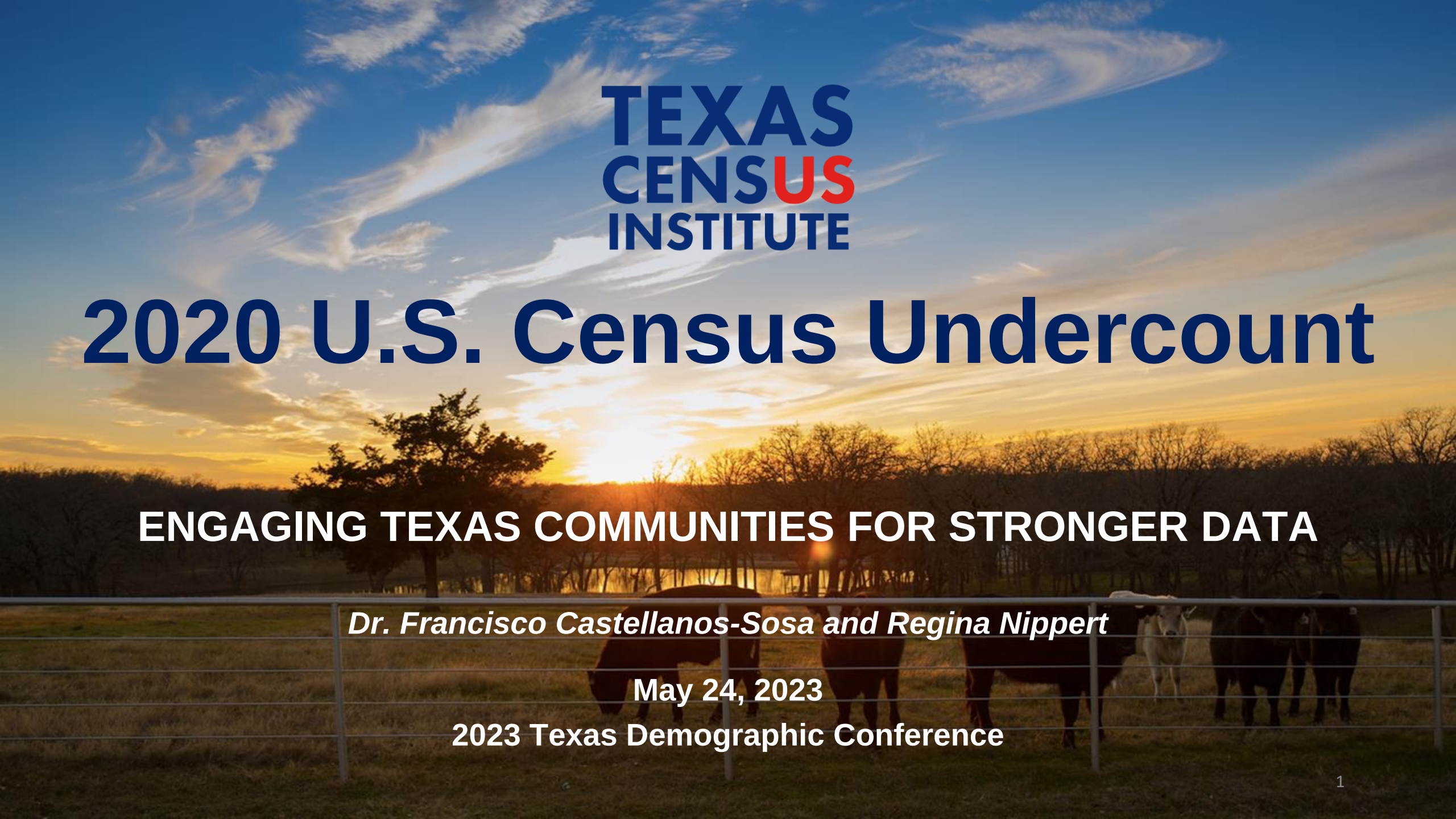


# 2020 U.S. Census Undercount

## ENGAGING TEXAS COMMUNITIES FOR STRONGER DATA

*Dr. Francisco Castellanos-Sosa and Regina Nippert*

**May 24, 2023**

**2023 Texas Demographic Conference**

# Today's Agenda

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1) Who we are

2) Census data accuracy and why it matters

3) Challenges to collecting and accessing accurate data

    Challenge 1: Understanding the 2020 Census undercount

    Challenge 2: Improving self-response rates

4) Increasing self-response rates to amplify the Bureau's activities in historically-undercounted communities (HUCs)

5) Engaging undercounted communities in the research process

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# What industry does your organization represent?

ⓘ Start presenting to display the poll results on this slide.

# About the Texas Census Institute

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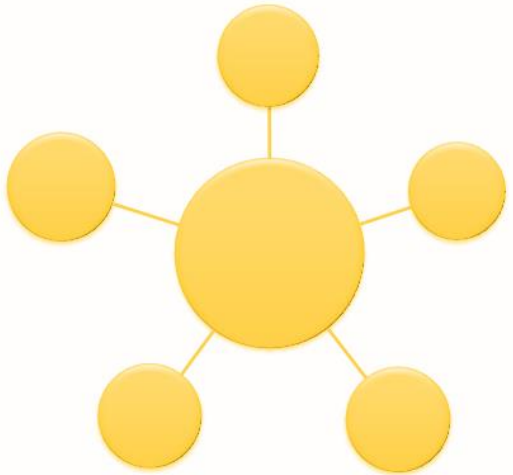
The Texas Census Institute (TxCI) provides independent, non-partisan, data-driven census policy and program guidance that encourages census participation so all Texans can enjoy a great quality of life.

**RESEARCH**

**EDUCATION**

**REGIONAL PARTNERSHIPS**

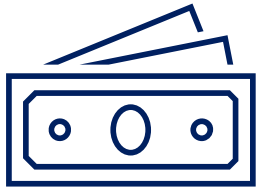


# TxCI is a **hub** for Texas. Together with regional partners and other stakeholders, we:

- Augment data collection activities,
- Help ensure data accuracy,
- Expand data access and granularity, and
- Help ensure better lives for all Texans.

# Census data accuracy and why it matters

# Nationwide, the census impacts:



**Money**

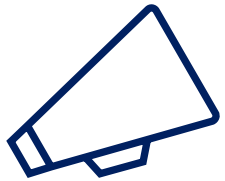
Influences roughly $1.5 trillion in federal funds

**Influence**

Determines apportionment and district boundaries

**Planning & Research**

Identifies local needs and evaluates impact



**Advocacy**

Addresses policy gaps for underserved populations

Sources:
POGO (2020) (Retrieved from https://www.pogo.org/analysis/2020/03/the-importance-of-the-2020-census-explained-in-dollars-and-cents)
U.S. Census Bureau (2021) (Retrieved from https://www.census.gov/data/tables/2020/dec/2020-apportionment-data.html)

The decennial census helps Congress to distribute ***billions of dollars*** in federal funding, grants and support for:

- schools,
- hospitals,
- roads,
- public works and infrastructure, and
- other projects.

The annual American Community Survey (ACS) supports near-term ***data-driven decision making*** for:

- businesses and corporations,
- preK-12 school systems,
- colleges and universities,
- state and local governments,
- faith communities,
- nonprofits,
- researchers, and the
- public sector.

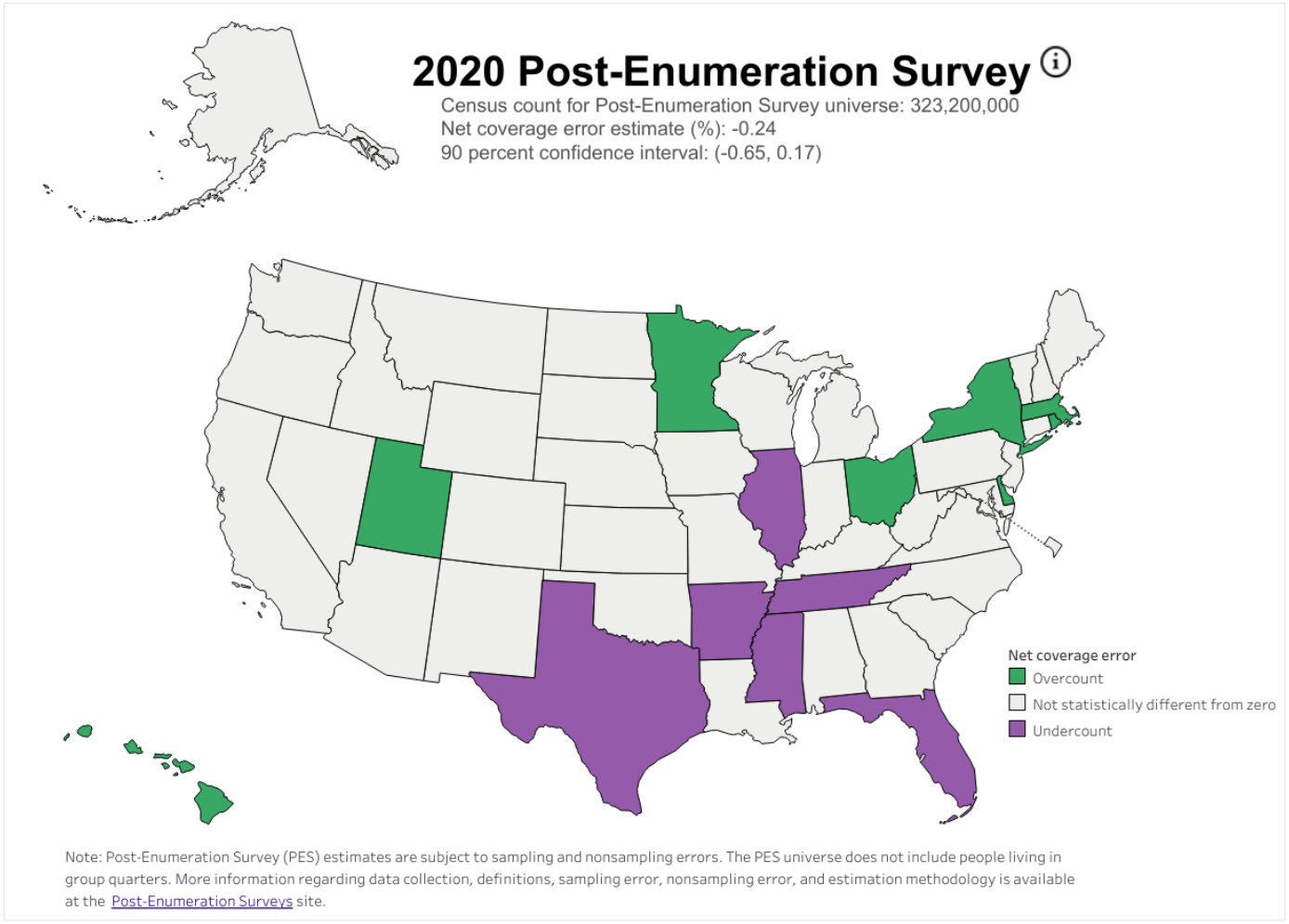
# Key Takeaway

# 1

**Counting people accurately is essential for planning, economic stability and political representation.**

**Accurate data are vital tools for maintaining a thriving Texas.**

# Challenge 1: Understanding the scope, location, and impact of the 2020 Census undercount in Texas




Texas Census Count for PES

**28,540,000**

Texas Undercount (Net Coverage Error)

**-1.92%**

Texas Undercount (Population)

**547,968**

Texas 90% Confidence Interval

**(-3.27, -0.57)**

Source: U.S. Census Bureau (2022) (Retrieved from https://www.census.gov/library/visualizations/interactive/2020-post-enumeration-survey.html).

In the 2020 Census, **547,968 Texas residents** were undercounted.

Source: U.S. Census Bureau (2022) (Retrieved from https://www.census.gov/library/visualizations/interactive/2020-post-enumeration-survey.html).

# The undercount in Texas counties

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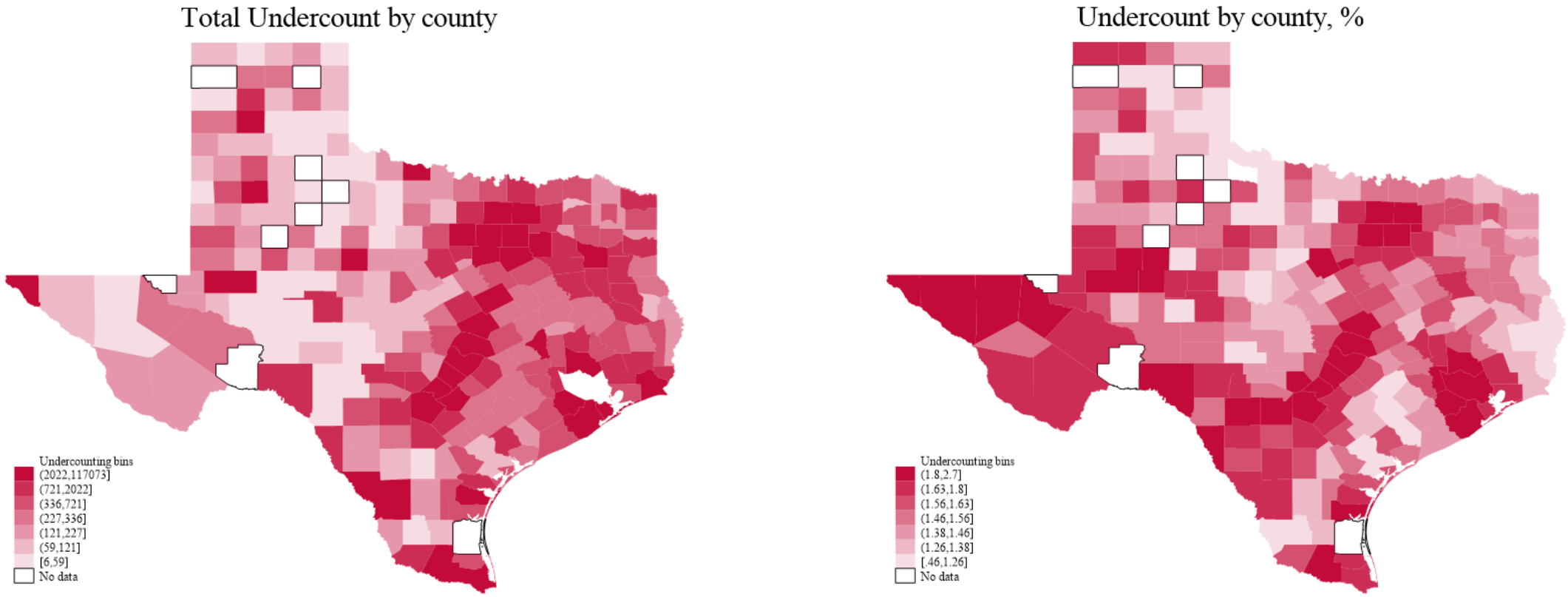
**Figure 1** Undercount in Texas counties

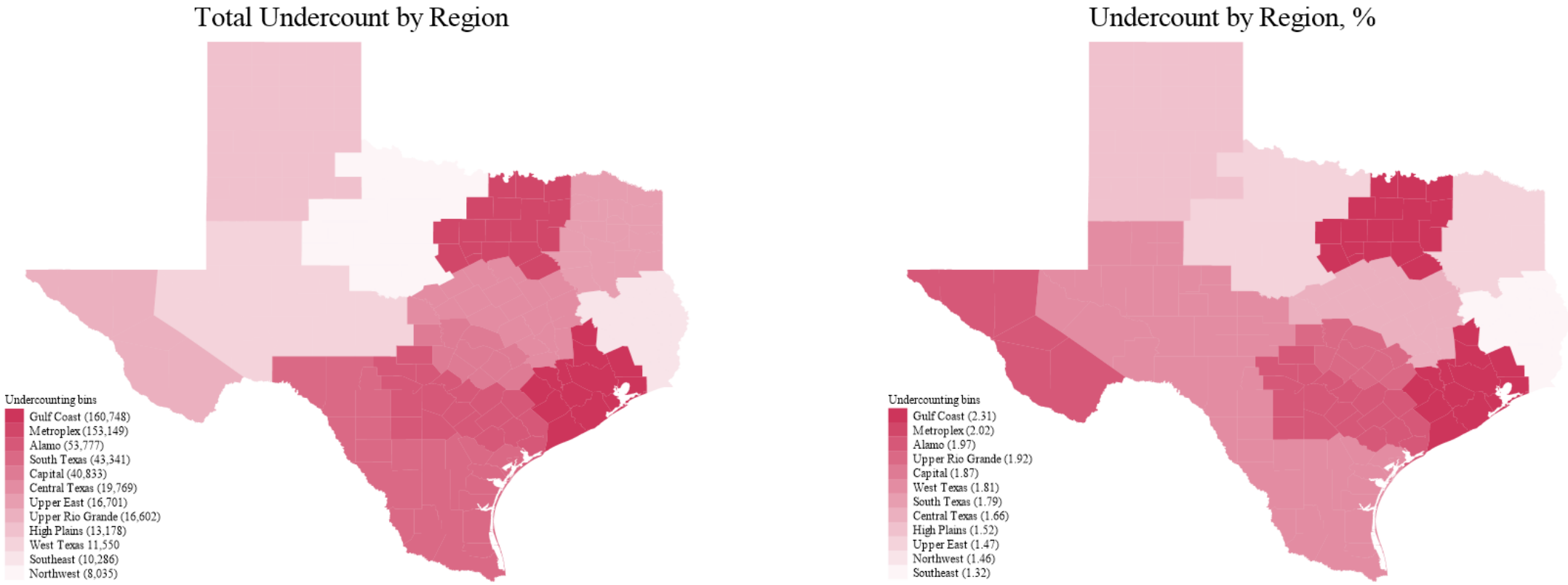



Source: Castellanos-Sosa (2022) (Retrieved from https://texascensus.org/undercounting-and-overcounting-texas-counties-population/)

Note: There is no information for the following nine counties regarding Cohesiveness by clustering and Volunteering: Borden, Hartley, Kenedy, Kent, King, Loving, Motley, Roberts, and Terrel.

# The undercount in Texas regions

**Figure 2** Undercount in Texas regions




Source: Castellanos-Sosa (2022) (Retrieved from https://texascensus.org/undercounting-and-overcounting-texas-counties-population/)
Note: There is no information for the following nine counties regarding Cohesiveness by clustering and Volunteering: Borden, Hartley, Kenedy, Kent, King, Loving, Motley, Roberts, and Terrel.

# Texas losses due to undercount

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## Texas Will Lose Over $19 Billion In Federal Funding And 1 US House Seat Due To Census Undercount

*Professor of Sociology Dudley Poston says an estimated undercount of nearly 548,000 Texans in the 2020 U.S. Census – more than any other state in the country – adds up to bad news for Texas.*

By Lesley Henton, Texas A&M University Division of Marketing & Communications • MAY 31, 2022

Source: Texas A&M Today (2022) (Retrieved from https://today.tamu.edu/2022/05/31/texas-will-lose-over-19-billion-in-federal-funding-and-1-us-house-seat-due-to-census-undercount/)

# Texas losses due to undercount

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Between 2021 and 2030, the Perryman Group estimates the 2020 Census undercount will cost Texas:

- $59.0 **billion** in gross product, and
- 641,624 in job-years

Source: Perryman Group (2022) (Retrieved from https://www.perrymangroup.com/publications/brief/2022/6/3/the-economic-impact-of-the-texas-census-undercount/)

# **Impact**: Regional Food Bank

*“The need we are seeing is much larger than the numbers would indicate. As a result our funding need is significantly greater than what we budgeted based on the data we had.”*

Source: North Texas Food Bank

# Key Takeaway

# 2

**Texas experienced a half-million+ person undercount in the 2020 Census, resulting in loss of income and representation.**

**All Texans have a strong vested interest in a more accurate 2030 Census.**

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# How does your organization rely on census data for planning or funding?

ⓘ Start presenting to display the poll results on this slide.

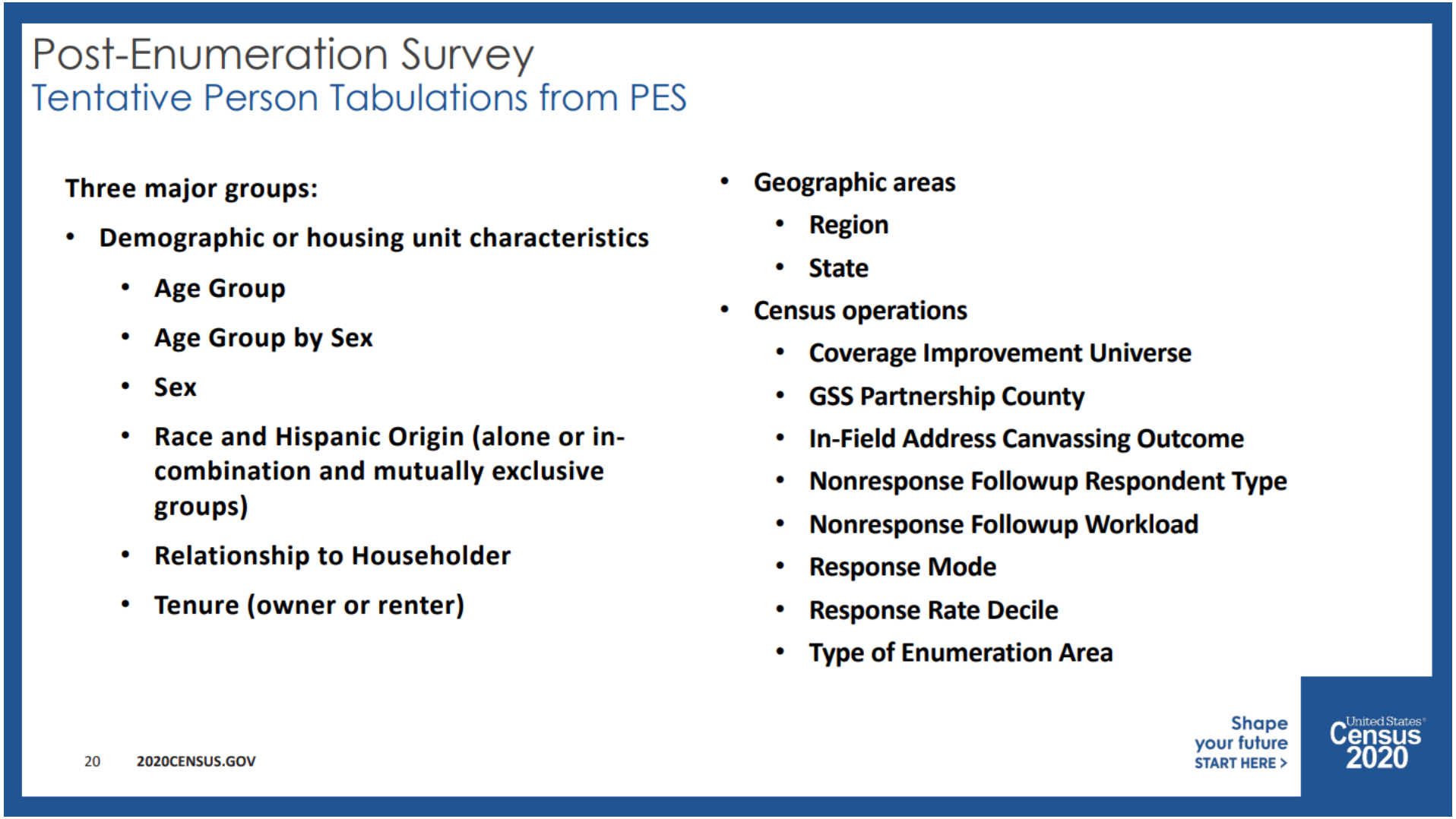
# Challenge #2: Improving self-response rates in historically undercounted communities

# How does the Bureau calculate the undercount and why do self-response rates matter?

The U.S. Census Bureau assesses the accuracy of its decennial census in two primary ways:

- Post-Enumeration Survey (PES), and
- Demographic Analysis (DA).

# Post-Enumeration Surveys




Source: U.S. Census Bureau (2021) (Retrieved from https://www2.census.gov/about/partners/cac/nac/meetings/2021-05/presentation-post-enumeration-survey-overview.pdf)

In its origin, undercount and overcount are estimated as $Net\ Coverage\ Error$ as follows:

$$Net\ Coverage\ Error = Census\ Count - DSE$$

Where $DSE$ is the Dual-System Estimation.

Source: U.S. Census Bureau (2022) (Retrieved from https://www2.census.gov/programs-surveys/decennial/coverage-measurement/pes/2020-pes-estimation-design.pdf)

The $DSE$ for the $PES$ is estimated as follows:

$$\widehat{N}_{++} = N_{1+}\left(\frac{N_{+1}}{N_{11}}\right)$$

Where:

- $\widehat{N}_{++}$ is the dual-system estimate of the total population.
- $N_{1+}$ is the population correctly captured by the census.
- $N_{+1}$ is the population correctly captured by the PES.
- $N_{11}$ is the population captured by both the census and the PES.

Source: U.S. Census Bureau (2022) (Retrieved from https://www2.census.gov/programs-surveys/decennial/coverage-measurement/pes/2020-pes-estimation-design.pdf)

# Demographic Analysis

**Table 1. Description of the Three Official Sets of 2020 DA Estimates**

| Populations | Characteristics | Cohorts |
|---|---|---|
| Black alone/non-Black alone | Age, sex, race | 0-85+ |
| Black alone or in combination/ non-Black alone or in combination | Age, sex, race | 0-85+ |
| Hispanic/non-Hispanic | Age, sex, Hispanic origin | 0-29 |

Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

Source: U.S. Census Bureau (2020) (Retrieved from https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2020da_methodology.pdf)

DA Estimates are obtained using official records and other U.S. Census Bureau's products (such as the ACS). Its overall structure can be measured as follows:

$$DA\ Estimate = \begin{array}{l} Births \\ -Deaths \\ +Net\ international\ migration \\ +Medicare\ based\ estimate\ for\ people\ 75\ and\ over \end{array}$$

Source: U.S. Census Bureau (2020) (https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2020da_methodology.pdf)

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**Table 2. 2020 Demographic Analysis Ledger by Component, Data Source, and Cohort**

| | Natural Increase | | International Migration | | | | Armed Forces | | Oldest Ages | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Births** | **Native Deaths** | **Foreign-Born Population** | **Born Abroad of U.S. Citizen Parents** | **Native-Born Net Migration** | **Net Migration from Puerto Rico** | **Armed Forces Overseas** | **Armed Forces Overseas Deaths** | **Population Ages 75 and Over** | **Resident Population** |
| | Vital records with correction to birth registration adjustment | Vital records | Projected ACS data with adjustments for coverage | Projected ACS data | Foreign Census Method; adjustment for children in Mexico | ACS, PRCS, and U.S Air Carriers Traffic and Capacity data | Administrative records from the Defense Manpower Data Center | 2010 DA Estimates and archival data | Medicare records; ACS enrollment factors | Total |
| **Age in 2020** | **1945-2020 (+)** | **1945-2020 (-)** | **Stock in 2020 (+)** | **Stock in 2020 (+)** | **1945-2020 (+)** | **1945-2020 (+)** | **Stock in 2020 (-)** | **2020 (-)** | **2020 (+)** | **April 1, 2020** |
| 0-17 | *N* | *N* | *N* | *N* | *N* | *N* | . | . | . | *N* |
| 18-64 | *N* | *N* | *N* | *N* | *N* | *N* | *N* | *N* | . | *N* |
| 65-74 | *N* | *N* | *N* | *N* | *N* | *N* | . | *N* | . | *N* |
| 75-99 | . | . | . | . | . | . | . | . | *N* | *N* |
| 100+ | . | . | . | . | . | . | . | . | *N* | *N* |

Note: The "*N*" in the table represents cells that will be populated with an estimate, while "." represents cells that will not have an estimate. Acronyms in this table include American Community Survey (ACS), Puerto Rico Community Survey (PRCS), and Demographic Analysis (DA).

Source: U.S. Census Bureau, Population Division, 2020 Demographic Analysis (December 2020 release).

Source: U.S. Census Bureau (2020) (https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2020da_methodology.pdf)

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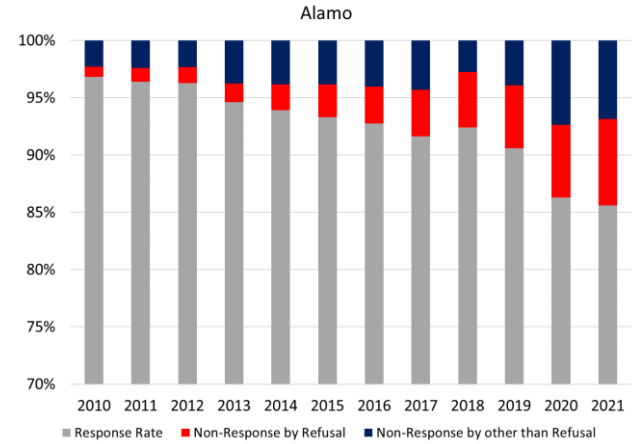
# Post-Enumeration Surveys and Demographic Analysis both use individual or **“self-response”** as their primary source of data.

- The Bureau identifies communities where self-response rates are low as “historically undercounted” communities.
- Historically undercounted communities’ self-response rates, despite enumeration, remain persistently lower than self-response rates in other communities.


Alamo
100%
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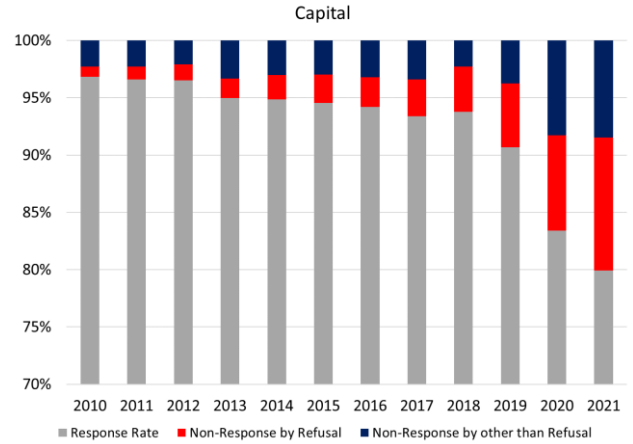
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Response Rate
Non-Response by Refusal
Non-Response by other than Refusal


Capital
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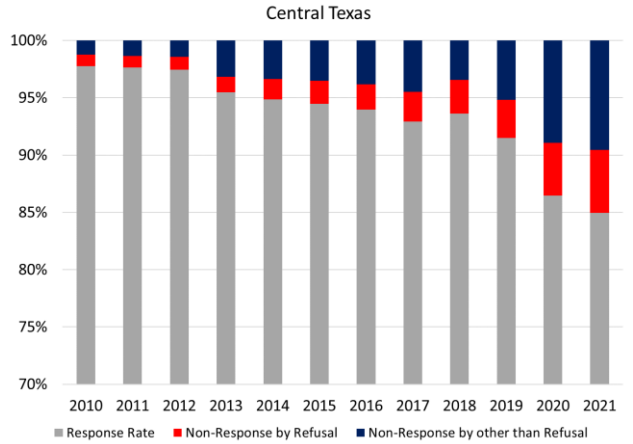
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Response Rate
Non-Response by Refusal
Non-Response by other than Refusal


Central Texas
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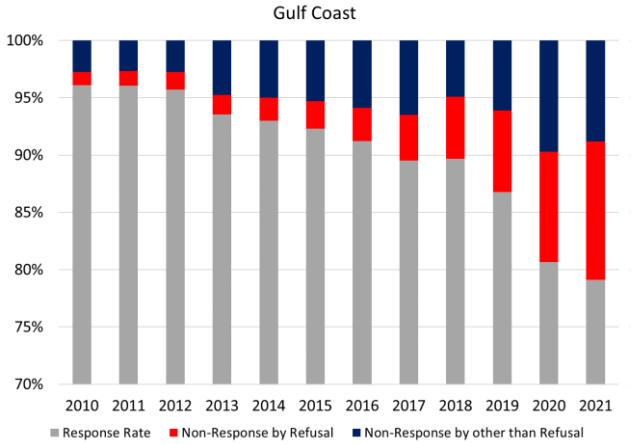
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Response Rate
Non-Response by Refusal
Non-Response by other than Refusal


Gulf Coast
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2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
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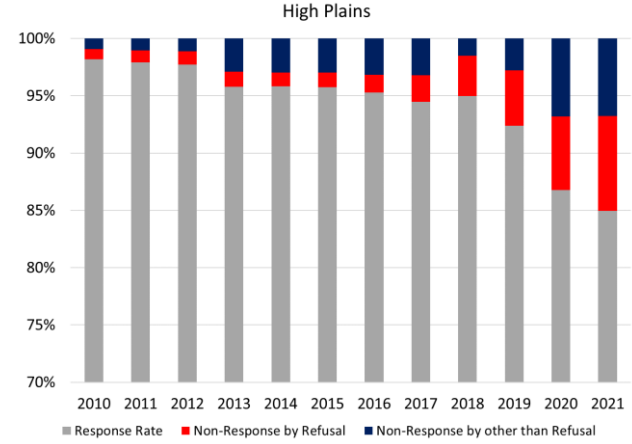
High Plains
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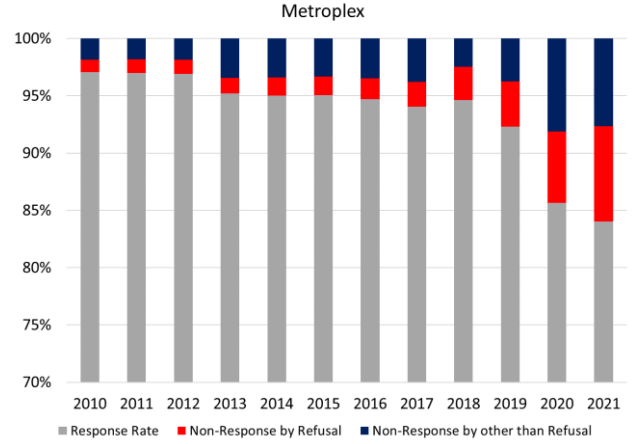
Metroplex
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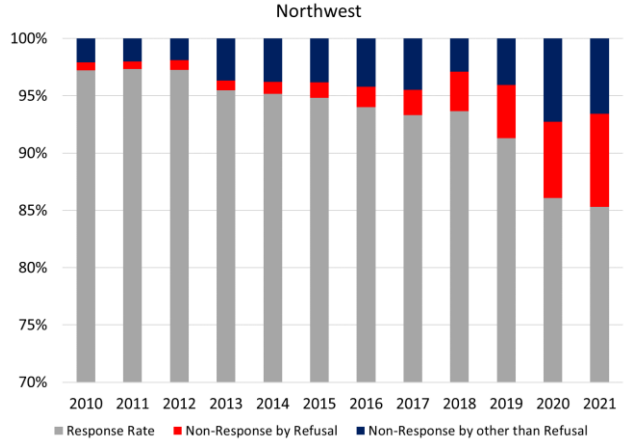
Northwest
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Response Rate
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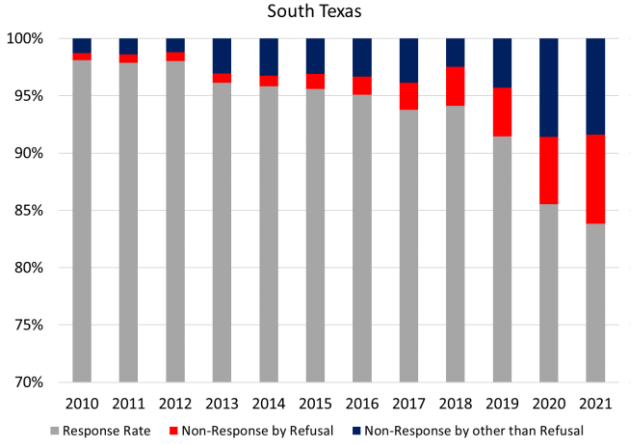
South Texas
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Response Rate
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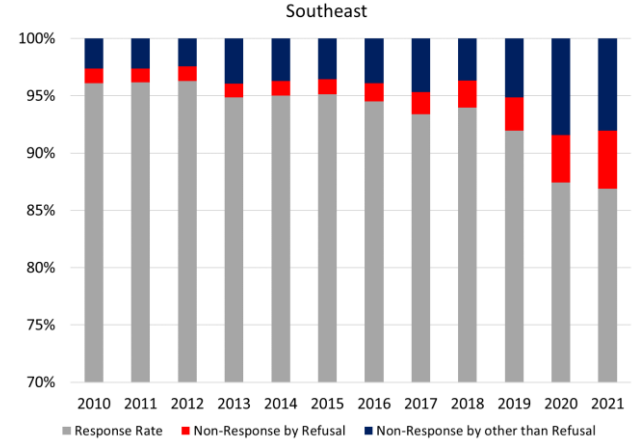
Non-Response by other than Refusal


Southeast
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2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Response Rate
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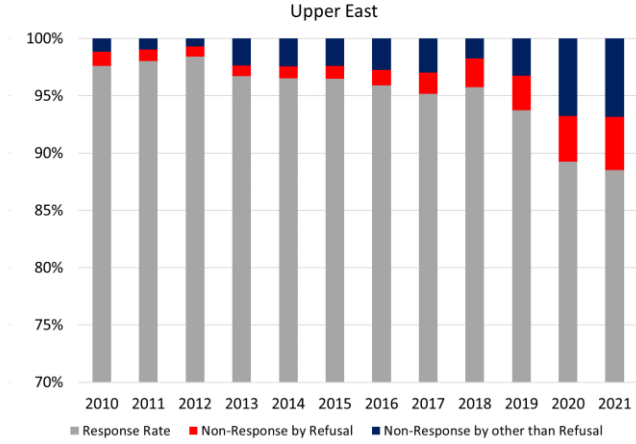
Non-Response by other than Refusal


Upper East
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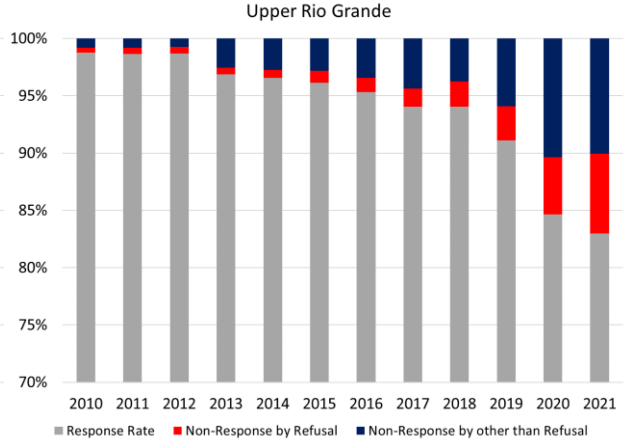
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Response Rate
Non-Response by Refusal
Non-Response by other than Refusal


Upper Rio Grande
100%
95%
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2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Response Rate
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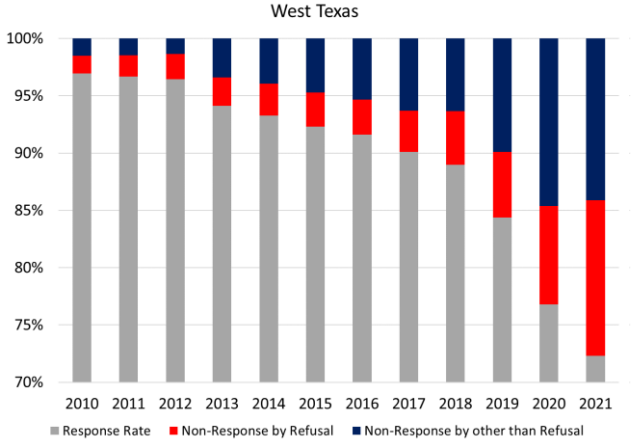
Non-Response by other than Refusal


West Texas
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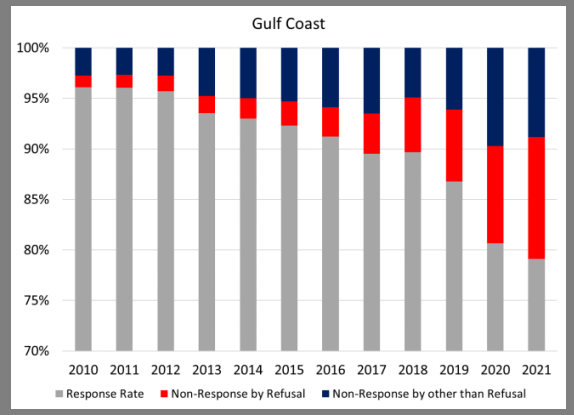


# **Impact**: Early childhood care and education

*Two primary drivers determine K-12 academic outcomes: the mother's education level and access to quality early childhood education.*

*In Harris and Hidalgo counties low self-response rates in 2010 reduced funding for Head Start so that it could only serve <25% of the need. In 2020 there was an even more dramatic drop. Children and families have been deprived of essential early childhood care for over a decade.*

Source: Texas Tribune 2019 (Retrieved from https://www.texastribune.org/2019/08/27/Texas-census-2020-efforts-turn-to-schools-prevent-undercount/)

# What are some potential determinants of undercount that could help increase self-response rates?

# Potential determinants of undercount and overcount

Personal

- Social capital
- Social exchange

Geographical

- Easiness to reach
- Accuracy in Master Address File

Census Features

- Marketing strategies
- Internet / Technology accessibility

Source: Castellanos-Sosa (2022) (Retrieved from https://texascensus.org/undercounting-and-overcounting-texas-counties-population/)

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## Key Takeaway

# 3

**Higher self-response rates are key to increasing census accuracy.**

**Texas' undercount and loss of resources would be lower if self-response rates were higher.**

# How might your organization contribute to census data accuracy?



**Money**

Influences roughly $1.5 trillion in federal funds



**Influence**

Determines apportionment and district boundaries

**Planning & Research**

Identifies local needs and evaluates impact



**Advocacy**

Addresses policy gaps for underserved populations

Sources:
POGO (2020) (Retrieved from https://www.pogo.org/analysis/2020/03/the-importance-of-the-2020-census-explained-in-dollars-and-cents)
U.S. Census Bureau (2021) (Retrieved from https://www.census.gov/data/tables/2020/dec/2020-apportionment-data.html)

# Amplifying the US Census Bureau's activities in historically undercounted communities

# What do we know about historically undercounted communities?

Historically undercounted communities are those for whom a **real or perceived barrier exists for full and representative inclusion in the data collection process**.

Some examples of common historically undercounted populations include people experiencing homelessness, historically marginalized groups, and nomadic peoples.

Historically undercounted populations in Texas are concentrated in the **Gulf Coast, High Plains, West Texas, South Texas,** and **Upper Rio Grande** regions of Texas.

Source: U.S. Census Bureau (2019) (Retrieved from https://www.census.gov/content/dam/Census/library/working-papers/2019/demo/historically undercounted-Populations-Brief.pdf) and Hard to Count (2020) (Retrieved from https://www.censushardtocountmaps2020.us/img/mappdfs/Texas.pdf)

In the 2020 Census, 547,968 Texas residents were uncounted.

There is a **strong correlation** between the undercount, individual self-response rates, and poverty and poverty-related challenges.

Source: US Census Bureau 2020 Census; US Census Bureau (2020)(Retrieved from https://www.census.gov/content/dam/Census/library/factsheets/2020/dec/mission-count-everyone/mission-count-everyone.pdf)

# Historically undercounted Texans

- **14.7% of Texans live below the poverty line.**
- **20% of Texans live just above the poverty line.**
- 30% of Texas households are renters.
- 5% of households with children under 18 are single-parent homes.
- Approximately 8% of households in Texas are LEP.
- 17% of the state population was born outside of the US.
- Texas has the **second largest Hispanic and African American populations** in the US and the **third largest Asian population**.
- Minority populations, especially Hispanic children, are least likely to be counted.

Source: US Census Bureau 2020 Census; US Census Bureau (2020) (Retrieved from https://www.census.gov/content/dam/Census/library/factsheets/2020/dec/mission-count-everyone/mission-count-everyone.pdf)

# Key Takeaway

# 4

**Inaccurate data can have a compounding effect in communities where census-based resources are most needed.**

# How might Texas counteract low self-response rates in historically undercounted communities?

# Counteracting low self-response rates

Measures to counteract low self-response rates include:

- Community organizing (early and broadly)
- Accessibility (language, media, broadband, ease)
- Trust (trusted intermediaries, face-to-face interactions, census data security)
- Messaging (every person matters, census benefits to children and families, money back to communities)

Source: Census 2020 Campaign: Final Measurement Report - California's 15 Hardest-to-Count Populations; Social Quest, Inc (2020), Retrieved from https://census.ca.gov/wp-content/uploads/sites/4/2021/05/Report_CCCO_historically undercounted-Campaign_Final-Assessment_Dec2020_full_1.pdf

# Engaging undercounted communities in the research process

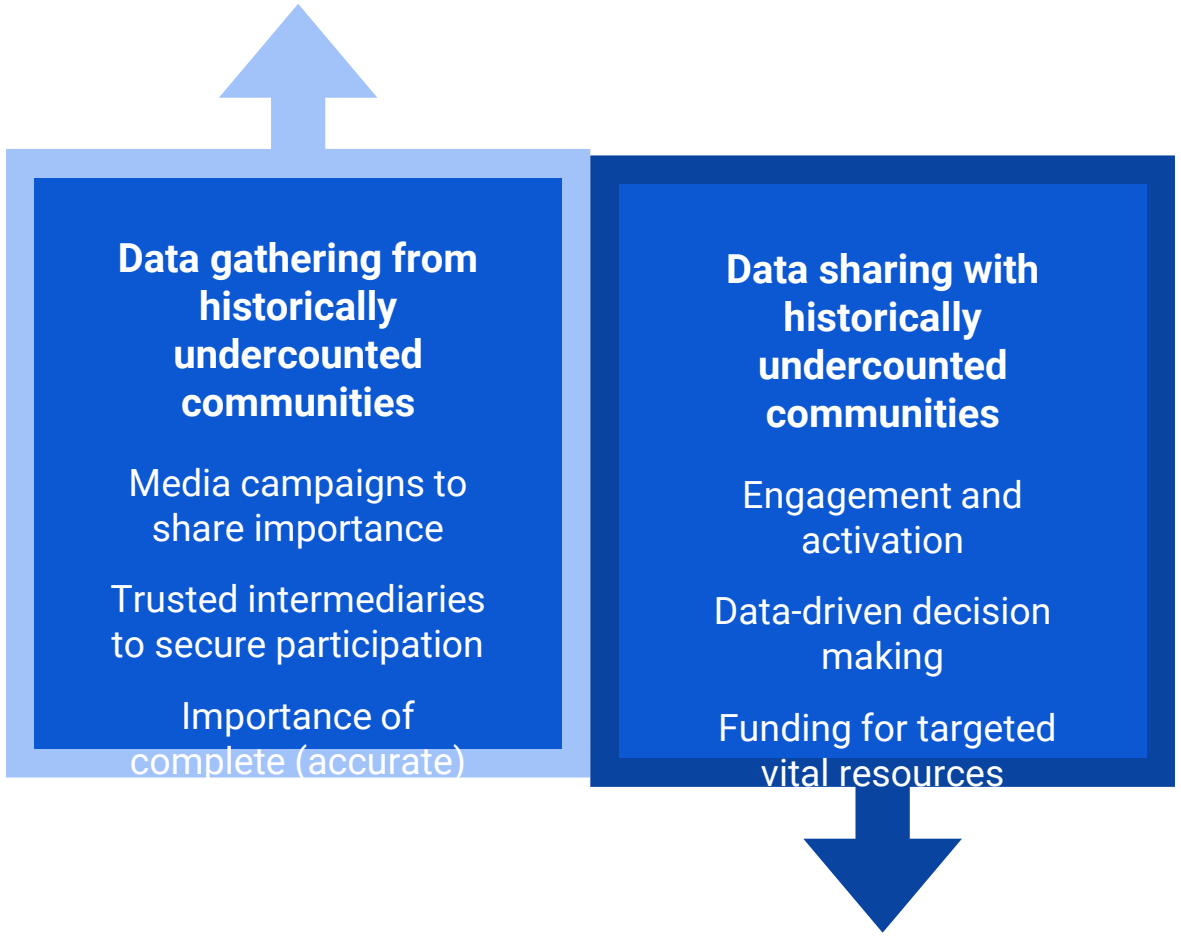
# Goal: Equitable data flows = better data

Equitable data flows:

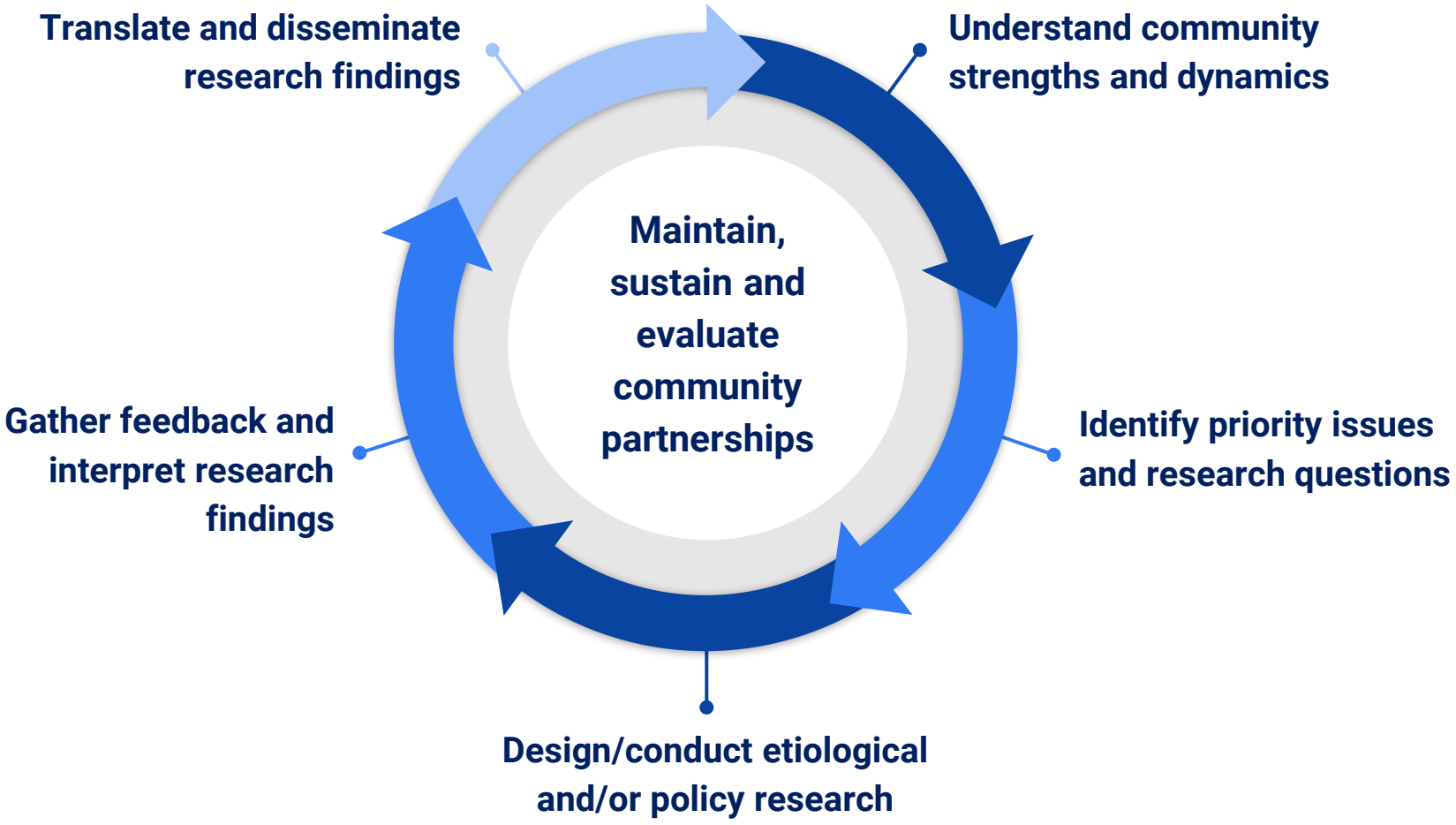
- avoid valuing only the dominant culture
- broaden access to community-level data
- support sharing control of collected data, and
- use data collection as an opportunity to change practices.

Source: Detroit Urban Resource Center (Retrieved from https://detroiturc.org/programs-expertise/cbpr-partnership-academy)

# Method: Community Based Participatory Research introduces two-way data flows into the census conversation



# Strategy: Essential elements



# Outcome: Accurate data, greater impact

- Benefits community participants, practitioners, and researchers alike.
- Creates bridges between scientists and communities, through the use of shared knowledge and valuable experiences.
- Ensures culturally appropriate measurement instruments making projects more effective and efficient.
- Enhances both the quantity and the quality of data collected.

"The ultimate benefit is a deeper understanding of a community's unique circumstances, and a **more accurate framework for testing and adapting best practices** to the community's needs."

Source: Vishwanathan, M (2004) et al, Community-Based Participatory Research: Assessing the Evidence: Summary; National Library of Medicine.

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## Key Takeaway

# 5

**The private (social) sector has an essential role in ensuring the U.S. Census Bureau collects and provides *strong and accurate data* through *community engagement in gathering and disseminating data*.**

# Your contribution to census data accuracy



**Money**

Influences roughly $1.5 trillion in federal funds

**Influence**

Determines apportionment and district boundaries



**Planning & Research**

Identifies local needs and evaluates impact



**Advocacy**

Addresses policy gaps for underserved populations

Sources:
POGO (2020) (Retrieved from https://www.pogo.org/analysis/2020/03/the-importance-of-the-2020-census-explained-in-dollars-and-cents)
U.S. Census Bureau (2021) (Retrieved from https://www.census.gov/data/tables/2020/dec/2020-apportionment-data.html)

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# How might you begin to engage with community-based organizations and local leaders as valued data collectors and contributors who will help support a complete count?

ⓘ Start presenting to display the poll results on this slide.

# Key Takeaway

# 6

**The social sector's role must include engaging historically undercounted communities in all aspects of the 2030 Census.**

# Questions? We'd love your ideas on how we can work together.

# Contact us!

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