Achieving Digital Equity for California's Students

Technical Appendices

CONTENTS

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Appendix A. Census Household Pulse Survey

The Household Pulse Survey (HPS) is an experimental survey conducted by the Census Bureau to study the impact of the coronavirus pandemic on households across the US. It asks detailed questions about how child care, education, employment, food and housing security, health care, and household spending have been affected by the pandemic. Phase 1 of the survey ran from April 23, 2020 through July 21, 2020; Phase 2 from August 19, 2020 through October 26, 2020; and Phase 3 from October 28, 2020 through March 29, 2021. Phase 3.1 began April 14, 2021 and ended on July 5, 2021.
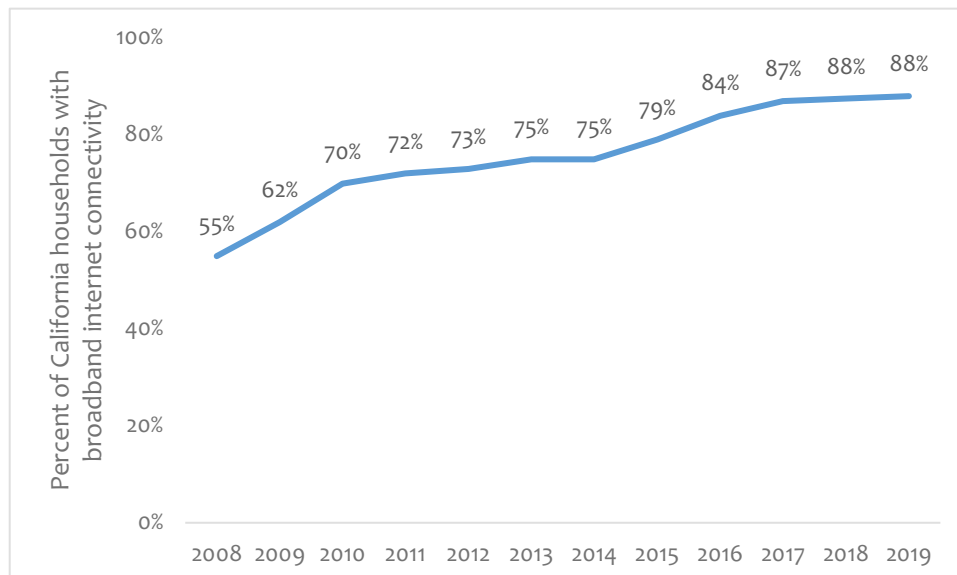
The sample design was a systematic sample of all eligible housing units in the US, with adjustments applied to the sampling intervals to select a large enough sample to create state-level estimates and estimates for the top 15 MSAs. The person weights are created to adjust for nonresponse, adults per household, and coverage. The Census Bureau used an iterative raking procedure to simultaneously control the sample estimates to two sets of population controls—the educational attainment estimates from the 2019 1-year ACS estimates by age and sex, and the July 1, 2021 Hispanic origin/race by age and sex estimates from the Census Bureau's Population Estimates Program.

For this report we used data from week 1 (April 23 2020) through week 30 (May 24, 2021). This includes 35,847 unique California households with children enrolled in school. The California sample also includes three MSAs: Los Angeles-Long Beach-Anaheim, San Francisco-Oakland-Berkeley, and Riverside-San Bernardino-Ontario.

For some historical context, we include this chart, incorporating data from the PPIC Statewide Survey, the Field Poll, and the Berkeley Intergovernmental Services (IGS) poll, showing the percentage of California households reporting broadband connectivity at home (Figure A1).

FIGURE A1

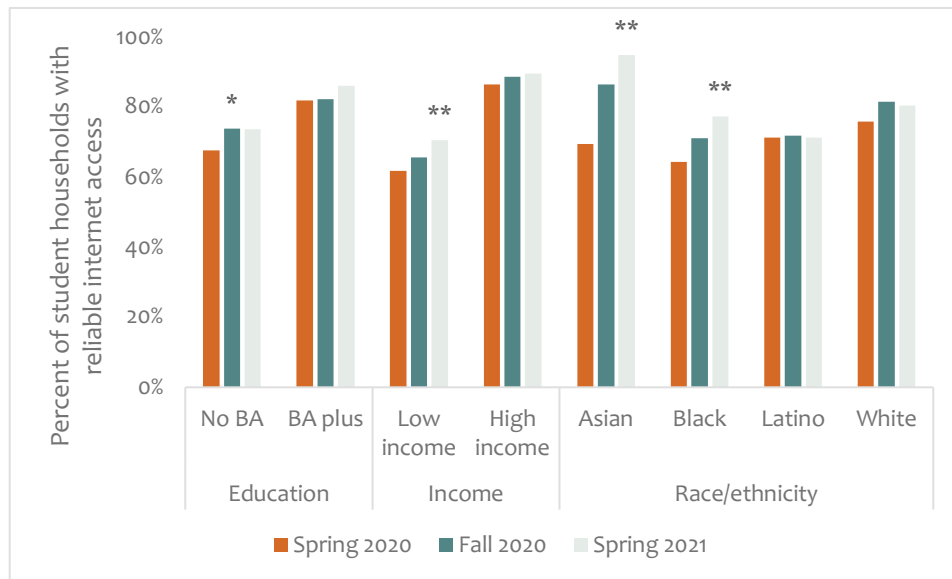California household broadband access increased rapidly, then leveled off in recent years

SOURCES: PPIC Statewide Survey (2008–2013); the Field Poll/Field Research Corporation (2014–2016); Berkeley IGS Poll (2017–2019).

Appendix B. Additional Figures

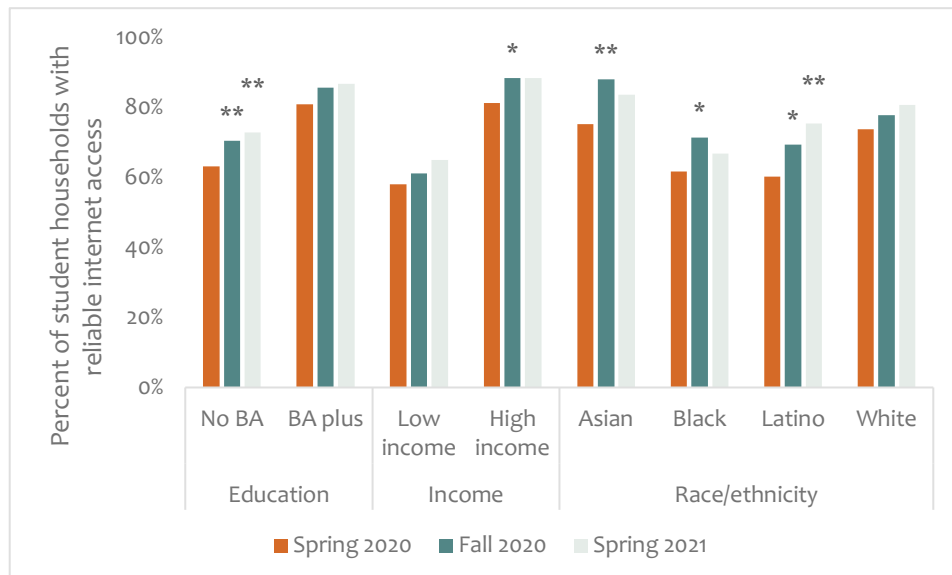Internet access rates among Florida households, along socioeconomic and race/ethnic lines

SOURCE: Authors' calculations using Census Bureau Household Pulse Survey data, 2020–2021.

NOTES: *** denotes a statistically significant difference from spring 2020 rates at the 1 percent level; ** denotes significance at the 5 percent level; * denotes significance at the 10 percent level. Low income: household income (2019) < $50,000, which is roughly the cutoff for 200 percent of the federal poverty line in California ($51,500). High income: household income (2019) >$100,000. Race/ethnicity based on the survey respondent.

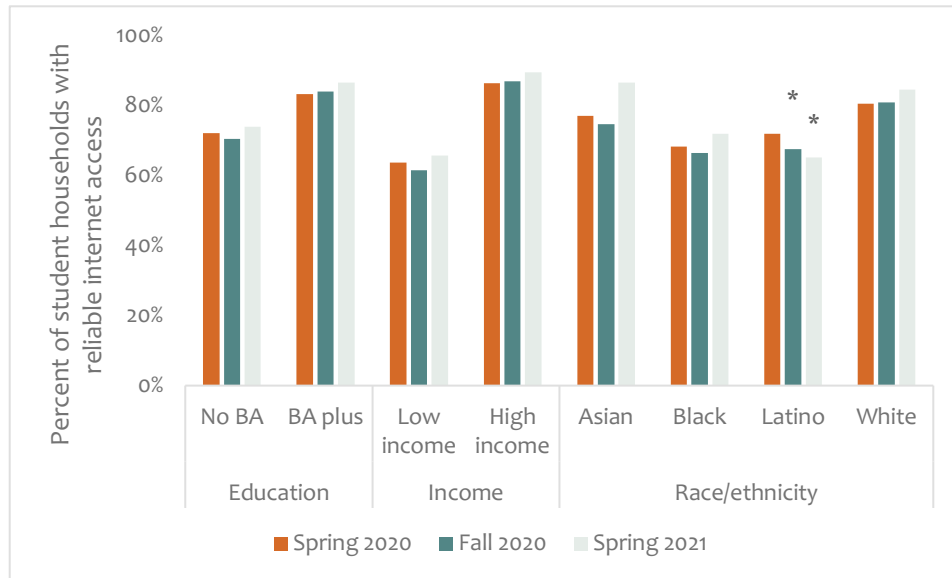Internet access rates among Illinois households, along socioeconomic and race/ethnic lines

SOURCE: Authors' calculations using Census Bureau Household Pulse Survey data, 2020-2021

NOTES: *** denotes a statistically significant difference from spring 2020 rates at the 1 percent level; ** denotes significance at the 5 percent level; * denotes significance at the 10 percent level. Low income: household income (2019) < $50,000, which is roughly the cutoff for 200 percent of the federal poverty line in California ($51,500). High income: household income (2019) >$100,000. Race/ethnicity based on the survey respondent.

FIGURE B3
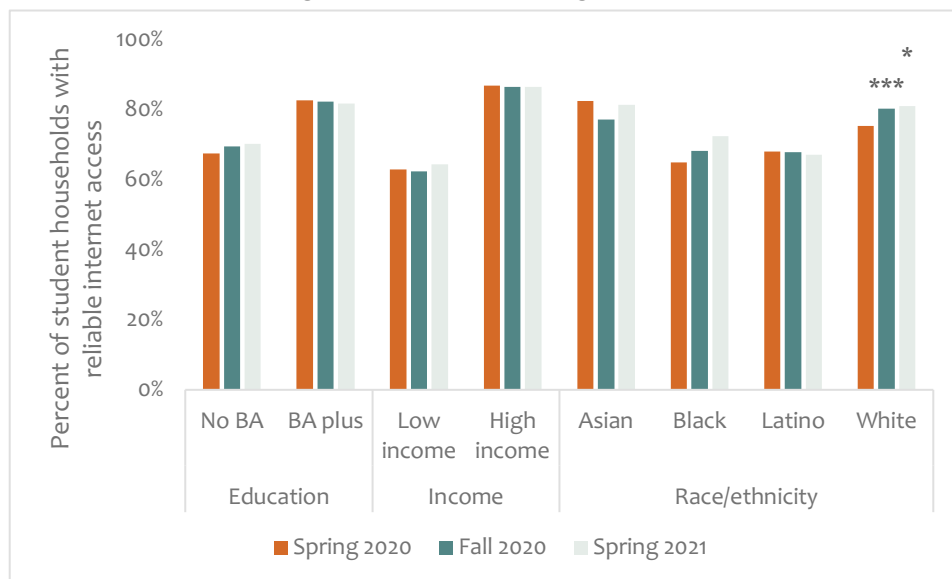Internet access rates among New York State households, along socioeconomic and race/ethnic lines

SOURCE: Authors' calculations using Census Bureau Household Pulse Survey data, 2020–2021.

NOTES: *** denotes a statistically significant difference from spring 2020 rates at the 1 percent level; ** denotes significance at the 5 percent level; * denotes significance at the 10 percent level. Low income: household income (2019) < $50,000, which is roughly the cutoff for 200 percent of the federal poverty line in California ($51,500). High income: household income (2019) >$100,000. Race/ethnicity based on the survey respondent.

FIGURE B4
Internet access rates among Texas households, along socioeconomic and race/ethnic lines

SOURCE: Authors' calculations using Census Bureau Household Pulse Survey data, 2020–2021.

NOTES: *** denotes a statistically significant difference from spring 2020 rates at the 1 percent level; ** denotes significance at the 5 percent level; * denotes significance at the 10 percent level. Low income: household income (2019) < $50,000, which is roughly the cutoff for 200 percent of the federal poverty line in California ($51,500). High income: household income (2019) >$100,000. Race/ethnicity based on the survey respondent.

TABLE 1
Relationship between household characteristics and internet/device access

	Internet always available	Device always available	Internet and device always available
Summer 2020	-0.0262	-0.0439**	-0.0090
	(0.0206)	(0.0211)	(0.0075)
Fall 2020	0.0332**	0.1145***	0.0301***
	(0.0167)	(0.0178)	(0.0084)
Spring 2021	0.0141	0.0940***	0.0219***
	(0.0180)	(0.0216)	(0.0073)
Asian	0.0021	-0.0100	-0.0078
	(0.0135)	(0.0148)	(0.0047)
Black	-0.0793***	-0.0593**	0.0070
	(0.0287)	(0.0235)	(0.0106)
Latino	-0.0433***	-0.0535***	0.0158**
	(0.0148)	(0.0162)	(0.0063)
Low-income	-0.1393***	-0.1329***	0.0312***
	(0.0153)	(0.0163)	(0.0074)
No Bachelor degree	-0.0687***	-0.0681***	0.0171***
	(0.0094)	(0.0101)	(0.0044)
Constant	0.8443***	0.8306***	0.0016
	(0.0163)	(0.0161)	(0.0063)
Observations	35,829	35,829	35,829
R-squared	0.050	0.074	0.020

SOURCE: Authors' calculations using Census Bureau Household Pulse Survey data, 2020-2021

NOTES: Results are from a regression performed at the household level. *** denotes a statistically significant difference from spring 2020 rates at the 1 percent level; ** denotes significance at the 5 percent level; * denotes significance at the 10 percent level. Low income: household income (2019) < $50,000, which is roughly the cutoff for 200 percent of the federal poverty line in California ($51,500). High income: household income (2019) >$100,000. Race/ethnicity based on the survey respondent.

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