traits. Last but not least, our findings are consistent across multiple large-scale studies.

**Theoretical Contributions.** The present research offers important theoretical contributions by synthesizing several literatures. First, we contribute to the education literature on academic performance. To date, this literature has focused on the academic challenges of underrepresented and economically disadvantaged ethnic groups, such as Black and Latino students (50). In comparison, Asian students have received limited attention, as they are presumed to be a model minority free

from academic difficulties (51). We debunked this presumption by documenting the previously unnoticed underperformance of EAs in two prevalent and consequential educational settings: US law schools and business schools. We further contribute to the education literature by revealing that EAs' underperformance is more pronounced in social (vs. quantitative) courses, which emphasize assertiveness and class participation. In addition to revealing EAs' underperformance and identifying assertiveness as a mechanism, we also provide preliminary evidence for online classrooms as a mitigating medium. This finding extends the growing literature on online classrooms, suggesting that this medium has the potential to level the playing field for students who are less culturally predisposed to argumentative and rapid-fire classroom discussions.

Second, we extend the literature on the Bamboo Ceiling (9, 37, 41, 52). While previous studies focused on EAs' underrepresentation in leadership (9, 41), the current studies revealed EAs' underperformance in the classroom. Importantly, our studies demonstrate that this is not a pan-Asian issue but an issue of cultural mismatch in assertiveness that disadvantages EAs but not SAs. These findings add to the literature on cultural mismatch in education (53, 54). Past studies have shown that first-generation university students in the United States underperform “because interdependent norms from their mostly working class backgrounds constitute a mismatch with middle class independent norms prevalent in universities” (53). In line with this literature, our studies suggest that EAs experience a Bamboo Ceiling in US law schools and business schools because of the cultural mismatch in assertiveness.

Third, we contribute to the literature on cultural psychology by elucidating the role of cultural background in academic performance in professional schools. Moreover, we move beyond the East–West contrast to expose differences within the “Asian” umbrella (9, 41, 52, 55). In light of the current findings, future studies should distinguish between EAs and SAs both theoretically and empirically (e.g., when collecting demographic information and conducting analyses).

**Practical Implications.** This research also offers broad educational and societal implications. First, rather than assuming that Asians always excel academically, educators should recognize EAs' underperformance in US law schools and business schools. This underperformance is noteworthy because success in these professional schools can be consequential for careers in the political and corporate worlds (10, 14). People (including EAs themselves) may have overlooked EAs' underperformance because they have high academic achievements at other educational settings (e.g., K–12, college, GMAT, LSAT). Thus, when people think of academic underperformance, EAs usually do not come to mind. Additionally, because SAs perform well in US law schools and business schools, EAs' underperformance may be obscured when EAs and SAs are lumped together as a monolithic Asian category.

Second, educators should foster a culturally inclusive classroom environment. Pedagogical practices without discriminatory intent may nonetheless adversely impact students from certain cultural backgrounds. To reduce the strain of the Socratic classroom on EA students, educators should explore pedagogical adjustments and innovations. Although studies 4 and 5 provide converging evidence that EAs' underperformance was mitigated in online classes conducted via Zoom, this medium is by no means a panacea. In particular, while our studies examined top school students who tend to be highly motivated academically, the low social presence of online classrooms may make it easier for unmotivated students to

hide behind the computer screen (56). Thus, future research is needed to test other ways to help unassertive students. One way is “warm calling.” An instructor could post discussion questions before class and ask students to share their responses privately. If there are insightful responses from unassertive students, the instructor could inform them in advance that they will be called upon to share during class. Another way is to provide additional channels of class participation (e.g., an online forum where students post comments after class). To cultivate an inclusive classroom, educators should reexamine culturally bound practices of teaching.

Third, US law schools and business schools should reflect on their academic evaluation systems. Consider the aforementioned story of the Korean student who received a C+ in his marketing class because he only wanted to make substantive comments and thus, raised his hand less frequently than his classmates. Professors should appreciate cultural differences among students and value both the quantity and quality of class participation. As law schools and business schools become more diverse, educators should adapt their teaching and recognize that there can be more than one prototype of a successful JD or MBA student. Indeed, scholars have questioned the “one-size-fits-all” education model and called for improving inclusiveness by curbing the use of the Socratic method (57). As influential legal scholar Lani Guinier observed, “the challenge is to accommodate those who don’t thrive in the most adversarial and intimidating environment” (58). The EA student who described her classroom struggles (in the epigraph) noted: “It is ironic that the pressure created from focusing on participation can take away from active listening and detract from genuine learning. Some days I’m more focused on the need to perform in front of my classmates than on learning with them. By focusing on what I’m going to say next, I am not plugged into the learning in the moment—and that’s really the point” (1).

Fourth, EA students should be aware of their potential underperformance in US law schools and business schools. They could benefit from activities and workshops that empower them to speak up in the Socratic classroom. For example, the EA presidential candidate Andrew Yang participated in debate training in school and represented the United States in international tournaments (59).

## Conclusion

Drawing on six large studies ( $n = 19,194$ ), we revealed that ethnic EAs—but not ethnic SAs—experience a Bamboo Ceiling in US law schools and business schools. Contrary to the model minority myth, EAs had lower grades than SAs and Whites despite excelling in admission tests. This is not because EAs were less academically motivated or less proficient in English but because their low verbal assertiveness was culturally incongruent with the assertive class participation prized by US law schools and business schools. EAs’ underperformance was more pronounced in social (vs. quantitative) courses emphasizing assertiveness and class participation and was mitigated when the same social courses were taught online (vs. in person). Overall, this research highlights the importance of fostering an inclusive classroom where students from diverse cultural backgrounds can thrive.

**Data availability.** The authors signed nondisclosure agreements in order to access the confidential datasets on academic performance. For study 1, data from the LSSSE were used with permission from the Indiana University Center for Postsecondary Research (CPR). The opinions and conclusions contained in this paper are those of the authors and do not necessarily reflect the position or policy of LSSSE, participating schools, or CPR. Data for studies 2 to 6 were procured from various US business schools. Interested researchers can contact the authors to be connected to these organizations.

**ACKNOWLEDGMENTS.** We thank the participants of the Institute for Work and Employment Research seminar, Erica Bailey, Mary Camerlengo, Liao Cheng, Chad Christensen, Jared Curhan, Jeff Derrick, Joseph Doyle, Jay Duda, Roberto Fernandez, Melissa Freedman, Sean Hardwick, Yujia Jin, Erin Kelly, Yeonjeong Kim, Tucker Kuman, Dawna Levenson, Priya Mehla, Valerie Purdie-Greenaway, Kyra Rodriguez, Krishna Savani, Rajiv Shridhar, Aaron Wallen, Changlan Wang, JoAnne Yates, Shi Yu, and other colleagues at MIT and Columbia University for their helpful feedback or research assistance. This research was supported in part by Columbia Business School Interdisciplinary Research Grant 480544 (to M.W.M.).

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