

Addendum: Student Commute Distance & Academic Outcomes

Because the commute data in the Student Commute Distance & Academic Outcomes report rely on self report and may therefore not reflect some level of response bias, we also attempted to calculate commute distance from student records, using their presumed home address. That is, we used the address the student had on file at the time of their first matriculation as the best guess of their “home” address¹(excluding any that were out of state addresses or a great distance from campus) to calculate their commute time. As a result, the dataset for this addendum focuses only on students in their first year in Fall 2019, as compared to the main report, which includes any students who responded to the Spring 2020 Annual Transportation Survey.

Data

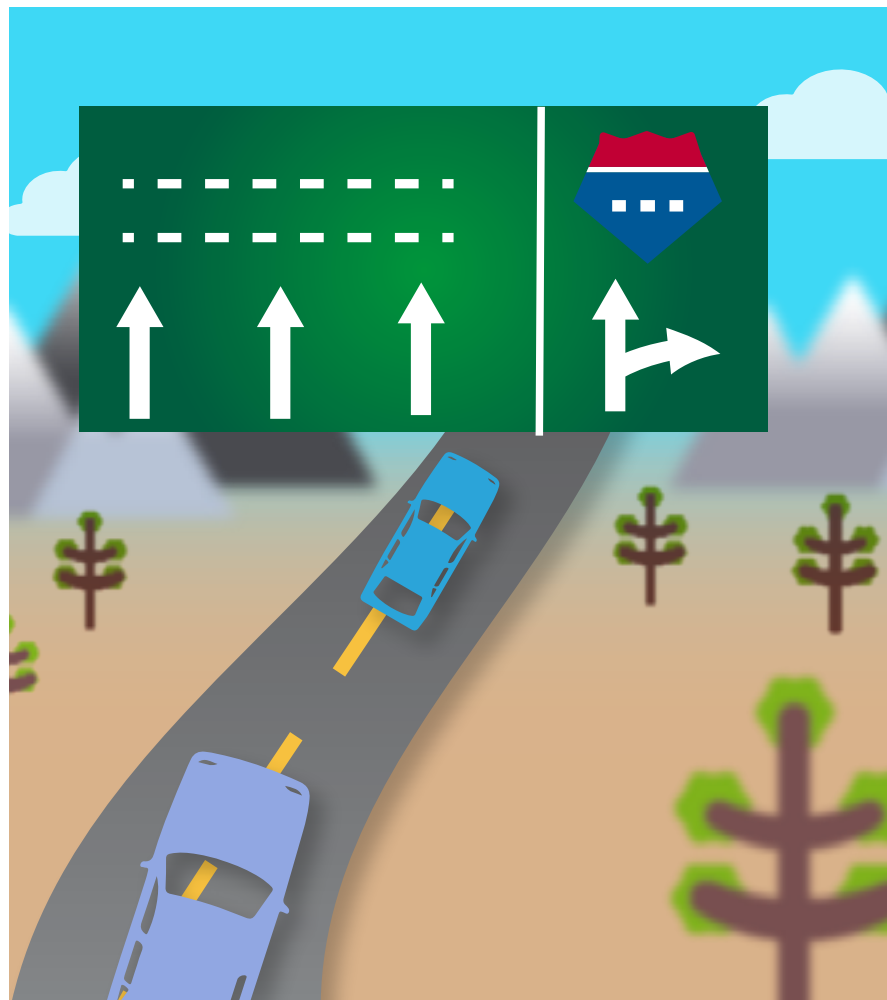
The data represented here initially included **10,781** students from the **Fall 2019** cohort at **CSUN**. Ultimately, 7,857 students were included in the analyses. Records were excluded for the following reasons:

- Students with addresses outside of California or more than a 97 minute commute away ² (assuming they would not be commuting from these addresses)
- Records with incomplete addresses
- Students with other missing data

In order to calculate commute times, the GGmap package in the statistical program R was used to convert students’ presumed home address to latitude and longitude. Following this, the OSRM package in R was used to calculate commute times and distances from these geographical coordinates to CSUN. Results were compared against responses to the Transportation Survey (where available) as a reliability check.

In addition to commute time, the following student characteristics were included in the analyses: **First Generation Status, Pell status, Race, Parent Education, Gender, and High School GPA.**

Four academic outcomes were examined: **First Year GPA, Number of Units Taken in the First Year, Academic Notice Status ³ at the End of the First Year, and Retention (Enrollment in a Third Term).**

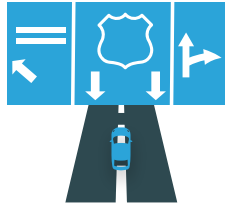


1. Student records only include one address per student, and therefore do not distinguish between a “home” address vs. an address where they might only receive mail.

2. 97 minutes was identified as the statistical cutoff for outliers from the distribution of all commute distances in the dataset.

3. Formerly known as Academic Probation

Student Commute Times



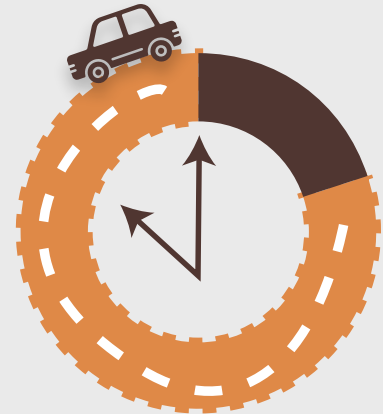
17.8 miles was the average commute distance from CSUN



28 minutes was the average commute time from CSUN



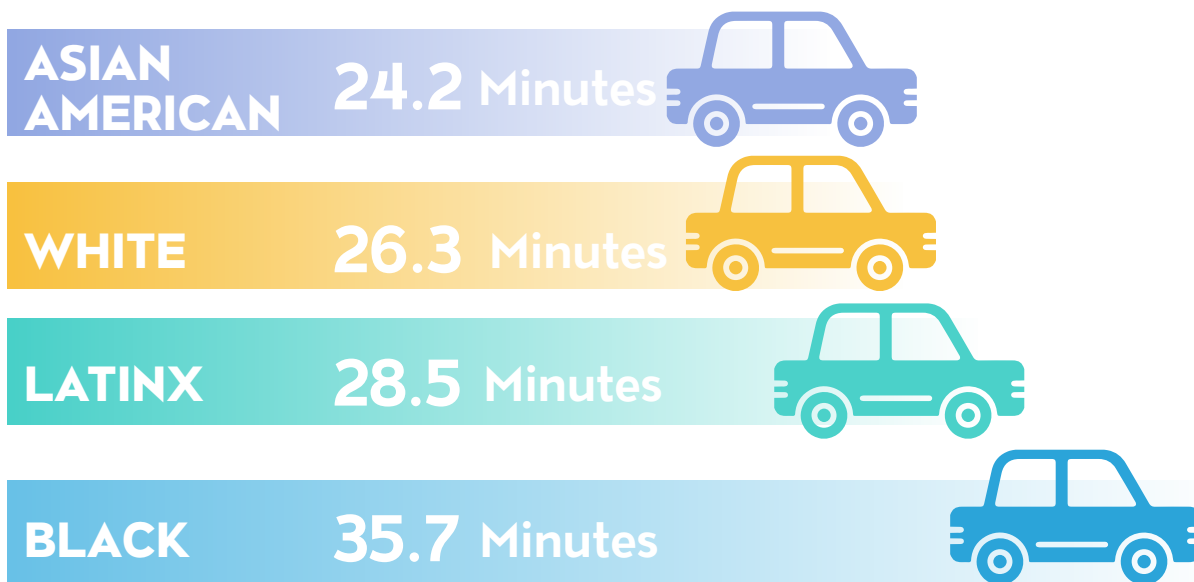
50% of students live under 23 minutes away



80% of students live under 40 minutes away

The data demonstrate that students who identified as Black/African American had the longest commute times (M=35.68 minutes). Asian American students had the shortest commute times (M=24.16 minutes).

Commute Time to CSUN



Findings

- Commute time was found to be statistically reliably associated with first-year GPA and retention into the third term. There was a significant decrease in GPA and a reduced chance of enrolling for a third term for those with longer commutes. These effects held after accounting for other variables. However, it is important to note that the effect size of commute time itself was still a small one, meaning it only accounted for a small percentage of the variability in student outcomes (a decrease of .002 in GPA and a decrease of .006 in probability of returning for a third term per each one minute increase in commute time).
- Examining these associations separately by race/ethnicity indicated that commute time had the greatest effect on Black/African American student outcomes. These effects were statistically non-significant for the other racial/ethnic groups (Latinx, White, Asian American).

Takeaways

The findings in this addendum support the small but statistically reliable association between commute time and academic outcomes found in the main report. However, the finding that these results only held for Black/African American students are in contrast to those found in the main report, in which the statistically reliable association was found for Latinx students only. This may have to do with response bias in the Transportation Survey sample. It may also have to do with the focus of the current analyses on first-year outcomes only, rather than all respondents in the main report. Further examination is warranted to better understand these differences. Nonetheless, it is important to note that the size of the effect is very small and therefore may only impact those students with very long commutes in any meaningful way.

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