2-2023

One Size Does Not Fit All: A Comparison of White, Latinx, and Black Student's Unadjusted and Adjusted GPAs in a College of Business and Public Administration of a Hispanic Serving Institution

Francisca Beer
California State University San Bernardino, fbeer@csusb.edu

Daniel MacDonald
CSUSB, DMacDonald@csusb.edu

Recommended Citation

One Size Does Not Fit All: A Comparison of White, Latinx, and Black Students' Unadjusted and Adjusted GPAs in a College of Business of A Hispanic-Serving Institution

Francisca Beer, PhD
Accounting and Finance Department
California State University San Bernardino

Daniel MacDonald, PhD
Economics Department
California State University San Bernardino

Corresponding Author: Francisca Beer, fbeer@csusb.edu

ABSTRACT

Because higher education creates more informed individuals, healthier citizens, social prestige, job satisfaction, and numerous other non-economic benefits, it is important that all members of society have opportunities for successful educational achievement. Using data for undergraduate students enrolled in a business college of a large Hispanic Serving Institution (HSI), this study documents the existence of an unadjusted GPA gap between White students and ethnic minority students. This study also shows that the unadjusted GPA gaps decrease when socioeconomic indicators are introduced in the analysis. The gaps continue to decrease when units are taken, transfer status, age, and student status are added to the analyses. Findings also show that although the differences between White and Latinx GPAs can be explained by the covariates used in the analyses, the same cannot be concluded for Black students. Adding the same covariates reduces the gaps but does not eliminate them. Latinx students thus appear to benefit more than Black from being enrolled in a HIS. To sum up, while a significant amount of the difference between White and Latinx students can be explained by differences in socioeconomic status and other factors introduced in the regression analyses, the same cannot be said about Black students. We think that this is an important outcome that deserves substantial investigation. One size does not fit all.

Keywords: Opportunity gap, achievement gap, Hispanic Serving Institution, business school, higher education, earnings gap, equity gap.

Núñez, & Sansone (2019), concentrates on "servingness," i.e., providing resources to support Latinx students rather than simply enrolling them. In the remainder of this manuscript, the institution surveyed will be referred to as the "College."

Interestingly, despite national statistics suggesting that most institutions across the country have experienced decreasing enrollment, **the College** studied breaks the mold. The number of Latinx students enrolled in fall 2019 increased by 7% from the previous year. The number of White students increased by 8% and the number of Asian students by 6%. The number of Black students is lower than it was the previous year by 12%. However, since the quality of an institution is not captured by enrollment alone,

we also analyzed GPAs (Unadjusted GPAs). Specifically, similarly to what was done in other studies, we compared the GPAs of students from various ethnic/race groups to White students and performed several within-group comparisons. Findings show that an unadjusted GPA gap exists between White and ethnic minorities. We then compared students' GPAs after adjusting for some socioeconomic indicators (Adjusted GPAs). As discussed in the literature review that followed, these socioeconomic indicators are similar to those used in previous research. They include Pell Grant, first-generation, student status, transfer status, units taken, and age. Findings indicated that the Adjusted GPA gap decreased and even disappeared for all ethnic groups, with the exception of Black students. One size does not fit all! In the College of business of an HSI institution, the GPA gaps between White and Latinx disappear when socioeconomic variables are included in the analyses. The gap decreases but continues to exist for Black students.

We think that focusing on an HSI is an important contribution since previous studies have used data from private flagship research universities, elite liberal arts colleges, and selective historically Black colleges and universities (Bowen & Bok, 1999; Espenshade & Radford, 2009; Massey & Probasco, 2010; Martin et al., 2017). Additionally, a focus on business students is critical if we are serious about transforming the workplace. Data from the US Equal Employment Opportunity Commission (EEOC) indicate that Blacks and Latinx Americans are greatly underrepresented in the managerial class.[1]

This study includes four sections. The second section describes the literature and presents the research questions. Section three introduces the data and methodology. Section four discusses the findings. The last section concludes this research, offers suggestions for future research and addresses this study's limitations.

Literature Review and Hypotheses
Unadjusted Gap[2]

Numerous studies have pointed to an achievement gap between White and minority students (Espenshad & Radford, 2009; Massey & Probasco, 2010). These studies identified high school experiences (Lareau, 2011; Klugman, 2012), course selection in high school (Wolniak & Engberg, 2010; Fletcher & Tienda, 2010), and growing up in depressed neighborhoods (Massey et al., 2003) as factors which explained the differences between White and minority students. Studies also showed that the nature of the curriculum, as well as commonly used pedagogical practices, increased the achievement gap between Whites and minorities (Banks, 2004; Gay, 2004; Grant, 2003; Popkewitz, 1998). Banks (2004) and Grant (2003) reported that the achievement gap between Whites and others is one of the consequences of the cultural mismatch between teachers and students, creating an atmosphere in which teachers may have nothing in common with the students they teach. Coleman et al. (1966) further suggested that the ethnic makeup of the school, the student's sense of control of their

---

[1] Among executive/senior-level officials and managers, Blacks and Latinx Americans account for just three percent and four percent of the total, respectively. Among first-and mid-level officials and managers, Blacks and Latinx Americans each account for just seven percent of the total.

[2] Although we decided to refrain from using the terms achievement gap, opportunity gap, and/or equity gap, previous studies use these terms. In this section, presenting the literature and the hypotheses, we use the terminology used by these studies.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

environments, their sense of power over their futures, and the teachers' verbal skills contributed to the achievement gap between groups. Finally, studies pointed to the stereotype bias to explain why differences remained even when students enrolled in College with similar skills and preparation (Jencks & Phillips, 1998; Massey et al., 2003). Stereotype biases influence students' achievement. Specifically, underrepresented students may underperform because they are afraid that peers, mentors, or colleagues are applying stereotypes to them at any given moment (Keller, 2010). Teachers' biased perceptions of their students' academic abilities have the potential to develop into a self-fulfilling prophecy. These biased perceptions might impact how they instruct these students as well as the expectations they have about these students' ability to perform. These behaviors can impact their students' self-image and performance (Rosenthal & Jacobson, 1968).

A GPA gap has also been identified between male and female students (Conger & Long, 2010). Since the 1980s, males have been underrepresented in post-secondary institutions, have finished their education at a lower rate, and have obtained lower grades than females (Caskie et al., 2014). The gender gap favoring female undergraduates is apparent in different institutions and across different ethnic groups (Goldin et al., 2006). However, the female advantage in terms of enrollment does not describe populations in science, technology, engineering, and mathematics (STEM) (Fox et al., 2011). It is noteworthy that although promoting females' participation in STEM fields has been robust, promoting females in business colleges has not received the same attention (Hung et al., 2020).[3]

Based on these studies, our research questions are: Does a GPA gap between White students and students of other ethnicities exist in the College? Are female GPAs higher than male GPAs in the College?

Adjusted Gap
Other covariates used in this study include Socioeconomic Status (SES), units taken, transfer status, age, and student status. Most of the previously published studies included these variables.[4]
SES is proxied by income level and first-generation status (Pascarella et al., 2004; Sirin, 2005). Flores (2007) found that Black, Latinx, and low-income students lacking the resources which contribute to learning earn lower GPAs. In most studies, income level is proxied by whether students received a Pell Grant or not. Additionally, first-generation students encounter more obstacles to success than do students who have parents with a 4-year degree (Engle, Bermeo, & O'Brien, 2006; Housel & Harvey, 2009; Ostrove & Long, 2007).

Units taken are negatively correlated with performance (Gleason, 1992). This is particularly true for students on the lower spectrum of socioeconomic status who have to work while attending school to provide for themselves and their families. Studies have also suggested that transfer students have a difficult time adjusting to full-time, college-level courses (Fauria & Fuller, 2015) and that age influences

---

[3] The GPA gap has also been identified between American students and students from other countries (Coleman et al., 1966; Jencks & Phillips, 1998), between students with disabilities and other students (Vickerman & Blundell, 2010) as well as between students from the LGBTQ group and others (Renn, 2017).

[4] These variables have been collected by the IR from the institution studied.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

achievement. Hartley and Trueman (2003) reported that students aged 21 and younger and non-traditional students aged between 21 and 50 are those who performed best. Finally, the literature about students' status indicated that as minority students progress through their academic careers, their grades often decrease (Harackiewicz et al., 2019). Some researchers have documented that this decrease is probably the result of the workload and the difficulty of courses during the junior and senior years (Stevens et al., 2014 & Bok, 2020). When White males are used as the benchmark, White females have a significantly higher unadjusted and adjusted GPA than White males. White males' unadjusted GPAs are significantly higher than the GPAs of Latinx and Black males or females. Previous studies have shown that age, SES, student status, transfer status, and units taken reduce the gaps and decrease the female advantage (Hung et al., 2020; Kugelmass & Ready, 2011; Martin et al., 2017; Oates, 2009; Ladson-Billings, 2006; Allen, 2008, & Noguera 2009).

Based on these studies, our research questions are: Do the GPA gaps in the College of Business between White students and students of other ethnicities continue to exist after adjusting for SES, units taken, transfer status, age, and student status? Does the female advantage in the College of Business persist after adjusting for these same variables?

Data And Methodology

Data

The dataset includes GPA earned by undergraduate students during the 2018-2019 academic year. The data are organized by terms, i.e., fall 2018, winter 2019, and spring 2019. It focused on students who identify as White, Latinx, Asian, Black, or two or more races. The small number of observations for Pacific Islanders and American Indian/Alaskan Natives precluded us from using these data.[5]. The project obtained approval from the Institutional Review Board at the institution in July 2020 (IRB-FY2021-7). To maintain students' privacy, each course grade was linked to an anonymized student ID. Table 1 summarizes the dataset.

---

[5] Less than .03 percent of students have selected Pacific Islanders, and less than .01 have selected American Indian/Alaskan Native.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

Table 1
*Summary Statistics**

Variables	Summary
Female	44.2%
Age	23.146 years old
Units taken during the term	13.729 units
GPA	2.895
Pell	64.4%
First Generation	82.1%
Freshman/Sophomore	29.2%
Transfer	36.5%
Latinx	72.7%
White	13.4%
Asian	5.7%
Black	5.5%
2 or more races	2.2%

*IR and authors' calculations. The sample pools students across each term during the 2018-2019 academic year, during which they took at least one class. The sample excludes a small number of transient students, students with non-traditional grades, and students with missing information such as age variables. Data covered the pre-Covid period as well as the period before the institution decided to use semesters rather than quarters.

Data in Table 1 shows that the dataset includes more males (56%) than females (44%). These students are approximately 23 years old and have an average GPA of 2.89. Eighty-two percent of them are first-generation, and more than 64% are Pell Grant recipients. Approximately 13% identify as White, 72% as Latinx, 5.5% as Black, 5.7% as Asian, and 2.2% as two or more races (non-Latinx). Approximately 36.5% are transfer students.

Note that foreign students are not included in the analyses mainly because studies show that international students have a different experience than domestic students. Foreign students must adapt to many new changes when first entering a college abroad, including the cultures and customs of the host country, loneliness, depression, arrival confusion, somatic complaints, time pressure, adjustment to food and climate, finance issues, stress, language problems, difficulty in making friends, and difficulties in finding employment (Antonio, 1989; Berry & Kostovcik, 1983; Chataway & Berry, 1989; Church, 1982; Finsterbusch, 1992; Klineberg & Hull, 1979; Mickle, 1985; Rohrlich, 1991; Uehara & Hicks, 1989; Walker, 1999).

Table 2 reports the GPA by ethnic group, disaggregated by gender. Apart from Asian females (3.14), the highest GPA is held by White males (3.07) and White females (3.22). Aside from Latinx students and those who have selected "two or more races," the female advantage in terms of GPA characterized all ethnic groups (Goldin et al., 2006). Note that the female advantage is very small for Latinx students (2.86 for females and 2.85 for males). The findings in the table are consistent with what has been reported in the literature ((Kao & Thompson, 2003; Bowen et al., 2009; Kugelmass & Ready, 2011).

Table 2
Student Outcomes by Race/Ethnicity: Per ethnic groups and by Gender*

Race/Ethnicity by Gender	Average GPA	Percentages
White male	3.07 (683)	13.4%
White female	3.22 (389)	
Latinx male	2.85 (3184)	72.7%
Latinx female	2.86 (2631)	
Black male	2.68 (211)	5.5%
Black female	2.71 (230)	
Asian male	3.01 (248)	5.7%
Asian female	3.14 (208)	
two or more races (non-Latinx) male	2.98 (115)	2.2%
two or more races (non-Latinx) female	2.83 (64)	
TOTAL	(7963)	99.5%*

*Reported total does not reach 100% as neither Pacific Islanders, American Indian/Alaskan Natives, nor Non-Resident students are included. Since each observation represents an individual student during a term in the academic year, any student can appear three times in the study (i.e., fall, winter, and spring). Percentages in the above table are calculated based on a total of 7963. White students, 13.5% (1072/7963); Latinx students, 72.7% (58117963); Black students, 5.5% (441/7963); Asian students, 5.7% (456/7963); Students of two or more races, 2.2% (179/7963).

Methodology

The unadjusted GPA gaps, defined as the overall difference in average GPA between students from different ethnic groups, are evaluated using equation (1) (Kao & Thompson, 2003; Kugelmass & Ready, 2011):

$$Y_i = \beta_0 + \delta_1 * Race\_Ethnicity_i + \varepsilon_i \quad (1)$$

The dependent variable, Y_i, is the student's GPA, and the independent variable $Race\_Ethnicity_i$ the student's ethnicity. The regression coefficient δ_1 captures the relationship between dependent and independent variables. The explanatory variable $Race\_Ethnicity_i$ is a dummy variable taking the value of 1 if the student is of a particular racial/ethnic group and 0 otherwise.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

The second regression focuses on the adjusted bias. In this case, SES (Pell Grant and first-generation), student status, transfer status, units taken, and age are added (Xk_i). The Adjusted gap is estimated with equation (2):

$$Y_i = \beta_0 + \delta_1 * Race\_Ethnicity_i + \beta_k * Xk_i + \varepsilon_i \ (2)$$

The regression coefficients β_k are the observed mean changes in Y_i when all the other predictors are held constant. The variable age and unit taken are continuous, and SES is captured by two dummy variables: Pell status and first-generation status. For both dummy variables, a value of 1 is given if the conditions are true and 0 otherwise. Transfer status is also a dichotomous dummy variable (1 if the condition is true, 0 otherwise). Student rank takes the value of 1 if the student is either a freshman or a sophomore and 0 otherwise.

Main Results

Findings are presented in four sections. The first section compares the unadjusted and adjusted GPA of the various ethnic groups studied, with White students as a reference group (i.e., both male and female White students). The second section compares the unadjusted and adjusted GPA of the various ethnic groups studied, with White males as a reference group. Section three evaluates the equality of coefficients between genders within and across ethnic groups. The last section presents additional results when age and student status are evaluated.

Note that since the covariates such as SES and age are likely to be related to units taken, the collinearity among the covariates used to generate the Adjusted gaps have been evaluated. While such collinearity does not necessarily compromise statistical inference, it can make the estimated coefficients less precise. As a way to test for collinearity, Variance Inflation Factors (VIFs) were calculated for the covariates. None of the coefficient VIFs were found to be greater than 2 or 3. Since the threshold for multicollinearity problems is having a VIF greater than 10, multicollinearity is not a problem in the models.

Predictors of Unadjusted and Adjusted GPA gaps per ethnic group compared to White students (male and female)

Table 3 presents unadjusted and adjusted differences in GPA across the five racial/ethnic groups studied. A negative coefficient implies that a specific racial/ethnic group has a lower GPA than White students. The statistical significance at the 99% and 95% confidence levels ($p<0.01$, $p<0.05$) are symbolized by the usual number of asterisks next to the coefficients. The heteroskedasticity-robust standard errors are reported in parentheses below the coefficients.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

Table 3

Predictors of Unadjusted and Adjusted GPA Gaps per ethnic group compared to White

Race/Ethnicity	Unadjusted	Adjusted
Latinx	-0.28**	-0.08
	(.03)	(.05)
Black	-0.43**	-0.17*
	(.05)	(.07)
Asian	-0.06**	0.003
	(.05)	(.07)
two or more races	-0.20	-0.08
	(.08)	(.11)
Intercept	3.13	0.48
	(.03)	(.29)
Obs.	7,996	4,970
R^2 (ADJUSTED)	0.0162	0.1596

Source: Office of Institutional Research. _____ *Notes*: Reference group: White students. Heteroskedasticity-robust standard errors are reported in parentheses. All regressions control for academic terms (fall, winter, spring) in which GPA is observed. ** and * indicate statistical significance at the 99% and 95% confidence levels (p<0.01, p<0.05), respectively. The intercepts are those for the baseline group. Other covariates include Age, SES, Class status, Units taken, and Transfer status.

With the exception of students from the two or more races group, the unadjusted GPA of White students (i.e., females and males) are significantly higher than others. Latinx students' GPAs are .28 lower than White students (-0.28, $p < .05$), Black students' GPAs are .43 lower (-0.43, $p < .05$), and Asian students are .06 lower (-0.06, $p < .05$).

When adjusted differences are compared, the only remaining statistically significant difference between GPAs is between White students and their Black counterparts (-0.17, $p < .05$). Latinx students' GPAs are no longer statistically lower than White students' GPAs. Asian students' GPAs are not statistically different from White students' GPAs. The Adjusted gaps between students from two or more races and White continue to be insignificant.

Predictors of Unadjusted and Adjusted GPA gaps disaggregated by gender compared to White males.

Table 4 presents unadjusted and adjusted differences in GPA across the five racial/ethnic groups per gender. White males are used as the benchmark for these comparisons rather than both genders of White ethnicities. The table is organized similarly to the table above.

Table 4

Predictors of Unadjusted and Adjusted GPA Gaps disaggregated by Gender compared to White males.

Race/Ethnicity by Gender	Unadjusted	Adjusted
White female	0.15** (.05)	0.12* (.05)
Latinx male	-0.23** (.04)	-0.09* (.04)
Latinx female	-0.22** (.04)	-0.09* (.04)
Black male	-0.39** (.07)	-0.26** (.07)
Black female	-0.36** (.07)	-0.27** (.07)
Asian male	-0.06 (.06)	-0.04 (.06)
Asian female	0.07 (.07)	0.05 (.07)
two or more races male	-0.10 (.09)	-0.08 (.09)
two or more races female	-0.24 (.15)	-0.19 (.15)
Intercept	3.07** (.04)	2.43** (.15)
Obs.	7,996	7,698
R^2 (ADJUSTED)	0.0179	0.1011

Source: Office of Institutional Research. _____ *Notes*: Reference group: White males. Heteroskedasticity-robust standard errors are reported in parentheses. Heteroskedasticity-robust standard errors are reported in parentheses. All regressions control for academic terms (fall, winter, spring) in which GPA is observed. ** and * indicate statistical significance at the 99% and 95% confidence levels (p<0.01, p<0.05), respectively. The intercepts are those for the baseline group. Other covariates include Age, SES, Class status, Units taken, and Transfer status.

When unadjusted differences are compared, White females have significantly higher GPAs than White males' (.15, $p < .05$). White males' 'GPAs are significantly higher than Latinx males' GPA (-.23, $p < .05$), and Black males' GPA (-.39, $p < .05$). The gaps between White males', Asians, and two-or-more races are not significant. White males' 'GPAs are also significantly higher than the GPA of Latinx females (-.22, $p < .05$) and the GPA of Black females (-.36, $p < .05$). The Unadjusted gaps between White males' and Asian females and two-or-more races of females remain not significant.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

Comparing adjusted GPA reduces the gaps. The gaps are (-.09, *p*< .05) for Latinx males' and (-.26, *p* < .05) for Black males. These numbers represent a reduction of the GPA gaps by approximately 40% for Latinx and 67% for Black. The gaps between White males' and Latinx females also decrease. They are now .09 (*p* < .05) for Latinx females and .27 (*p* < .05) for Black females. Adding covariates reduces the GPA gap between White males' and Latinx females by 66.67%. The gap decreases by 58.97% in the case of Black females. The Adjusted gaps between White males and Asian females and two-or-more races of females continue to be insignificant.

Within Group and Across Group Comparisons of Adjusted GPA gaps

Several Wald tests to evaluate the equality of coefficients between genders within a specific ethnic group (within-group comparisons: e.g., Black males and Black females, Latinx males' and Latinx females, etc.) have also been computed. Likewise, we use Wald tests to assess the equality of the coefficients across ethnic groups for a specific gender (across group comparisons: e.g., White males' and Black males, White females and Black females, etc.).[6]

Findings of equal coefficients between genders within a specific ethnic group show that besides Latinx students, female students outperformed their male counterparts for all ethnic groups. Findings of equal coefficients between genders across ethnic groups indicate that male GPAs are significantly different from all other male GPAs. Findings are the same for females, and female GPAs are significantly different from each other.

Age and Student Status

Age.

Hartley and Trueman (2003) reported that students aged 21 and younger and non-traditional students aged between 21 and 50 are those who performed best. We thus model student performance as a quadratic function of age. We posit both a linear and a non-linear relationship between the two variables. We find that while the linear relationship between performance and age is positive and statistically significant – confirming that performance does improve with age – the quadratic relationship is negative. This means that as students get older, the positive contribution of age to performance begins to slow down and eventually becomes negative. Both the positive linear relationship and the negative quadratic relationship are statistically significant (*p < 0.05*).

---

[6] Due to space limitations, detailed information about the tests was not added to the manuscript. More information is available upon request.

Student Status.

The literature about students' success indicates that as minority students progress through their academic careers, their grades begin to decrease (Harackiewicz et al., 2019). This decrease in grades is partially explained by the larger workload and general difficulty of courses during the junior and senior years compared to freshman and sophomore years (Stevens et al., 2014). On the other hand, studies also suggest that freshmen, sophomores, and juniors have a difficult time managing tasks. Since students' ability to multitask increases over time, GPAs are expected to increase as students are more experienced and, therefore, more adept at multitasking and recognizing which assignments require more time than others. Thibodeaux et al. (2017) also find that time management serves as a proxy for student status, negatively affecting freshman GPA. These studies led to estimating equation 2 for students in their freshman, sophomore, junior, and senior years. The results are presented in Table 5.

Latinx males and females and Black males and females do not exhibit GPA Adjusted gaps until their senior years. During the last year of College, however, Latinx GPAs are (-.14 $p < .05$) (males) and (-.19 $p < .05$) (females) points lower than White male students. A similar trend is noticed in Black students. Black males' have a GPA that is .26 points lower than White males, and females have a GPA that is .39 points lower during their senior years. Black males also have a significantly lower GPA than White males' during their junior years as well (-.295. $p < .05$). White females, Asian females, and two-or-more races males and females exhibit a significantly higher GPA than White males' during their freshman year.

Findings show several similarities with those reported in Table 4 above. Table 4 indicates that White females' GPAs are higher than White males' GPAs. Results in Table 5 lead to the same conclusion when freshmen and juniors are compared. Results in Table 4 also show that White males' GPAs are significantly higher than Latinx males' GPAs, Black males' GPAs, and Black females' GPAs. Table 5 indicates that the differences between these groups occur at the senior level. When students reach their senior year, White males' GPAs are significantly higher than Latinx males' GPAs, Black males' GPAs, and Black females' GPAs.

Supporting Global Business Education since 1901

Table 5
Adjusted GPA Gaps by Class

Race/Ethnicity by Gender	Freshman	Sophomore	Junior	Senior
White female	0.52**	-0.08	0.23**	-0.02
	(.19)	(.26)	(.08)	(.07)
Latinx male	0.08	-0.02	-0.06	-0.14**
	(.13)	(.14)	(.06)	(.05)
Latinx female	0.11	0.02	-0.05	-0.19**
	(.14)	(.14)	(.06)	(.06)
Black male	0.32	-0.41	-0.29**	-0.26**
	(.20)	(.21)	(.11)	(.10)
Black female	0.03	-0.28	-0.17	-0.39**
	(.19)	(.24)	(.11)	(.11)
Asian male	0.27	0.02	0.04	-0.15
	(.18)	(.20)	(.10)	(.08)
Asian female	0.52*	0.38	-0.005	-0.19
	(.20)	(.20)	(.11)	(.11)
two or more races of males	0.43*	0.26	-0.25	-0.23
	(.21)	(.20)	(.21)	(.13)
two or more races of females	0.44*	-0.25	0.09	-0.33
	(.17)	(.44)	(.26)	(.19)
Intercept	1.72**	3.97**	1.63**	2.96**
	(.89)	(.80)	(.22)	(.18)
Obs.	1,166	1,131	2,300	3,101
R^2	0.1266	0.1316	0.1350	0.0690

Source: Office of Institutional Research. Notes: Reference group: White males. Heteroskedasticity-robust standard errors are reported in parentheses. All regressions control for academic terms (fall, winter, spring) in which GPA is observed. ** and * indicate statistical significance at the 99% and 95% confidence levels (p<0.01, p<0.05), respectively. The intercepts are those for the baseline group. Other covariates include Age, SES, Class status, Units taken, and Transfer status.

Conclusion

This study focuses on a college of business and public administration at a large, public Hispanic Serving Institution (HSI) located in California. It uses Ordinary Least Squares (OLS) regressions and Wald tests to explain the unadjusted and adjusted GPA earned by its undergraduate students enrolled during the 2018-2019 academic year. The unadjusted GPA gap compares the students' GPAs across ethnic groups, while the adjusted GPA gap adds covariates to determine if they reduce the gap.

Our findings (using the OLS regressions presented in the section method) show when White students as a group are used as a benchmark, and these students have significantly higher unadjusted GPAs than

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

students from all the other groups studied, with the exception of students of two or more races. When adjusted differences are evaluated, only the gap between White and Black students remains statistically significant. When White males are used as the benchmark, White females have a significantly higher unadjusted and adjusted GPA than White males. White males' unadjusted GPAs are significantly higher than the GPAs of Latinx and Black males or females. Findings are similar to those reported by Hung et al. (2020), Kugelmass & Ready (2011), Martin et al. (2017), and Oates (2009). Adding SES, student status, transfer status, and units taken reduces the gaps and decreases the female advantage (Allen, 2008; Ladson-Billings, 2006; & Noguera, 2009).

The OLS also establishes that as students get older, the positive contribution of age to performance begins to slow down and eventually becomes negative. These results are similar to those reported by Hartley and Trueman (2003). Results are also similar to those reported by Harackiewicz et al. (2019) and Stevens et al. (2014), showing that as minority students progress through their academic careers, their grades begin to decrease. Latinx males and females and Black males and females do not exhibit GPA Adjusted gaps until their senior years.

Results from some Wald tests support the female advantage; female students outperformed their male counterparts for all ethnic groups besides Latinx. Wald tests also show that males' GPAs are significantly different from all other male's GPAs. Findings are the same for females; females' GPAs are significantly different from each other. These findings are similar to Caskie et al. (2014), who examined gender-moderated differences by achievement level and academic self-efficacy.

To sum up, while a significant amount of the difference between White and Latinx students can be explained by differences in socioeconomic status and other factors introduced in the regression analyses, the same cannot be said about Black students. Adding covariables reduces the gap but does not eliminate it. Furthermore, our analyses show that Latinx and Black students' GPAs decrease as these students' progress in their academic journey. Similarly to Stevens et al. (2014), we suspect an increasing gap can partially be explained through escalating difficulty, rising workload, and a higher emphasis on group projects. The increased workload becomes an even greater issue for a lot of students who need to work. Latinx and black students often have to work to support themselves and sometimes their family members. Finally, these students might not have developed the skills necessary to work in groups (i.e., communication, rapport-building, persuasion, and influencing skills) (Bok, 2020). HSIs do not have programs assisting students who need to acquire these skills. The very small numbers of Black students in junior and senior classes potentially impact these students' ability to find group members and to learn to work in groups.

Significant resources have been allocated to support first-generation students. Studies have established that first-generation students are systematically disadvantaged compared to their continuing-generation peers (Ricks & Warren, 2021). Studies also showed that for many first-generation students, the transition to College is difficult. First-generation students have reported experiencing various emotions, including anxiety and fear, the realization that their academic skills are not sufficient, and the lack of support from family members and others. Our results suggest that specific resources must also be allocated to Black juniors and seniors and Latinx seniors.

As far as allocating resources, we suggest considering mentoring to address any feelings of self-doubt that may hinder these students' academic performance. Self-doubt arises because of a lack of role models and the difficulties of finding internships (Aish, Asare, & Miskioğlu, 2018). Numerous studies also shed considerable light on how stereotypes suppress the performance, motivation, and learning of students who have to contend with them, and they suggest what educators can do to help (Massey et al., 2003; Aronson & Steele, 2005). The fact that the results of the present study are consistent with the patterns in the broader literature suggests that the colleges of the large HSI in this study must rethink their support for Black students.

Limitations and Future Research

Note that we voluntarily refrain from using the terms achievement gaps, opportunity gaps, or equity gaps. The term achievement gap is burdensome, and the terms opportunity gap and equity gap encompass factors that are beyond the scope of this study. We refrain from using the term achievement gap because we share the view that the term has a negative connotation, as it implies that some groups could be genetically predisposed to succeed more than others. Further, the achievement gap ignores arbitrary circumstances in which people are born (e.g., ZIP code, parents' education, community wealth, and English proficiency (Goldsmith, 2004). The opportunity gap or equity gap, on the other hand, is the generational consequence of historical and systemic racism, oppression, and exclusion (Carter & Welner, 2013). The long-term inequitable access to educational, financial, and social opportunities has created layers of entrenched hurdles for Black and Indigenous people of color (Tienda & Ding-Tzann, 1987). In an educational context, the opportunity gap can refer to the lack of access to enrichment programs, after-school extracurricular activities, rigorous academic coursework, college guidance, and workplace learning opportunities. The opportunity gap can also be explained by the Critical Race Theory (CRT), showing how campus racism impacts students' achievement potential as well as their behavior and emotional well-being (Flores, 2007). In addition, stereotype biases also influence achievement. Specifically, underrepresented students may underperform because they are afraid that peers, mentors, or colleagues are applying stereotypes to them at any given moment (Keller, 2010).

Further, note that focusing on GPA alone should be discussed. GPA has advantages. GPA has been shown to be correlated with graduation/persistence by and graduation/persistence (Girves & Wemmerus, 1998; Hagedorn, 1999). GPA enables administrators to easily understand a student's work ethic, strengths, and weaknesses - the 4.0 scale is simple and uniform from school to school. Additionally, GPA is a transparent way to measure student success, as each student knows what goes into this determination. GPA tends to drive competition by clearly comparing students to their peers, which may influence students to perform better (Massey et al., 2003).

Despite these benefits, GPA appears to place strong stressors on students (Zajacova, Lynch, & Espenshade, 2005). Studies also indicate that nonacademic variables are particularly important for HSI that have intentionally developed nonacademic indicators of "servingness" (Garcia, Núñez, and Sansone 2019). These include interactions with the same racial-ethnic groups to develop a sense of belonging and join in mentoring and support programs. Further, the growing reliance on test scores as a criterion for admission to elite universities creates an unjust and socially regressive bias that favors males', Whites, and the wealthy (Heller & Marin, 2002). Finally, although this is not an issue for this study since

our focus is on the College of Business, comparing majors will need to be undertaken with caution since GPA is potentially dependent on majors. Other issues include how GPA is used to compare students within and across institutions, which cannot be completely accurate. In addition, "norm-referenced grading" falsely assumes that students' learning ability and performance fit into a bell curve. Therefore, many tests are designed so that students' scores fit this convenient mathematical trend (Schinske & Tanner, 2014).

As stated above, although a significant amount of the differences between White and Latinx students can be explained by differences in socioeconomic status and other factors introduced in the regression analyses, the same cannot be said about Black students. This raises the question of the effectiveness of HSI for Black students. Future research could explore this question by asking truly difficult questions to Black students; do they feel supported by HSI? Do Black students believe that their Latinx peers think that they are less capable? Are faculty members giving less consistent reinforcement to Black students than to Latinx? Do Black students find the HSI campus environment hostile to them? Do Blacks believe that they do not belong on predominantly HSI campuses? Qualitative research should be undertaken to complement quantitative studies. The reasons, motivations, and thoughts of their Black students need to be explored.

Finally, since this study uses pre-Covid-19 data, the researchers suspect that using data during Covid-19 will exacerbate the differences reported in this study. Since several studies have shown that depression, anxiety disorders, psychological distress, and substance abuse have impacted women, Latinx, and Black more than others during Covid-19, we do not expect to reach a more positive conclusion (da Silva et al., 2020; Sankhi, 2020 & Zottarelli, 2022).

Note, however, that the authors want to remain optimistic and base our optimism on very recent findings. Hanushek et al. (2022) conclude that the gaps in math, reading, and science achievement between the top and bottom quartiles of the SES distribution have closed by 0.05 standard deviations per decade over this period. The authors conclude that at the current pace of closure, the achievement gap would not be eliminated until the second half of the 22nd Century.

References

Aish, N., Asare, P., and Miskioğlu, E.E. (2018). People like me: Providing relatable and realistic role models for underrepresented minorities in STEM to increase their motivation and likelihood of success," *2018 IEEE Integrated STEM Education Conference (ISEC),* pp. 83-89, doi: 10.1109/ISECon.2018.8340510.

Allen, S. (2008). Eradicating the achievement gap: History, education, and reformation. *Black History Bulletin*, *71*(1), 13.

Bowen, W. G., & Bok, D. (1999). The shape of the river: Long-term consequences of considering race in college and university admissions. *Princeton, NJ: Princeton University Press*. Retrieved May 11, 2021, from http://www.jstor.org/stable/20710002.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE

Bok, D. (2020). Improving Interpersonal Skills. In Higher Expectations: Can Colleges Teach Students What They Need to Know in the 21st Century? (pp. 95-108). Princeton: Princeton University Press. https://doi.org/10.1515/9780691212357-008

Bowen, W. G., Chingos, M. M., & McPherson, M.S. (2009). Crossing the finish line: Completing College at America's public universities. *Princeton, NJ: Princeton University Press*. Retrieved from https://books.google.com/books

Caskie, G.I.L., Sutton, M.C., & Eckhardt, A.G. (2014). Accuracy of Self-Reported College GPA: Gender-Moderated Differences by Achievement Level and Academic Self-Efficacy. *Journal of College Student Development 55*(4), 385-390. doi:10.1353/csd.2014.0038.

Census.https://www.census.gov/library/stories/2020/09/poverty-rates-for-blacks-and-hispanics-reached-historic-lows-in-2019.html

da Silva ML, Rocha RSB, Buheji M, Jahrami H, Cunha KDC. A systematic review of the prevalence of anxiety symptoms during coronavirus epidemics. J Health Psychol. 2020;71: 135910532095162–1

Espenshade, T.J., &Radford, A.W. (2009). No longer separate, not yet equal: Race and class in elite college admission and campus life. *Princeton, JN: Princeton University Press*. doi: 10.1353/sof.2010.0090

Fauria, R. M., & Fuller, M. B. (2015). *Transfer student success: Educationally purposeful Activities Predictive of Undergraduate GPA*. ERIC. https://files.eric.ed.gov/fulltext/EJ1064764.pdf.

Garcia, G. A., Núñez, A.-M., & Sansone, V. A. (2019). Toward a Multidimensional Conceptual Framework for Understanding "Servingness" in Hispanic-Serving Institutions: A Synthesis of the Research. *Review of Educational Research*, *89*(5), 745–784. https://doi.org/10.3102/0034654319864591

Gleason, P. M. (1992, November 30). *College student Employment, academic progress, and Post college labor market success.* Journal of Student Financial Aid. https://eric.ed.gov/?id=EJ477819.

Goldin, C., Katz, L. F., & Kuziemko, I. (2006). The homecoming of American college women: The reversal of the college gender gap. *Journal of Economic perspectives*, *20*(4), 133-156. doi: 10.1257/jep.20.4.133

Goldsmith, D. J. (2004). *Advances in personal relationships. Communicating social support.* Cambridge University Press. https://doi.org/10.1017/CBO9780511606984

Girves and Wemmerus (1998),

Hanushek, E. A., Light, J. D., Peterson, P. E., Talpey, L. M., & Woessmann, L. (2022). Long-run Trends in the US SES—Achievement Gap. *Education Finance and Policy*, *17*(4), 608-640.

Henretta, J. C., & Campbell, R. T. (1978, March 1). Net Worth as an Aspect of Status. *American Journal of Sociology*. https://www.journals.uchicago.edu/doi/abs/10.1086/226679.

Hung, M., Smith, W. A., Voss, M. W., Franklin, J. D., Gu, Y., & Bounsanga, J. (2020). Exploring student achievement gaps in school districts across the United States. *Education and Urban Society*, *52*(2), 175-193.

Kugelmass, H., & Ready, D. D. (2011). Racial-ethnic disparities in collegiate cognitive gains: A multilevel analysis of institutional influences on learning and its equitable distribution. *Research in Higher Education*, 52, 323-348. doi: 10.1007/s11162-010-9200-5

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding achievement in US schools. *Educational researcher*, *35*(7), 3-12.

Martin, N.D., Spenner, K.I., & Mustillo, S.A. (2017). A test of leading explanations for the college racial-ethnic achievement gap: Evidence from a longitudinal case study. *Research in Higher Education,* 58, 617-645. https://doi.org/10.1007/s11162-016-9439-6

Massey, D. S., & Probasco, L. (2010). Divergent streams: Race-gender achievement gaps at selective colleges and universities. *Du Bois Review,* 7, 219-246. doi: 10.1017/S1742058X10000160

Noguera, P. A. (2009, April). The achievement gap: Public education in crisis. In *New labor forum* (Vol. 18, No. 2, p. 61). Sage Publications Ltd.

Oates, G. L. St. C. (2009). An empirical test of five prominent explanations for the Black-White achievement gap. *Social Psychology of Education*, 12, 415-441. https://doi.org/10.1007/s11218-009-9091-5

Renn, K. (2017). LGBTQ students on campus: Issues and opportunities for higher education leaders.
Ricks, J.R., & Warren, J.M. (2021). Transitioning to College: Experiences of successful first-generation college students, *Journal of Educational Research & Practice, 11*(1), p. 1-15.

Sankhi S, Marasine NR. Impact of COVID-19 Impact of COVID-19 pandemic on mental health of the general population, students, and health care workers: A review. preprints.org. 2020. https://doi.org/10.20944/preprints202007.0616.v1

Schinske, J., & Tanner, K. (2014). Teaching More by Grading Less (or Differently). *CBE life sciences education*, 13(2), 159–166. https://doi.org/10.1187/cbe.cbe-14-03-0054

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-Generation College Students. *The Journal of Higher Education*, *75*(3), 249–284. https://doi.org/10.1080/00221546.2004.11772256

Thibodeaux, J., Deutsch, A., Kitsantas, A., & Winsler, A. (2017). First-Year College Students' Time Use: Relations With Self-Regulation and GPA. *Journal of Advanced Academics*, *28*(1), 5–27. https://doi.org/10.1177/1932202X16676860

Vickerman, P., & Blundell, M. (2010). Hearing the voices of disabled students in higher education. *Disability & Society*, *25*(1), 21–32. https://doi.org/10.1080/09687590903363290

Zajacova, A., Lynch, S.M. & Espenshade, T.J. Self-Efficacy, Stress, and Academic Success in College. *Res High Educ,* 46, 677–706 (2005). https://doi.org/10.1007/s11162-004-4139-zu.csusb.edu/#/views/NewStudentAdmissions/NewStudentAdmissions?:iid=1

Zottarelli, L. K., Moreno, A., Miranda, A., Xu, X., & Sunil, T. S. (2022). Basic needs initiatives at Texas community college Hispanic-serving institutions: Changes in service offerings during the COVID-19 pandemic. *Community College Journal of Research and Practice*, *46*(1-2), 138-144.

Supporting Global Business Education since 1901
© 2023 SIEC-ISBE