Developing and Evaluating Self-Response Rate Projections for the 2020 Census

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Development Methodology

- Daily self-response projections assisted with planning and monitoring the 2020 Census
  - Self-response supported and promoted in largest type of enumeration areas (TEA)
    - TEA 1, self-response: households receive their census invitation in the mail
    - TEA 6, update leave: census invitation is dropped off at each household

- Produced through a combination of
  - Predicted Self-Response Scores (PSRS)
  - Expert opinion-based projections, constructed from 2010 Census data, mid-decade tests, and general survey response trend
  - External Demand Model Response Curves

- Self-response rates for Puerto Rico and U.S. territories not included in these projections

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Predicted Self-Response Scores

- Predicted Self-Response Scores (PSRS) project
  - Goal was to create a pair of regression models that can predict self-response from characteristics of census tracts
  - An extension of the Low Response Score
- Two models were used to separately predict internet and mail+internet self-response
- Four model types were considered, and Least Squares regression was chosen
- Models were fit using tract-level data and American Community Survey (ACS) self-response data

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Adjustments and Expert Opinion

- Internet self-response was adjusted for 2020 Census mailings
- Phone self-response estimates were created
- Final estimates were adjusted to match end-of-self-response projections for 2020 Census

Final Self-Response Estimates by Mode

Mail	Internet	Phone	Total
17.7%	44.3%	4.7%	66.6%

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External Demand Model

- Describe patterns of self-response following a census-related event
  - E.g., receiving a census mailing, the awareness push around Census Day
  - Separate models for mail, internet, and phone self-response

- Response patterns are combined with the schedule of planned census events to produce estimates of self-response on each day of the self-response period
  - Separate response curves were produced for each mailing schedule

- Response curves were combined with PSRS values to produce daily estimates
  - Geographies were matched with response curves according to mailing schedule
  - Response curves were scaled by self-response estimates

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Covid-19 Adjustments

- COVID-19 resulted in changes to the 2020 Census schedule
  - Some census operations were paused or delayed
    - Update Leave (TEA 6) was paused from March 16, until June (???)
    - The start of Nonresponse Follow-up was delayed
    - Daily self-response predictions were adjusted to account for changes in 2020 Census operational schedule
  - Self-response was extended from July 31 to October 15
    - Daily projections were extended to cover the longer self-response period
    - Internet self-response predictions were increased slightly

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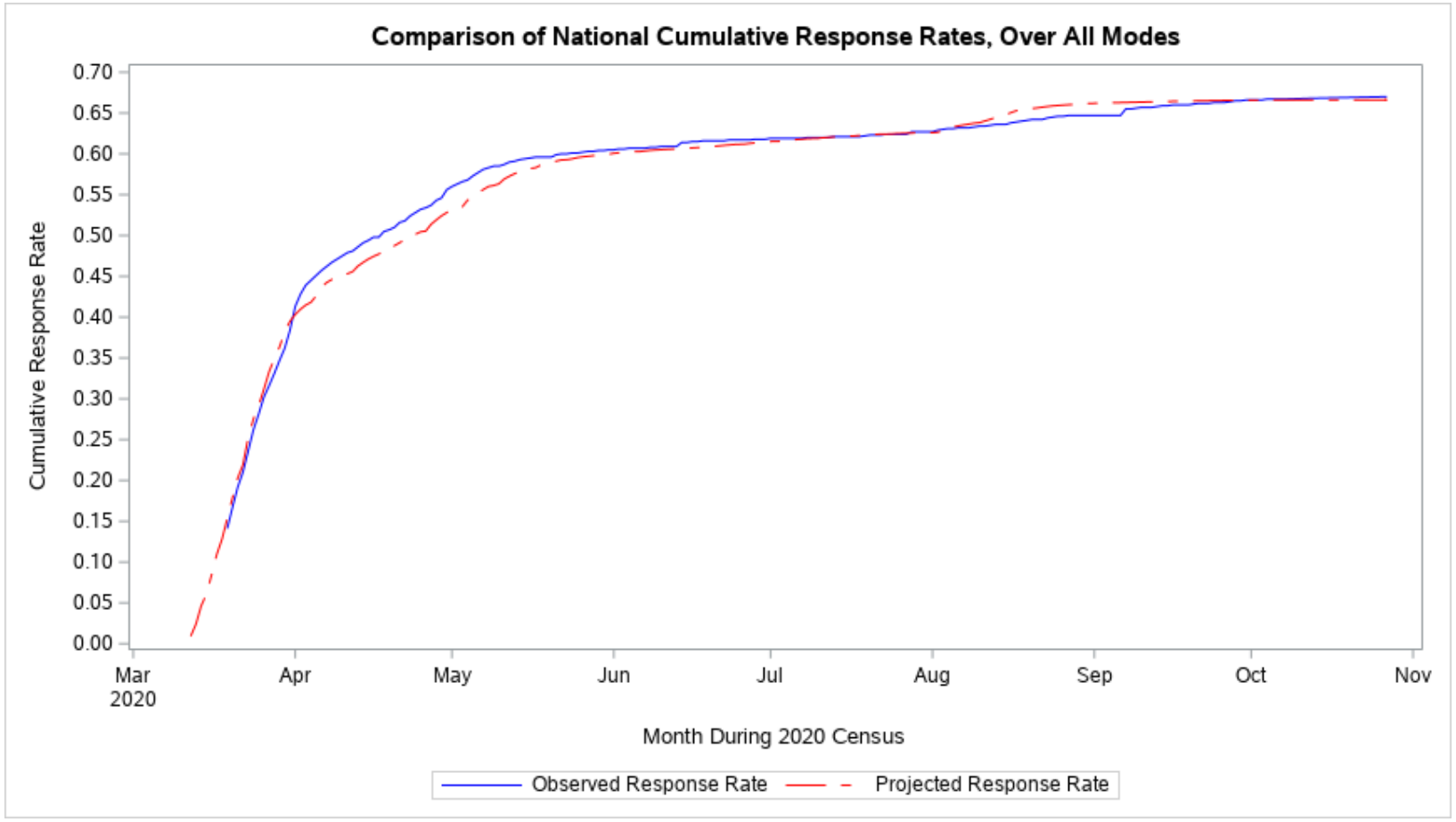
Results



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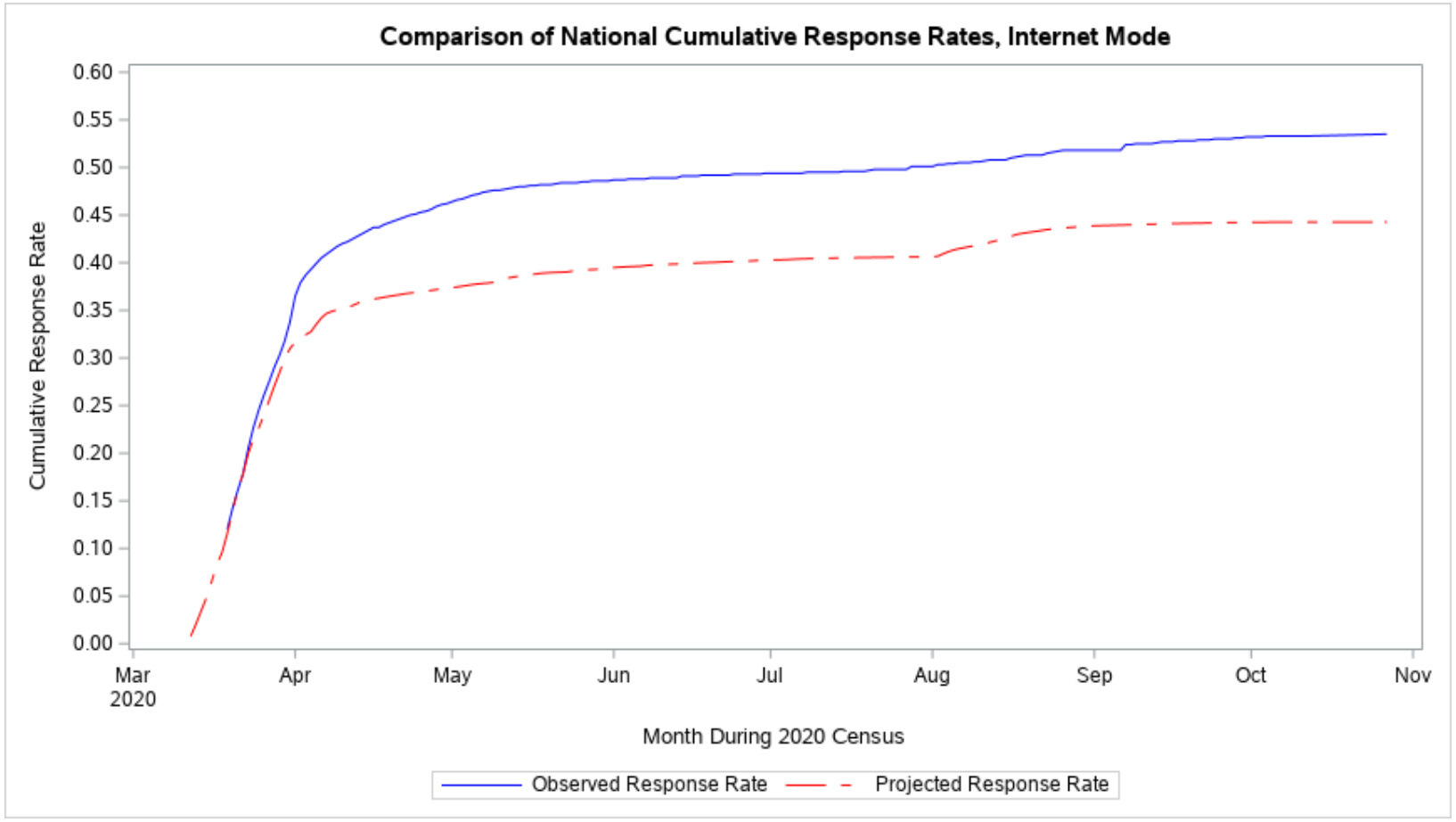
Results



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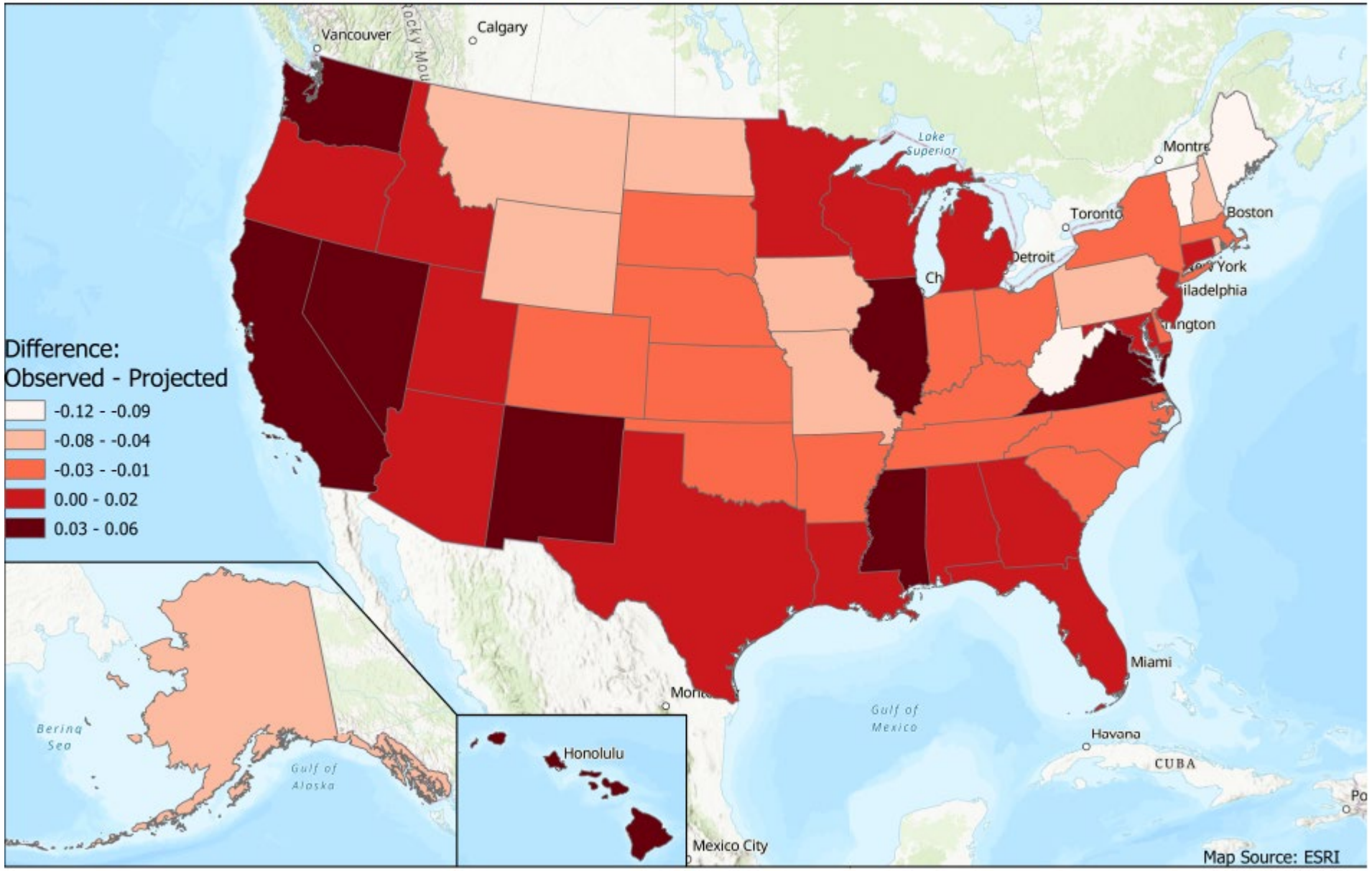
Differences Between Observed and Projected Cumulative Self-Response Rates, Over All Modes, End of 2020 Census



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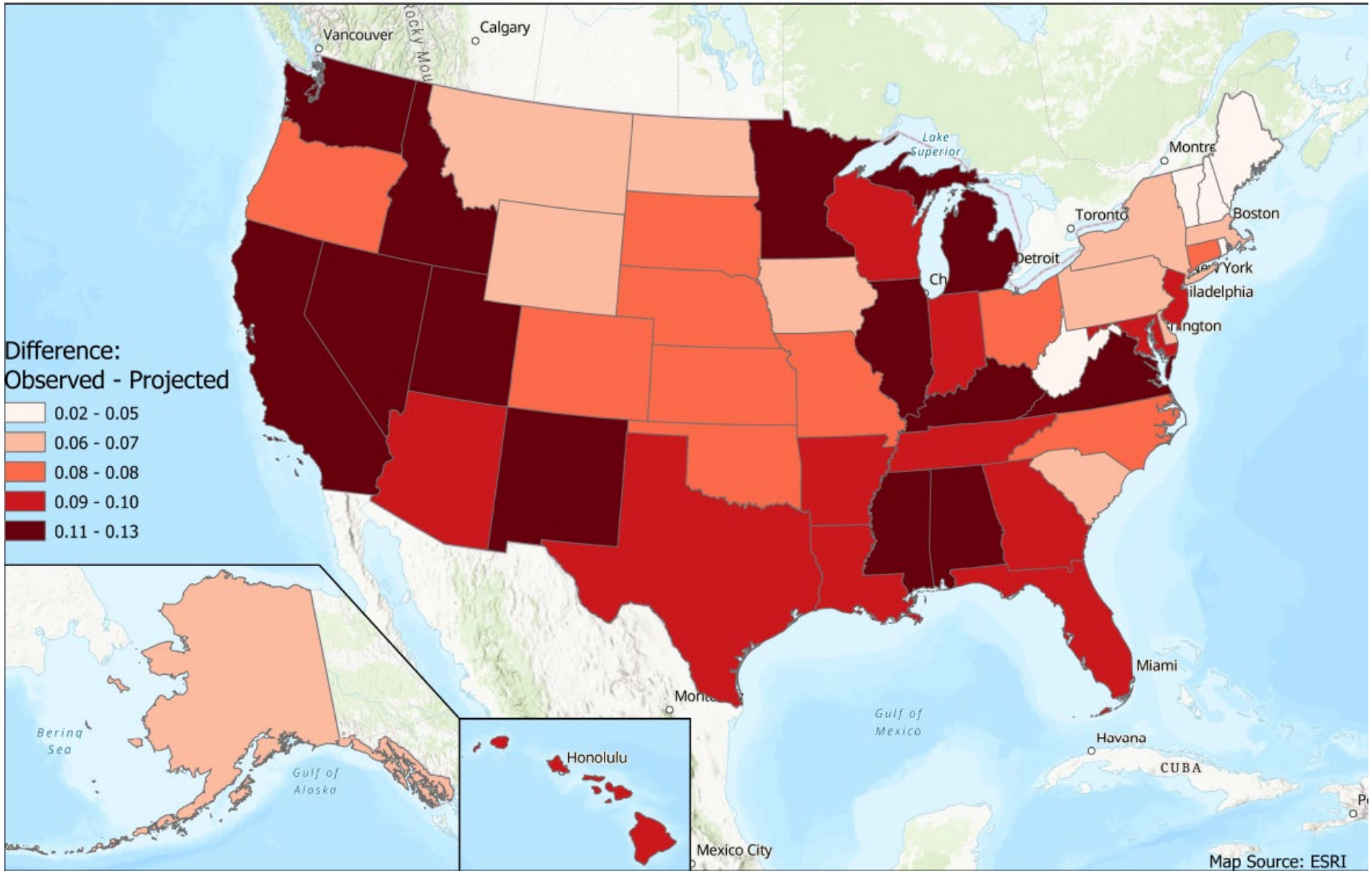
Differences Between Observed and Projected Cumulative Self-Response Rates, Internet Mode, End of 2020 Census



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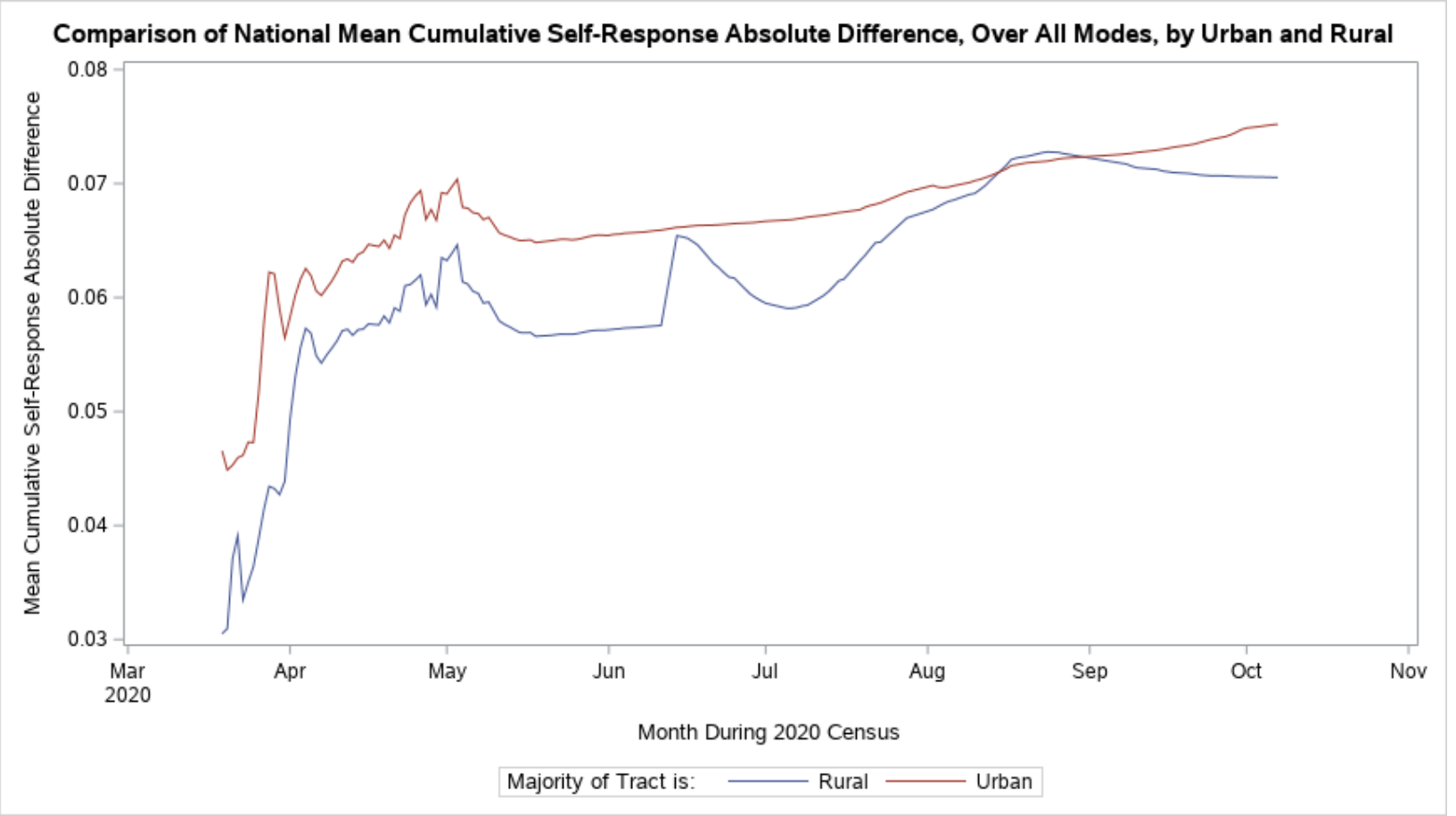

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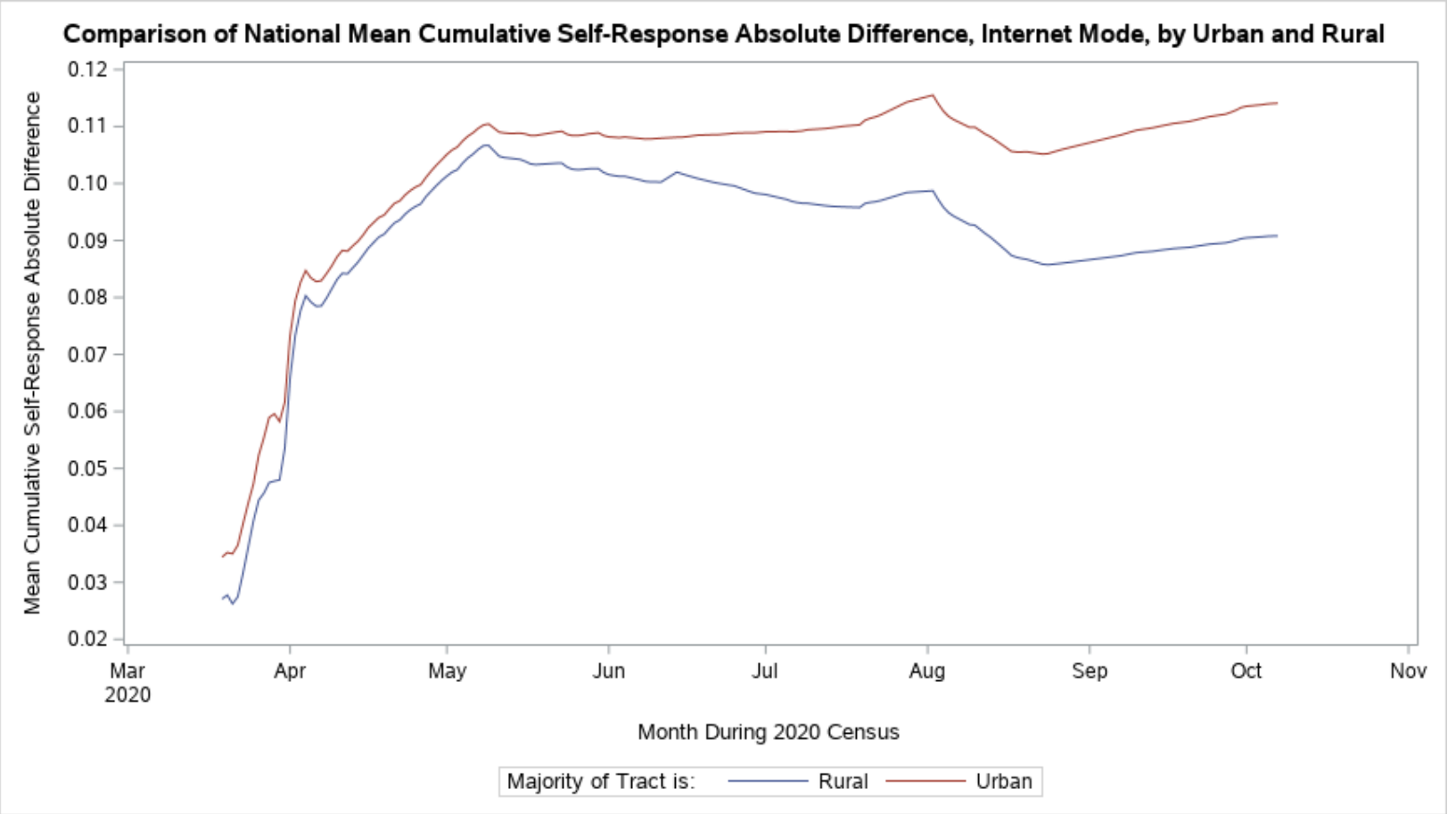

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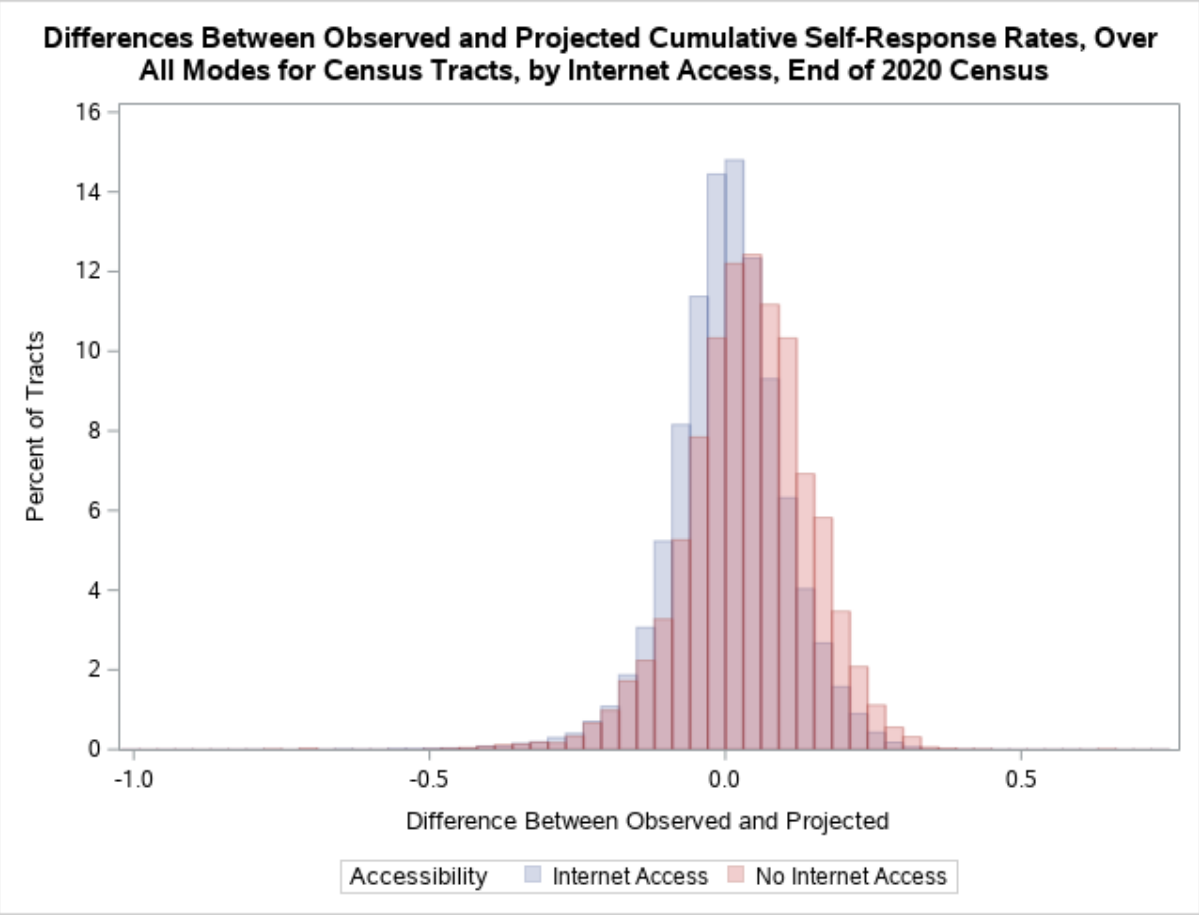

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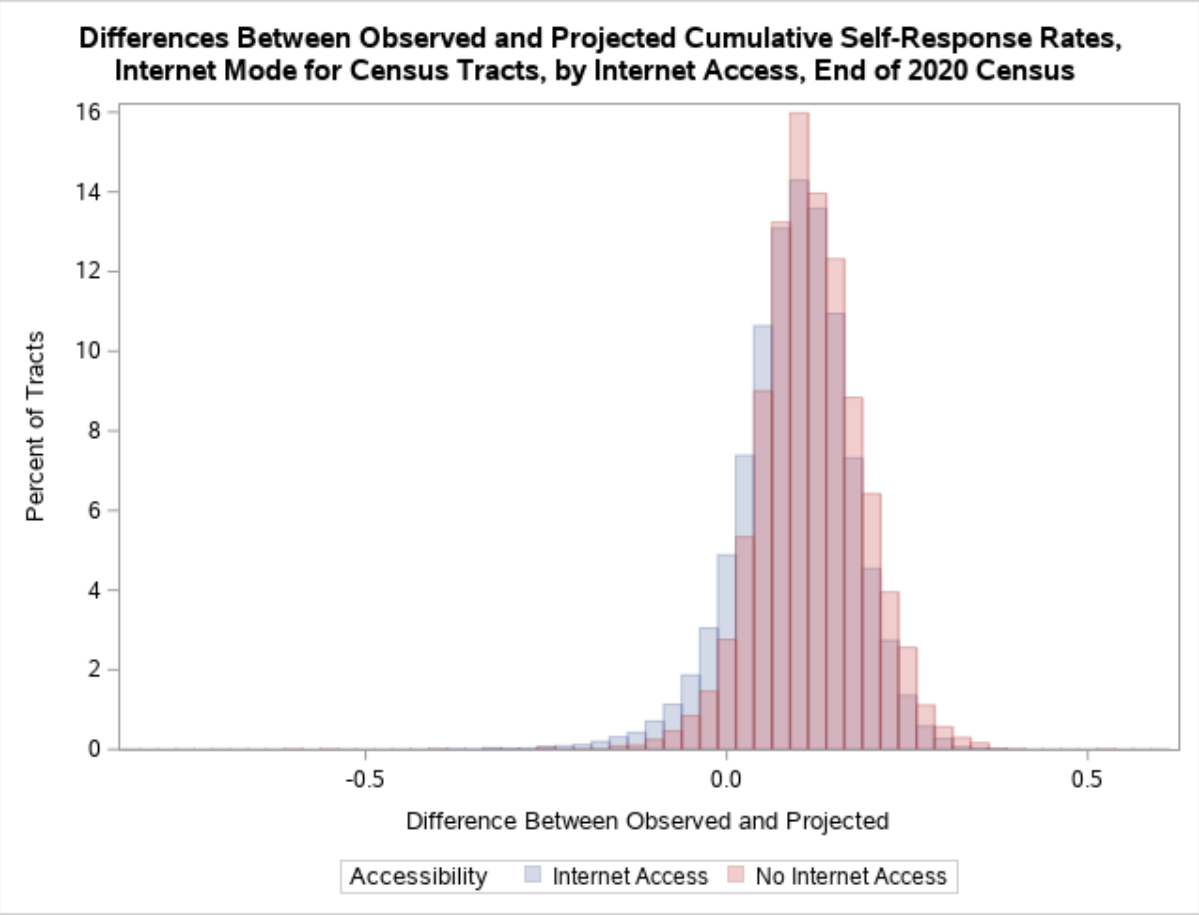

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Questions?

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