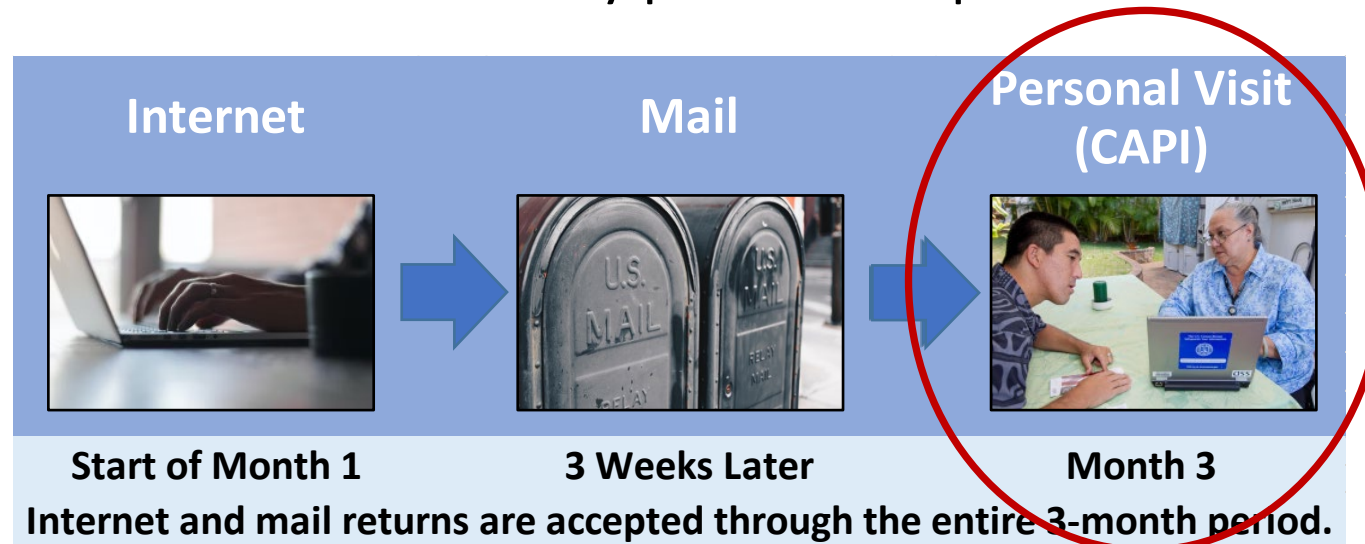# How Response during the American Community Survey's Personal Interview Phase Has Changed Since the Start of the COVID-19 Pandemic

2023 ACS Data Users Conference

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American Community Survey Data Collection

- The American Community Survey (ACS) is a continuous, multimode survey
- The ACS surveys 3.5 million addresses each year, covering all U.S. states and Puerto Rico
- Data collection for each monthly panel takes place over a 3-month period

Internet	Mail	Personal Visit (CAPI)
Start of Month 1	3 Weeks Later	Month 3

Internet and mail returns are accepted through the entire 3-month period.

For more information about the ACS, please visit: *<www.census.gov/acs>*.

Effects of the COVID-19 Pandemic on the CAPI Operation

- The COVID-19 pandemic drastically affected in-person (CAPI) interviewing in 2020.

  ➢ March 20, 2020: interviewing operation halted.

  ➢ April-June 2020: interviewing conducted via telephone only.

  ➢ July 2020-January 2021: varying levels of in-person interviewing allowed based on local policies and COVID-19 outbreaks.

- CAPI operations "returned to normal" starting in February 2021 with the addition of a letter sent to CAPI addresses encouraging self-response (first variation used in May 2020).

Research Questions

How did survey response during the CAPI phase change from 2019 to 2021?

How did the changes differ by geographic area?

How did the changes differ by subpopulations?

Methodology

- Used 2019 and 2021 panels of ACS paradata representing CAPI months of March 2019-February 2020 and March 2021-February 2022.

- Computed the CAPI response rate as:

$$\frac{\text{Weighted number of CAPI or self-responses received}^{1}}{\text{Weighted number of addresses eligible to respond via CAPI}} * 100$$

- Including CAPI interviews and self-responses from addresses in the CAPI universe provides the best measurement of respondent cooperation.

- Weights take into account probability of selection, including CAPI subsampling.

- Performed statistical testing to determine if the rates were statistically significant at the 90-percent confidence level.

[1] From addresses in the CAPI universe only

Methodology

- Computed response rates at the state and Public Use Microdata Areas (PUMA) levels.

  ➢ PUMAs are census-defined non-overlapping, statistical geographic areas that partition each state into areas containing about 100,000 people.

  ➢ There are about 2,400 PUMAs that cover the entirety of the United States and Puerto Rico.

- Computed response rates for Esri Tapestry Segmentation Urbanization and LifeMode Groups.

  ➢ Built using demographic and socioeconomic variables to identify unique consumer markets throughout the United States.

  ➢ There are six Urbanization groups representing geographic areas with similar levels of affluence and population density.

  ➢ There are 14 LifeMode Groups representing geographic areas with similar demographic characteristics and consumer behavior patterns.

  ➢ For more information on the Esri Tapestry Segmentation, refer to <www.esri.com/en-us/arcgis/products/data/data-portfolio/tapestry-segmentation>.

Methodology

Computed response rates for subpopulations of demographic and socioeconomic characteristics

➢ Based on the Community Resilience Estimates (CRE) Equity supplement.

➢ Identifies geographic areas where specific characteristics are statistically different than the national value.

➢ For more information on the Community Resilience Estimates, refer to <www.census.gov/programs-surveys/community-resilience-estimates.html>.

United States® Census Bureau

Results

Nationally, response to the ACS's CAPI operation dropped 9 percentage points from 2019 to 2021.

		Percentage Point Change
85.0%	76.0%	−9.0%
2019 Panels	2021 Panels	
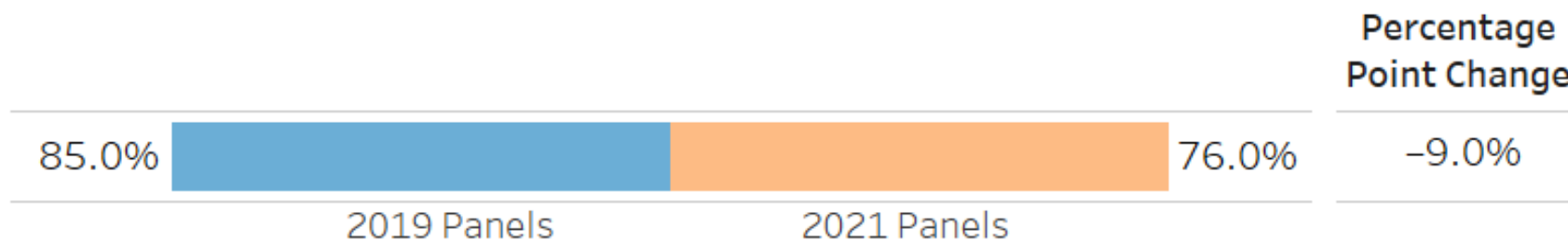
Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

Results
State-Level Differences in CAPI Response Rates from 2019 to 2021

Rate Difference (2021 - 2019)
- ■ < −25.0
- ■ −10.0 to −24.9
- ■ −5.0 to −9.9
- ■ −0.1 to −4.9
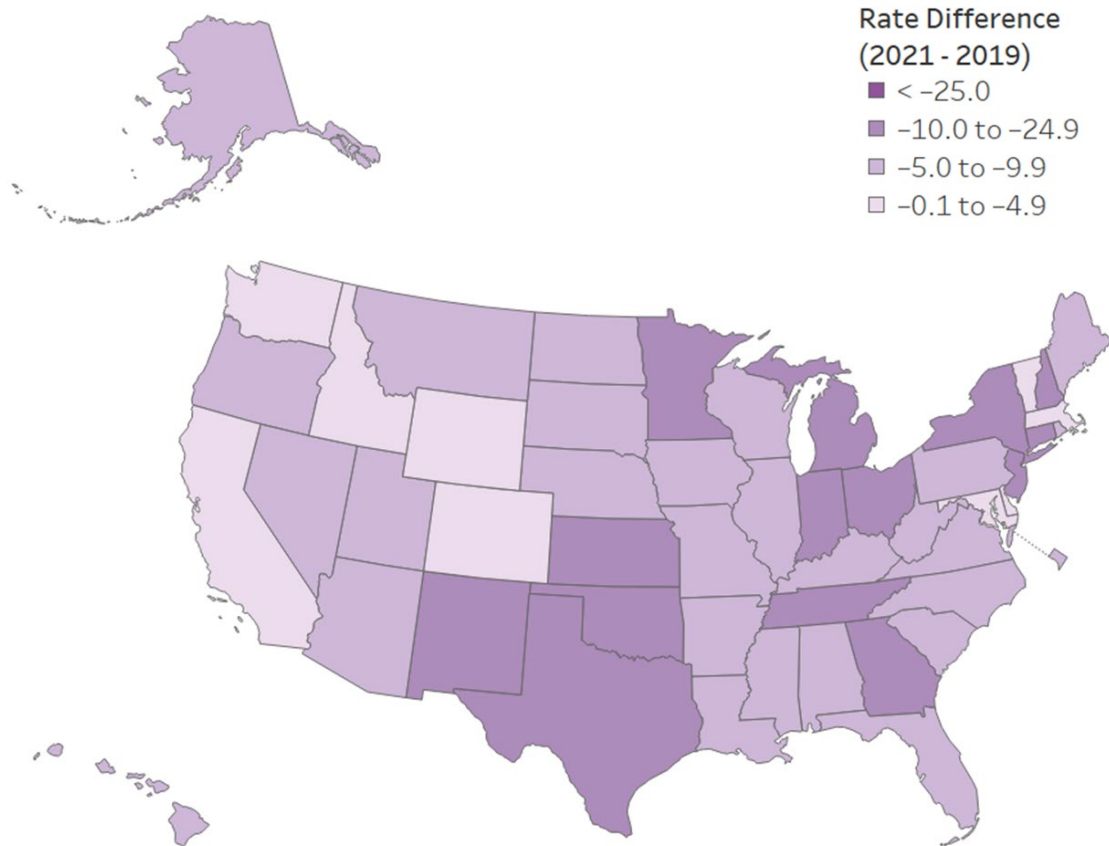
- Massachusetts and Colorado had the lowest nominal percentage point differences (–3.0%), but Washington, Wyoming, Delaware, Idaho, and Vermont all had similar percentage point differences.

- Connecticut had the highest nominal percentage point difference (–15.1%), but New York and New Mexico had similar percentage point differences.

- Compared to the percentage point difference at the national level, 24 states had differences that were smaller; 13 states had differences that were larger; and 14 states had differences that are similar.

Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

Results
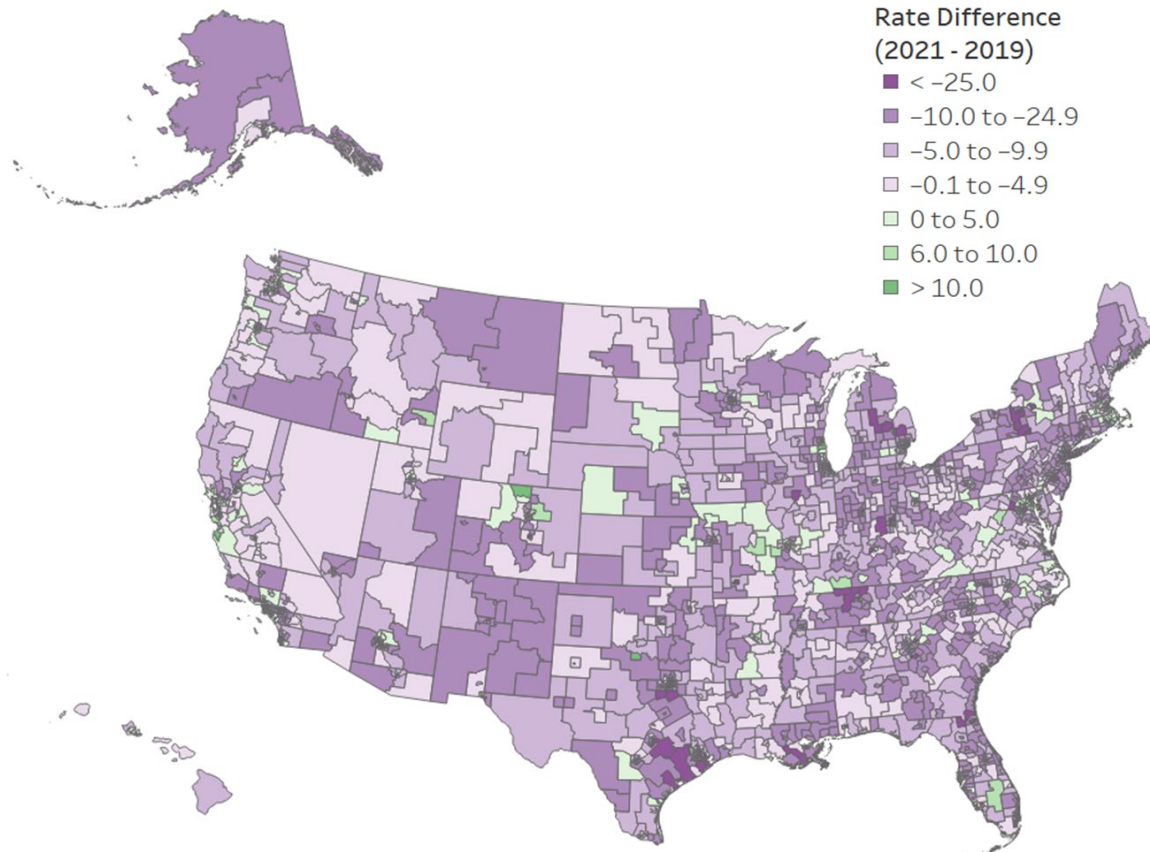## PUMA-Level Differences in CAPI Response Rates from 2019 to 2021

Rate Difference (2021 - 2019)
- ■ < −25.0
- ■ −10.0 to −24.9
- ■ −5.0 to −9.9
- ■ −0.1 to −4.9
- □ 0 to 5.0
- ■ 6.0 to 10.0
- ■ > 10.0

- Differences in CAPI response rates ranged from about −50 percentage points to about 21 percentage points.

- There were 25 PUMAs with percentage point differences that are statistically greater than −25%.
  - ➢ New York had 11 concentrated in Brooklyn, the Bronx, and central New York state.
  - ➢ Texas had six concentrated in the Houston and Austin areas.

- There were three PUMAs with percentage point differences that statistically exceed 10%—one in Pennsylvania, one in Colorado, and one in Maryland.

Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

Results
Esri Urbanization Group CAPI Response Rate Differences from 2019 to 2021

Esri Urbanization Group	2019 Panels	2021 Panels	Percentage Point Change
Principal Urban Center	76.8%	66.9%	−9.9%
Urban Periphery	82.5%	72.9%	−9.6%
Metro Cities	83.2%	72.6%	−10.6%
Suburban Periphery	85.8%	77.7%	−8.1%
Semirural	88.0%	79.0%	−9.0%
Rural	90.5%	82.9%	−7.6%
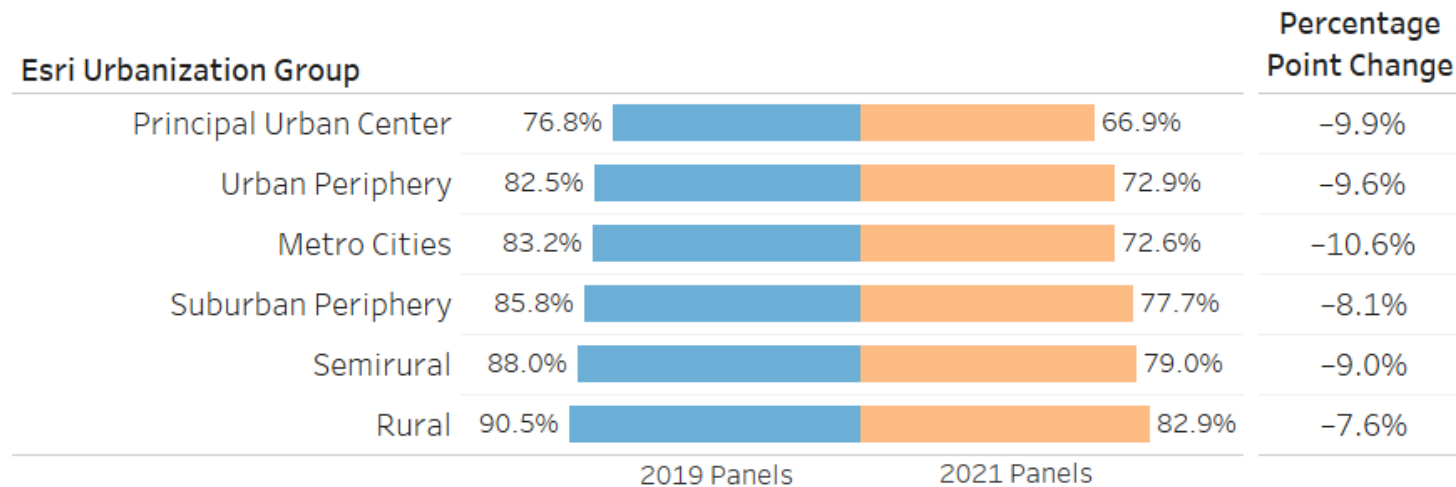
Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

- Rural areas had the highest CAPI response rate for both 2019 and 2021 and experienced the smallest percentage point change.

- Metro cities had the largest negative percentage point change in CAPI response between 2019 and 2021

- Metro cities had a higher CAPI response rate than the Urban Periphery group in 2019. In 2021, these two groups had CAPI response rates that were statistically the same.

Results
Esri LifeMode Group CAPI Response Rate Differences from 2019 to 2021

General Description	Esri LifeMode Group	2019 Panels	2021 Panels	Percentage Point Change
Urban dwellers; young, hardworking families	Next Wave	77.5%	67.4%	−10.0%
Millennials on the move—single, urban	Midtown Singles	78.4%	66.6%	−11.8%
Young, successful singles in the city	Uptown Individuals	79.6%	72.1%	−7.5%
Lifestyles of thirtysomethings	Middle Ground	82.8%	72.2%	−10.6%
Prosperous married couples living in older suburban enclaves	Upscale Avenues	83.4%	76.4%	−7.0%
Growing up and staying close to home; single householders	Hometown	84.0%	74.0%	−10.0%
College and military populations; transitional group	Scholars and Patriots	84.3%	74.6%	−9.7%
Young homeowners with families	Sprouting Explorers	84.4%	75.1%	−9.3%
Successful young families in their first home	Family Landscapes	85.8%	76.5%	−9.3%
Established wealth—educated, well-traveled married couples	Affluent Estates	85.9%	78.3%	−7.6%
Gen X in middle age; families with fewer kids and a mortgage	GenXurban	86.5%	77.2%	−9.3%
Senior lifestyles reveal the effects of saving for retirement	Senior Styles	88.0%	80.9%	−7.2%
Country life with older families in older homes	Rustic Outposts	89.9%	81.7%	−8.2%
Empty nesters in bucolic settings	Cozy Country Living	90.3%	82.6%	−7.7%

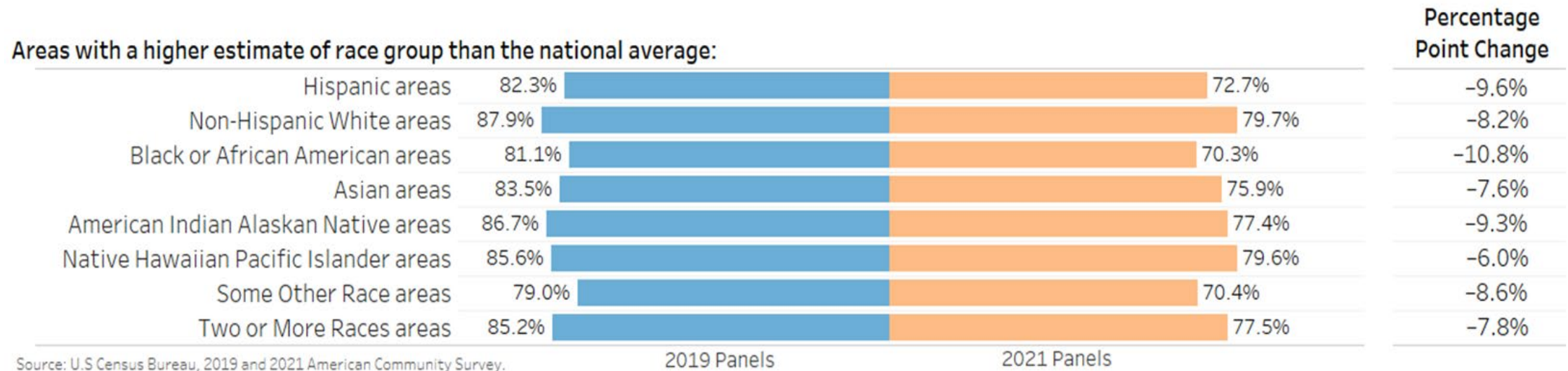Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

Results
CRE Race Group Area Differences in CAPI Response Rates from 2019 to 2021

Areas with a higher estimate of race group than the national average:

Race Group Area	2019 Panels	2021 Panels	Percentage Point Change
Hispanic areas	82.3%	72.7%	−9.6%
Non-Hispanic White areas	87.9%	79.7%	−8.2%
Black or African American areas	81.1%	70.3%	−10.8%
Asian areas	83.5%	75.9%	−7.6%
American Indian Alaskan Native areas	86.7%	77.4%	−9.3%
Native Hawaiian Pacific Islander areas	85.6%	79.6%	−6.0%
Some Other Race areas	79.0%	70.4%	−8.6%
Two or More Races areas	85.2%	77.5%	−7.8%

Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

Results
CRE Median Age Area Differences in CAPI Response Rates from 2019 to 2021

Areas with a:	2019 Panels	2021 Panels	Percentage Point Change
Lower Median Age than National Average	81.9%	72.1%	−9.8%
Higher Median Age than National Average	88.2%	80.4%	−7.7%

Source: U.S Census Bureau, 2019 and 2021 American Community Survey.

- Areas with a higher median age than the national average had higher CAPI response rates in both 2019 and 2021.

- Areas with a younger population compared to the national average had a negative 10 percentage point change in CAPI response from 2019 to 2021.

Results
Differences in CAPI Response Rates from 2019 to 2021 for Other Characteristics

	Percentage Point Change
Areas where the characteristic is higher than the national average:	
Speak English Less Than Very Well 81.9% ▬▬▬▬▬ 72.7%	−9.2%
Below Poverty Level 83.5% ▬▬▬▬▬ 72.9%	−10.6%
Work Full-Time 85.3% ▬▬▬▬▬ 76.0%	−9.3%

2019 Panels   2021 Panels

Source: U.S Census Bureau, 2019 and 2021 American Community Survey.
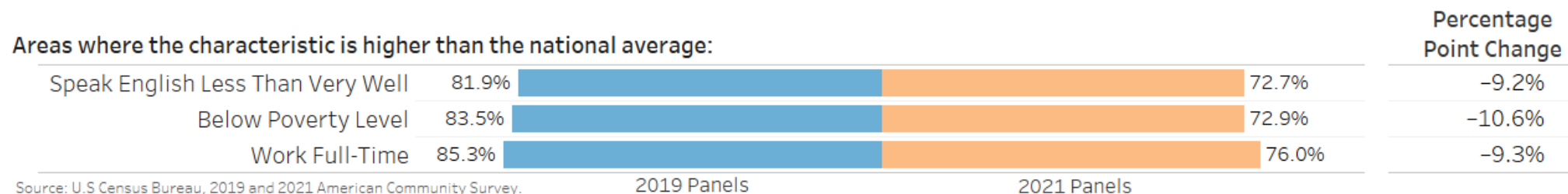
- Areas where there was a larger proportion of people who speak English "less than very well" and areas where a larger proportion of the population worked full-time had a similar percentage point change from 2019 to 2021.

- Of these three characteristics, the percentage point change in CAPI response from 2019 to 2021 was greatest for areas where a higher proportion of the population was below the poverty level.

Conclusions

- CAPI response rates decreased for most areas from 2019 to 2021.

- The rate of decrease varied by the type of geographic area and the characteristics of the population within those areas.

  - ➢ Urban areas had lower CAPI response rates than rural areas in 2019 and experienced a larger decrease between 2019 and 2021.

  - ➢ Esri LifeMode groups with a young population in an urban/city setting (Next Wave, Midtown Singles, and Uptown Individuals) had lower CAPI response rates in 2019 when compared to all other groups and two of these groups had a percentage point change of –10 or more from 2019 to 2021.

  - ➢ Black or African American areas had the largest decrease of the race group areas.

  - ➢ Areas with a younger population had a larger decrease than areas with an older population.

Next Steps

- Using administrative records data, compute response rates by the race and ethnicity.

- Investigate characteristics of addresses that do not respond (non-response bias) using administrative records data.

- Focus research on ways to improve CAPI response from specific populations and help to inform the ongoing adaptive design work for the CAPI operation.

Thank You!

Questions or Comments?

Please contact me at stephanie.k.baumgardner@census.gov