WITHIN-HOUSEHOLD RESPONDENT SELECTION

Survey Error Tradeoffs

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1 Research Questions

What is the effect of different within-household telephone sampling procedures on…

- Survey response?
- Operational dimensions?
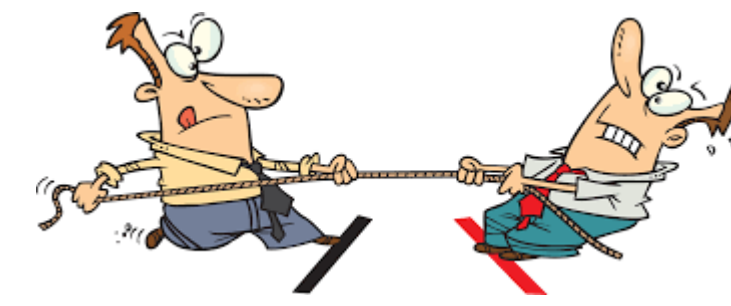- Sample characteristics?
- Demographic representativeness?

2 Household Sampling Maxims

- ✓ **Do** randomly select designated respondent from all eligible respondents
- ☒ **Do not** sample the most willing and most available

  Or risk a sample that potentially over-represents…
  - Females
  - Older adults
  - Underemployed adults

  Tension between non-response error and within-household coverage error

3 Study Background

Since 1979, the Coastal Household Telephone Survey (CHTS) has produced estimates on marine recreational fishing effort in U.S. coastal counties.
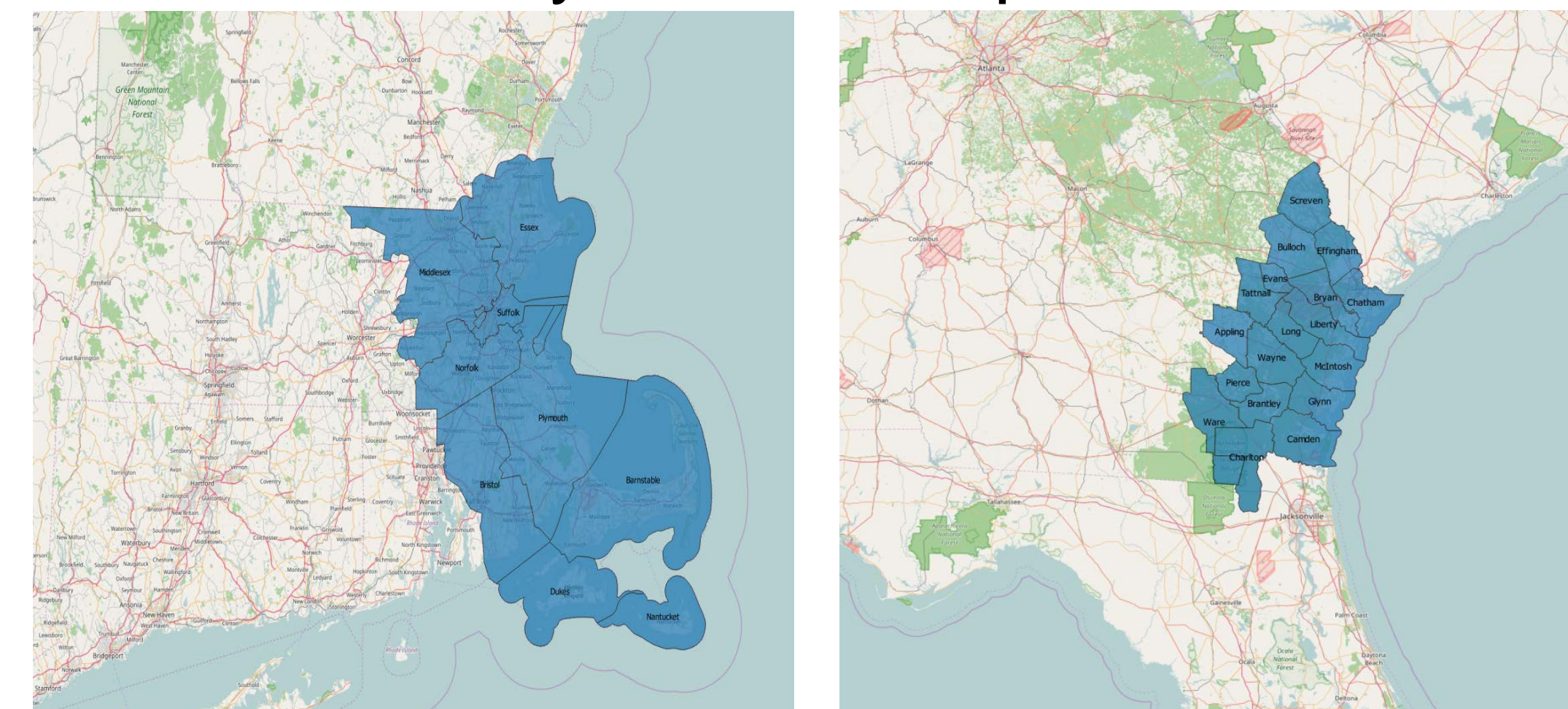
Design

- Random Digit Dial (RDD) landline telephone survey
- Informant (i.e., person who answers the telephone) answers screening questions on fishing effort to determine if household is classified as a fishing household

4 Experimental Design

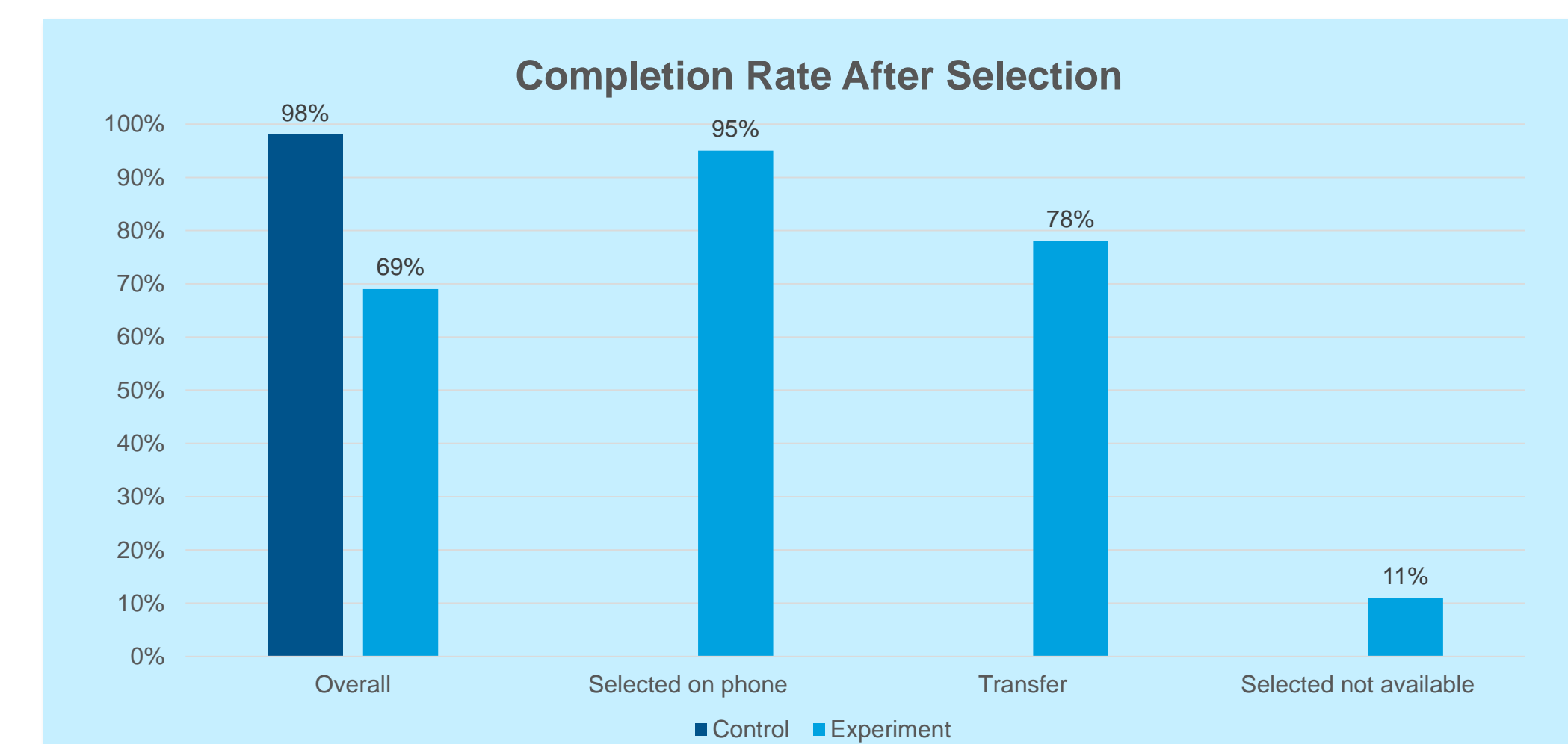| Treatment Group	Mode	Sample Universe	Respondent Selection	# Calls	Sample n
Control	CATI	RDD landline telephone numbers	Household adult that answered telephone	5+	7,500
Experiment	CATI	RDD landline telephone numbers	Randomly selected household adult via Rizzo, Brick, Park (RBP) method[1].	5+	7,500

Study Area for Experiment

Massachusetts   Georgia

Response Rate *   Productivity Rate

- Experimental treatment group significantly less productive in generating interviews per sample unit and per labor hour
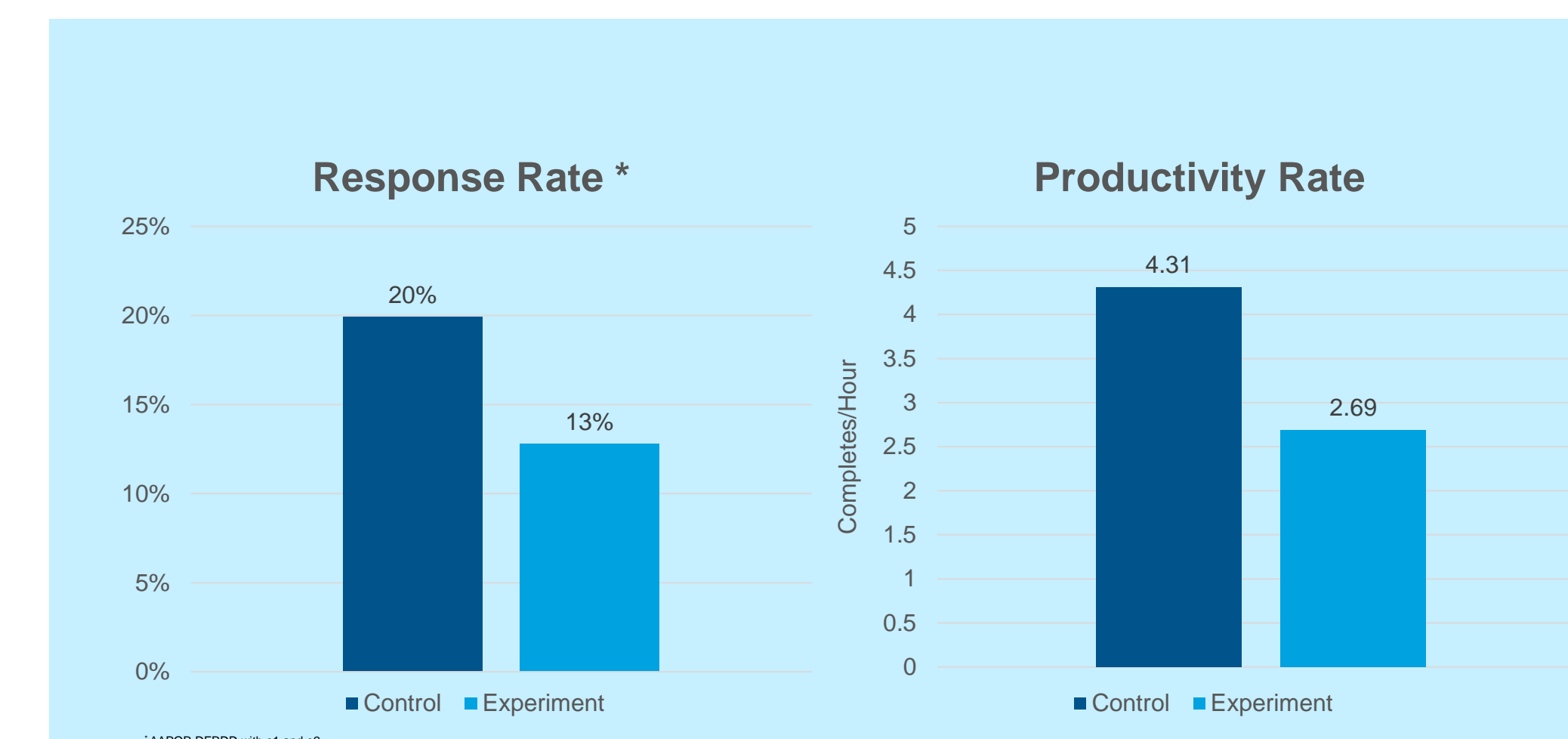
5 Analysis

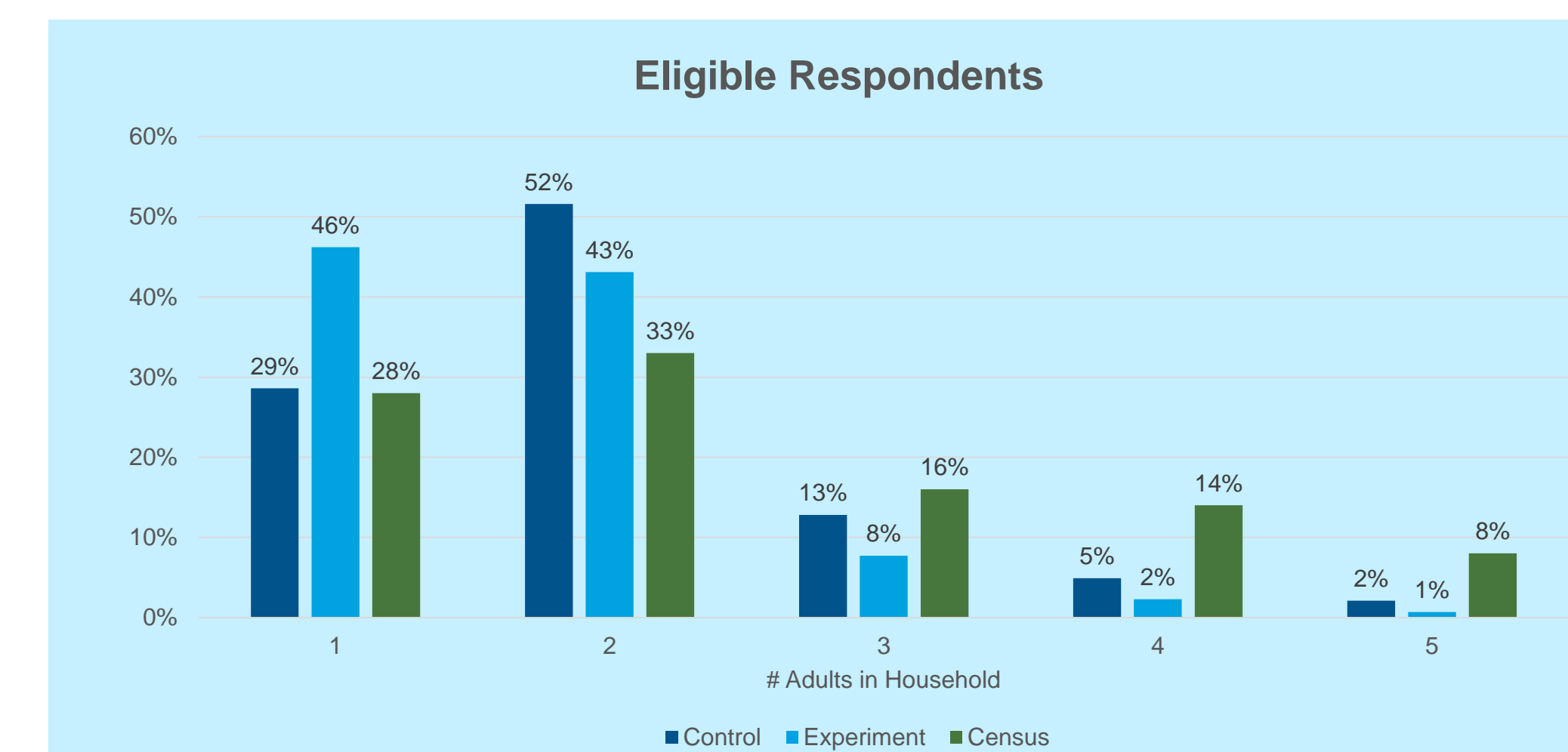#### Completion Rate After Selection

- Transferring to a selected respondent within the same call slightly reduces chance of a completed survey. When the selected adult was available 78% of interviews were completed.
- Calling back to speak with a selected respondent dramatically reduces chance of a completed survey. When the selected adult was not available 11% of interviews were completed.
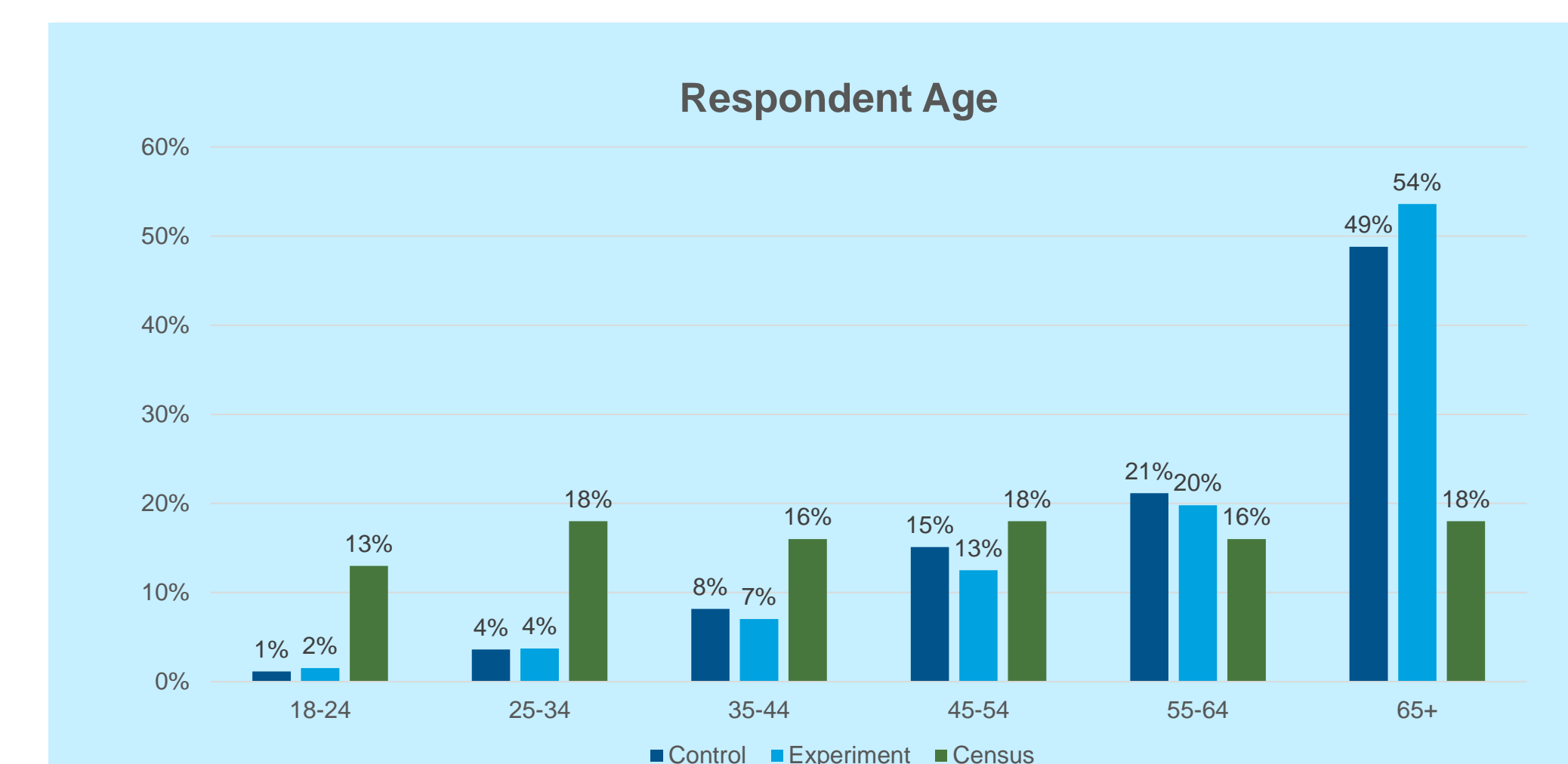
Average Call Attempts
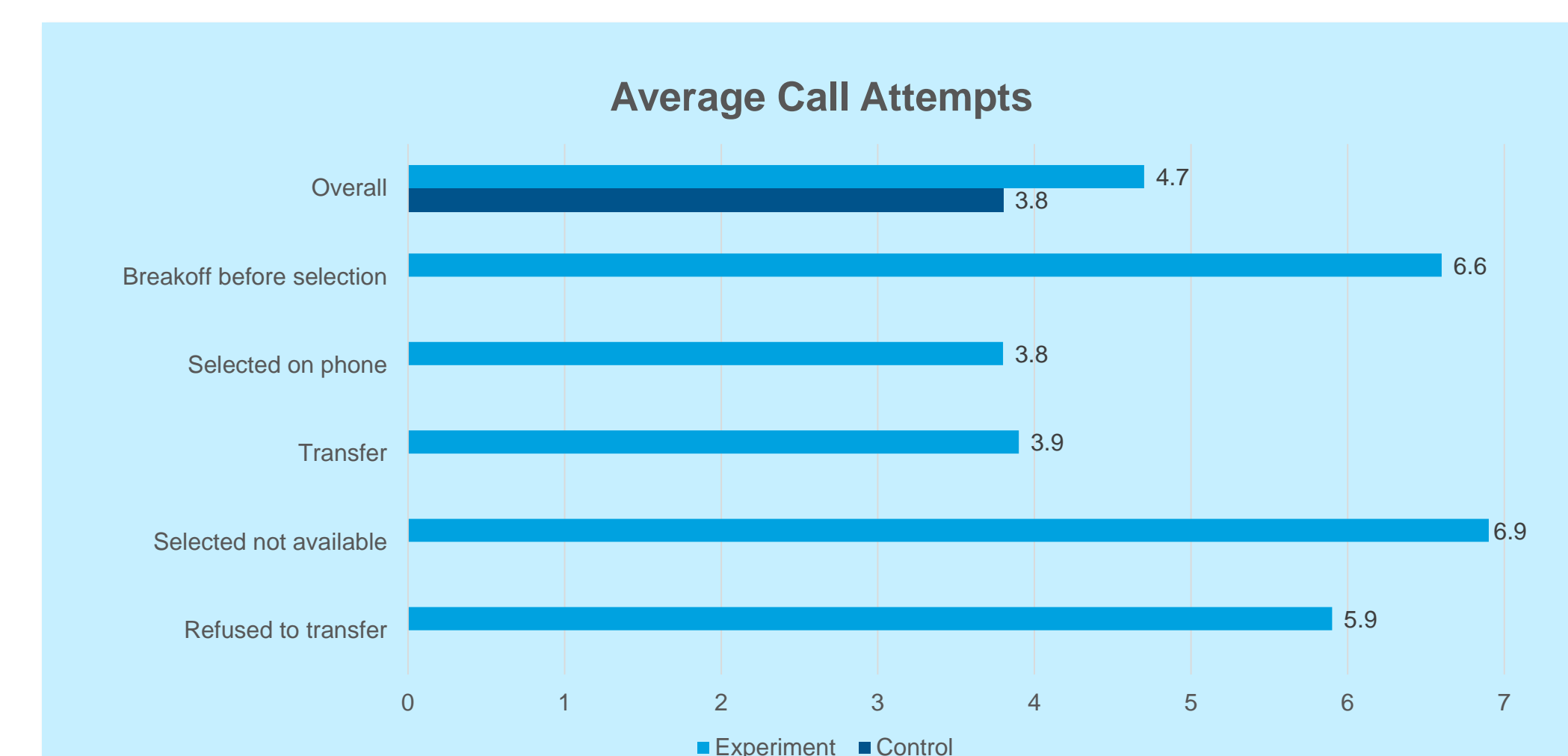
- Average call attempts higher in experimental treatment group

Eligible Respondents

- Experimental treatment group skews to 1-adult households
- Control treatment group skews to 2-adult households; perhaps an artifact of landline-only sample.

Respondent Age

- Experimental treatment group has a higher percentage of adults 65+ compared to control treatment group
- Both treatment groups underrepresent younger adults compared to 2015 ACS population

Average Respondent Age
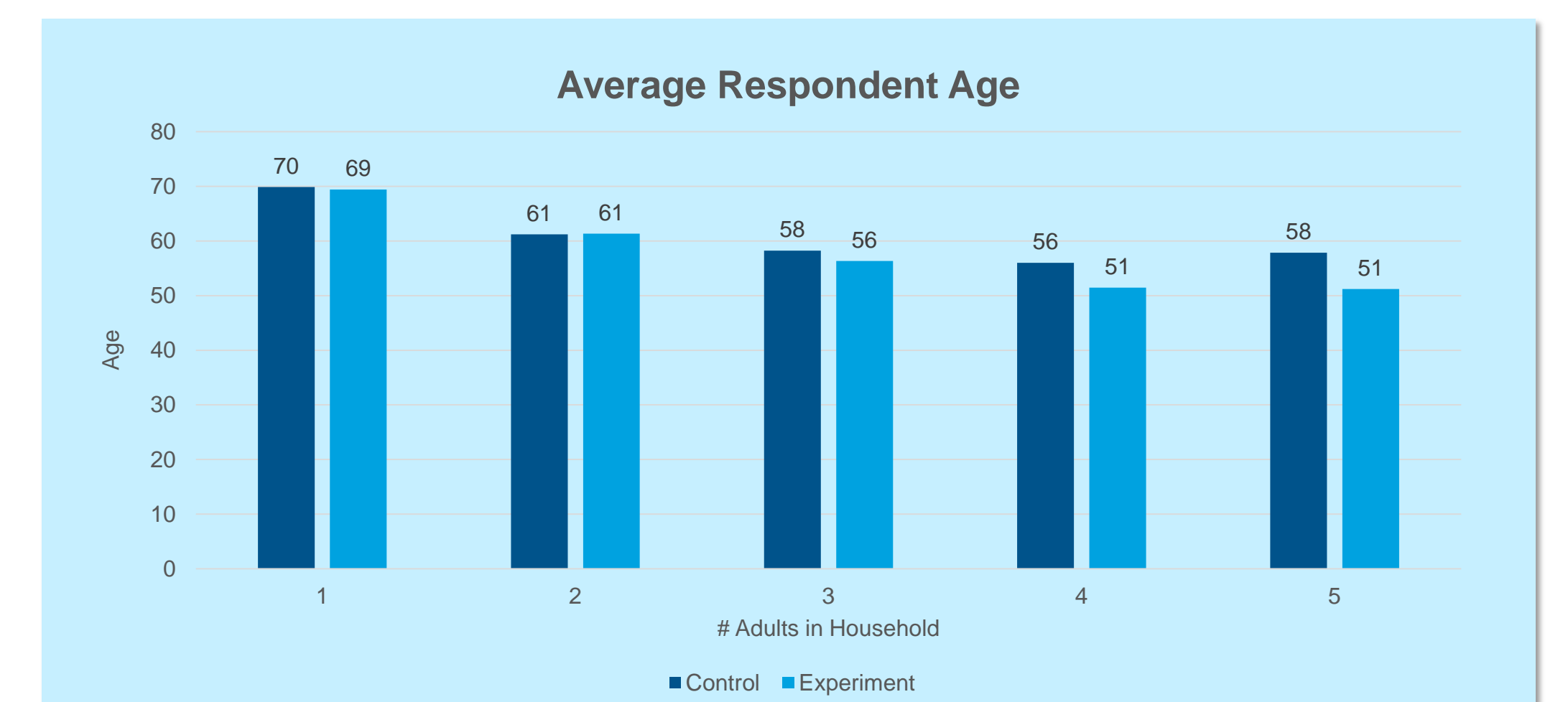
- Average age in 1-person households is older than in 2+ households
- The two treatment groups have similar average ages by household size

Respondent Gender
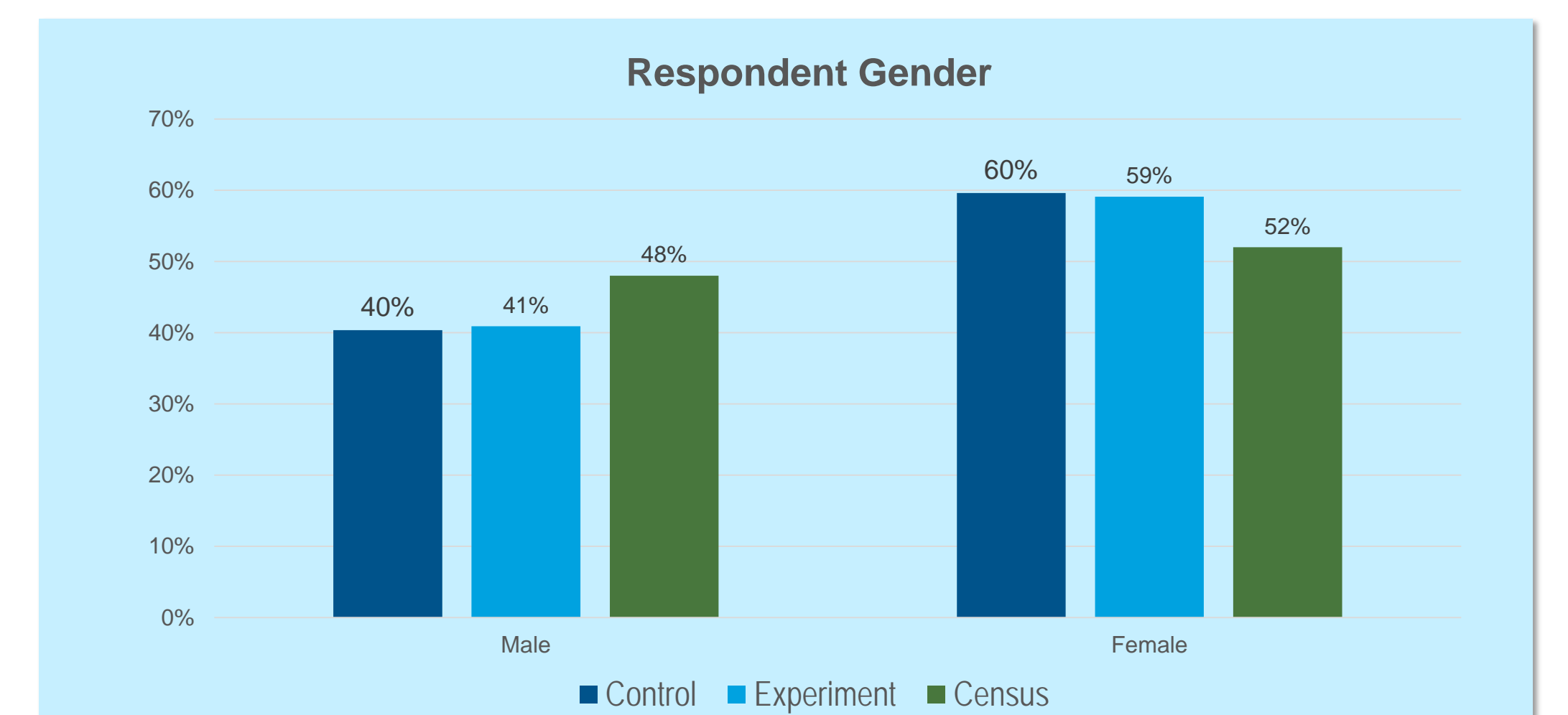
- No difference in gender distribution between experimental and control treatment groups
- Both treatment groups skew to females compared to 2015 ACS population

6 Conclusions

- When we randomly select an adult and that person is not home…
  - …the likelihood of survey completion is low;
  - …unit non-response increases;
  - …operational costs increase; and
  - …the data set is comprised of more one-adult households and older adults.
- When we are unable to complete the interview with the selected respondent, the record is essentially replaced with a new respondent from a different household. This replacement effect is compounded throughout the study, and the household distribution skews heavily toward households (often 1-person households) where we select someone who is currently available.
- The central question is whether it is better to replace a sampled household with a different household, or interview a non-randomly selected adult that is currently at home. Results from this experiment suggest the latter. However, a more extensive call attempt protocol (e.g., 10+) and a longer fielding period (e.g., 4+ weeks) may diminish effects observed in this study.

Future Considerations

- Other sampling procedures[2] may reduce unit non-response while supporting within-household coverage.
  - Treatment 1. Identify all eligible respondents and randomly select one (e.g., youngest adult male currently at home). If youngest adult male is not home, ask to speak to oldest/youngest (randomly assigned) adult female currently at home.
  - Treatment 2. Do not identify all eligible respondents. Instead, select the youngest adult male at home. If that person is not presently at home, then ask for the oldest/youngest adult female currently at home.
- Considering a 78% completion rate for selected adults who are home, these methods would retain operational efficiency and provide within-household coverage.

[1] RBP https://academic.oup.com/poq/article-abstract/68/2/267/1826950/A-Minimally-Intrusive-Method-for-Sampling-Persons
[2] Lavrakas http://mediaratingcouncil.org/MRC%20Point%20of%20View%20-%20Within%20HH%20Respondent%20Selection%20Methods.pdf