

NATIONAL HOUSING SURVEY PILOT

Findings Supporting the Transition of
Fannie Mae's National Housing Survey® from
RDD Phone to Online AmeriSpeak® Panel

January 2023



Executive Summary (1 of 2)

Background: Fannie Mae's National Housing Survey (NHS) is a monthly attitudinal survey that polls the adult general population of the United States via telephone to assess their attitudes toward owning and renting a home, purchase and rental prices, household finances, and overall confidence in the economy. Each month roughly 1,000 respondents are asked approximately 100 questions, making the National Housing Survey one of the most detailed attitudinal surveys of its kind, tracking shifts that occur among homeowners and renters in the United States.

Study Objective: Over the past several years, a few sampling challenges emerged: low response rates for certain hard-to-reach segments (e.g., renters, young people, and racial minorities), longer fielding times, and higher costs per interview. While these challenges are all increasingly common to exclusively telephone/RDD sample surveys, they increasingly created inefficiencies. Following industry trends and best practices, in September 2022, Fannie Mae launched a pilot study of the NHS using [NORC at the University of Chicago's probability-based AmeriSpeak® Panel](#) for the sample source. Most respondents complete the self-administered survey online, with a small percentage of supplemental phone interviews to reach those who are not online. The pilot study fielded through the end of December 2022, generating the four months of comparison data detailed in this report.



Executive Summary (2 of 2)

Pilot Findings:

- The National Housing Survey fielded via the online AmeriSpeak® panel and traditional RDD phone mode **perform similarly** on key outcomes, including the Home Purchase Sentiment Index and its 6 question components.
- The online AmeriSpeak® panel survey **fields quickly** and reaches **slightly higher percentage of hard-to-reach audiences** (e.g., renters, young people, and racial minorities) than the RDD phone survey.
- Differences in the monthly aggregate HPSI are **small and not statistically different**– indicating that the results and inferences drawn from the online survey are the same as the phone survey.
- There were **no significant differences** in the HPSI for key demographic groups (homeownership status, race, age, education, & income) in September, October, and November, with one exception among Black/African Americans in December.⁽¹⁾ This means that the HPSI scores for key NHS demographic groups are **statistically the same regardless of survey mode**.
- Aggregate **net scores for the 6 questions that comprise the HPSI are all directionally the same** with only one incidence of a significant difference between scores. In this case, multi-month trends suggest the difference was likely due to an anomaly in the phone survey, rather than the online (see slide 20).
- Based on the favorable results of this 4-month pilot study, Fannie Mae decided to transition the National Housing Survey sample to NORC’s AmeriSpeak panel, with continued overall fielding by PSB Insights, beginning in January 2023.

Notes: In December, there was a significant difference between the HPSI scores for Black/African Americans due to educational differences in the sample – with the online survey sample more accurately representing the national incidence (see slide 20).



Pilot Methodology

As many factors as possible remained consistent across the NHS RDD Phone and AmeriSpeak® Surveys. As planned, the key difference between the surveys was the mode – most AmeriSpeak® participants complete the self-administered survey online and only a small percentage opted to complete via telephone with a live interview administrator.

Survey Factors	RDD Phone Survey	AmeriSpeak® Online Survey
TARGET POPULATION	General population of U.S. adults (age 18+) who make or share in the financial decisions made in their household	General population of U.S. adults (age 18+) who make or share in the financial decisions made in their household
MODES	Cell Phone (~53%), Landline or Cell (~41%), and Landline (~6%)	Online (~95%) with Phone (~5%)
LANGUAGES	English (~92%) & Spanish (~8%)	English (~97%) & Spanish (~3%)
SAMPLE SPECIFICATIONS	Target of 1,000 completed interviews per month	Target of 1,000 completed interviews per month with a 3-month exclusion rule to ensure no panel participant takes the survey more than 4 times in a 12-month period.
SURVEY LENGTH (Same questionnaire was fielded, differences in timing are due to mode, not questionnaire).	~15 minutes	~10 minutes online, ~15 minutes phone
INCENTIVE	No incentive provided for completion	Panelists are offered the cash equivalent of \$3 for completing the survey
DATA COLLECTION	Approximately 21 calendar days with best efforts to evenly distribute sample across each week of the fielding period	Approximately 21 calendar days with best efforts to evenly distribute sample across each week of the fielding period



Questionnaire Comparison (1 of 2)

The NHS questionnaire remained largely the same between the two surveys. Changes were limited to small wording updates to ensure questions written for the phone made sense in a self-administered online environment. Only one difference in results between the two modes was attributed to differences in the questionnaire and it was Q23ba below, not a core HPSI question.

Examples of how RDD questions were updated for the online survey:

RDD Phone Survey	AmeriSpeak® Online Survey
Q12b. [PHONE] Please tell me the primary reason why you think this is a good time to buy a house.	Q12b. [ONLINE] What is the primary reason why you think this is a good time to buy a house?
Q13. [PHONE] In general, do you think this is a very good time to sell a house, a somewhat good time, a somewhat bad time, or a very bad time to sell a house?	Q13. [ONLINE] In general, do you think it is a good time or bad time to sell a house?
Q23ba. [PHONE] What would be your biggest obstacle to getting a mortgage to purchase or refinance a home today?	Q23ba. [ONLINE] What would be your biggest obstacle to getting a mortgage to purchase or refinance a home today? [Select up to 3]



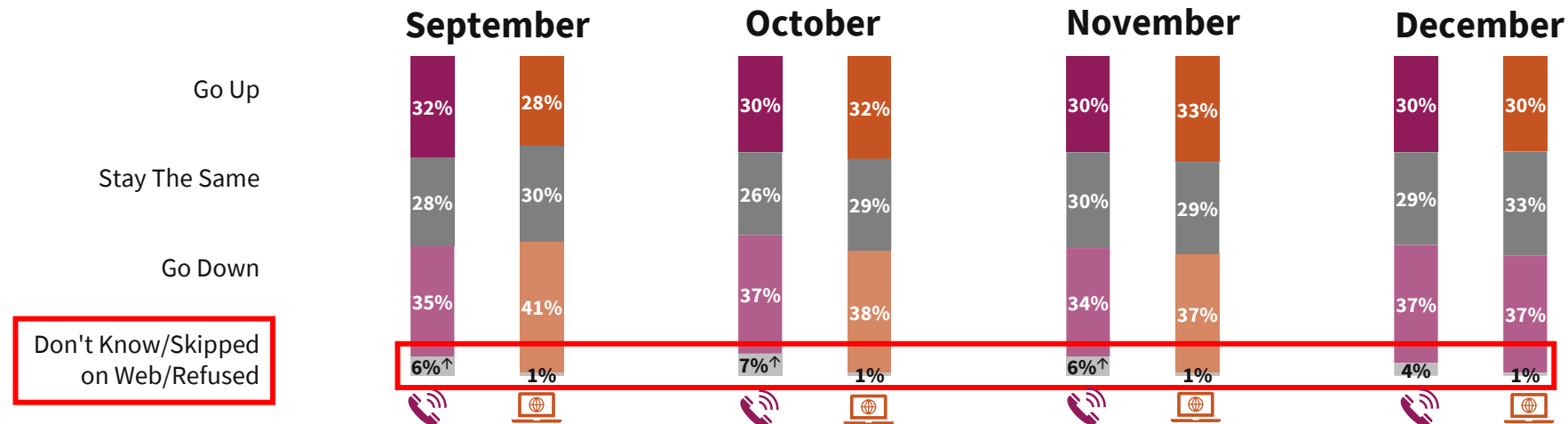
Questionnaire Comparison (2 of 2)

There were significant differences in the percentage of respondents who selected “don’t know” between the phone and online surveys. Although in most cases these differences did not cause significant differences between substantive response options between the two modes, it is worth noting as a difference between the two modes.

How does the act of choosing “don’t know” differ between the phone and online surveys? In the NHS phone survey, “don’t know” is permitted as a response option for many questions but it is not read as a response option by the interviewer. To mimic this as closely as possible in the online survey, participants were coded as “don’t know” when they advanced to the next question without selecting an option. For a variety of reasons – including the cognitive ease of choosing from a written list of response options on a screen to the engagement level of participants in the AmeriSpeak® panel - online participants were less likely to opt for the implicit “don’t know” option than phone participants.

An example of significant differences in the percentage of “don’t know” responses with no effect on substantive findings:

During the next 12 months, do you think home prices in general will go up, go down, or stay the same as where they are now?



Sampling Approach & Participant Experience

The NHS RDD Phone and AmeriSpeak® Surveys aimed to recruit nationally representative samples of U.S. adults aged 18+ who play a role in the financial decision-making in their household.

RDD Phone Survey

- To ensure a representative sample of the United States population was polled for the monthly NHS, PSB Insights and ReconMR used Random Digit Dialing (RDD). For the sample to accurately represent the U.S. population, 70% of calls are made to cell phones.
- For more specific sub-audiences, RDD's targeting capabilities are limited. In turn, a sample list was generally used for low incidence audiences. This targeted landline dialing was conducted to ensure demographic quotas were reached and the month's survey population was representative of the entire U.S. population.
- The survey was administered by a live (not automated) interviewer in English or Spanish.

AmeriSpeak® Online Survey

- The NHS was administered in two modes depending on the preference the respondent provides during the AmeriSpeak® panel recruitment:
 - 1) self-administered by the respondent online via the Web (~95%)
 - 2) administered over the telephone by a live interviewer (~5%)
- Participants were invited into the survey in three batches to ensure the sample was evenly distributed across the three-week fielding period along with two additional targeted sample batches to increase participation rates among harder-to-reach populations (young adults ages 18-34, Asian American/Pacific Islanders, and low-income individuals).
- If invited, AmeriSpeak® panelists could take the survey online a variety of ways (e.g., web portal, app, weblink), and to encourage participation participants were sent several reminder emails following the initial invitation.
- To administer the phone survey, NORC dialed sampled panelists who prefer to take surveys on the phone and a human interviewer administered the survey in English or Spanish.
- A three-month exclusion rule ensured that the same person did not participate in the panel study more than once.



Weighting Comparison

The NHS RDD Phone and AmeriSpeak® Surveys employed the same post-stratification weights. The AmeriSpeak® survey used additional weighting to account for panel selection bias and nonresponse.

RDD Phone Survey

The NHS is weighted using only the post-stratification weights detailed below.

AmeriSpeak® Online Survey

The final NHS weighting variable is a product of three weights:









- AmeriSpeak® Panel Weights: Developed for all panel members to account for their probability of selection into the sample of panel recruits, panel recruitment nonresponse adjustments, and poststratification adjustments of the recruited panel to match population benchmarks.
- Study Specific Base Weights: Base weights are a product of the AmeriSpeak® Panel Weights and the inverse of selection probabilities associated with sample selection from the panel.
- Study Specific Final Weights: Adjustments of the base weights to address survey nonresponse through a weighting class method – post-stratification weighting.

Post-stratification weights based on 2019 1-Year ACS Population Estimates:

- Gender (Male, Female)
- Age (18-20, 21-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75+)
- Race/Ethnicity (White, African American, Hispanic, Asian, American Indian, Other)
- Household Income (<\$10,000, \$10,000-\$14,999, \$15,000-\$24,999, \$25,000-\$34,999, \$35,000-\$49,999, \$50,000-\$74,999, \$75,000-\$99,999, \$100,000-\$149,999, \$150,000-\$199,999, \$200,000+)
- Education (<High School, High School Degree, Some College/Associates Degree, College Graduate/Post Graduate Degree)
- Housing Status (Mortgage Borrowers, Outright Owners, Renters, Boarders who do not pay rent or own their home)
- Phone Type (Landline only, Cell phone only, Both landline and cell phone)



Fielding & Sample Details

	September 2022		October 2022		November 2022		December 2022	
Mode								
Sample Size	1,002 cases	1,186 cases	1,003 cases	1,240 cases	1,000 cases	1,065 cases	1,001 cases	1,081 cases
Fielding Dates	9/1- 9/22	9/1- 9/22	10/1- 10/22	10/1- 10/22	11/1- 11/19	11/1- 11/19	12/1- 12/20	12/1- 12/19
English Sample	89%	95%	92%	97%	92%	94%	91%	97%
Spanish Sample	11%	5%	8%	3%	8%	6%	9%	3%

Strategy

- Same questions
- Same quota targets
- Same weighting approach

 RDD Phone Survey

 AmeriSpeak® Online Survey





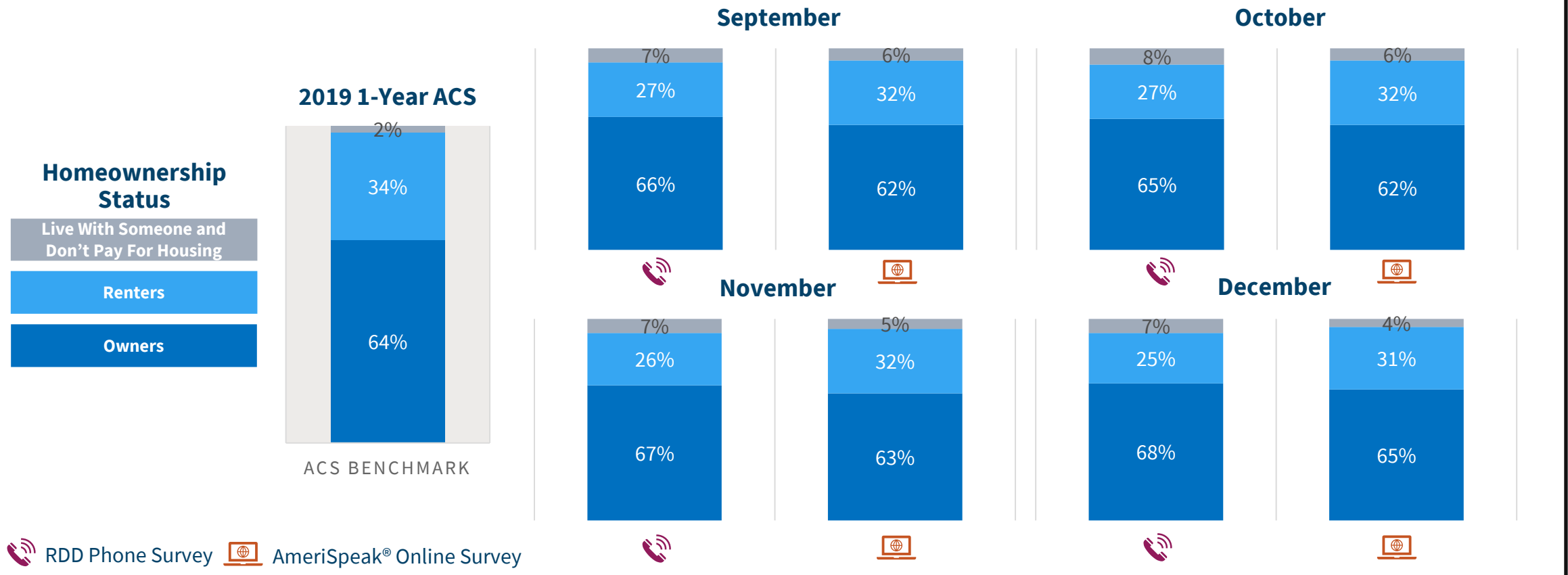
RESULTS



Unweighted Demographic Characteristics (1 of 5)

The **online AmeriSpeak panel survey** sample has a better representation of hard-to-reach audiences, including renters (as compared to the **RDD phone survey**).

Unweighted Demographic (Owner Status, % of GP)



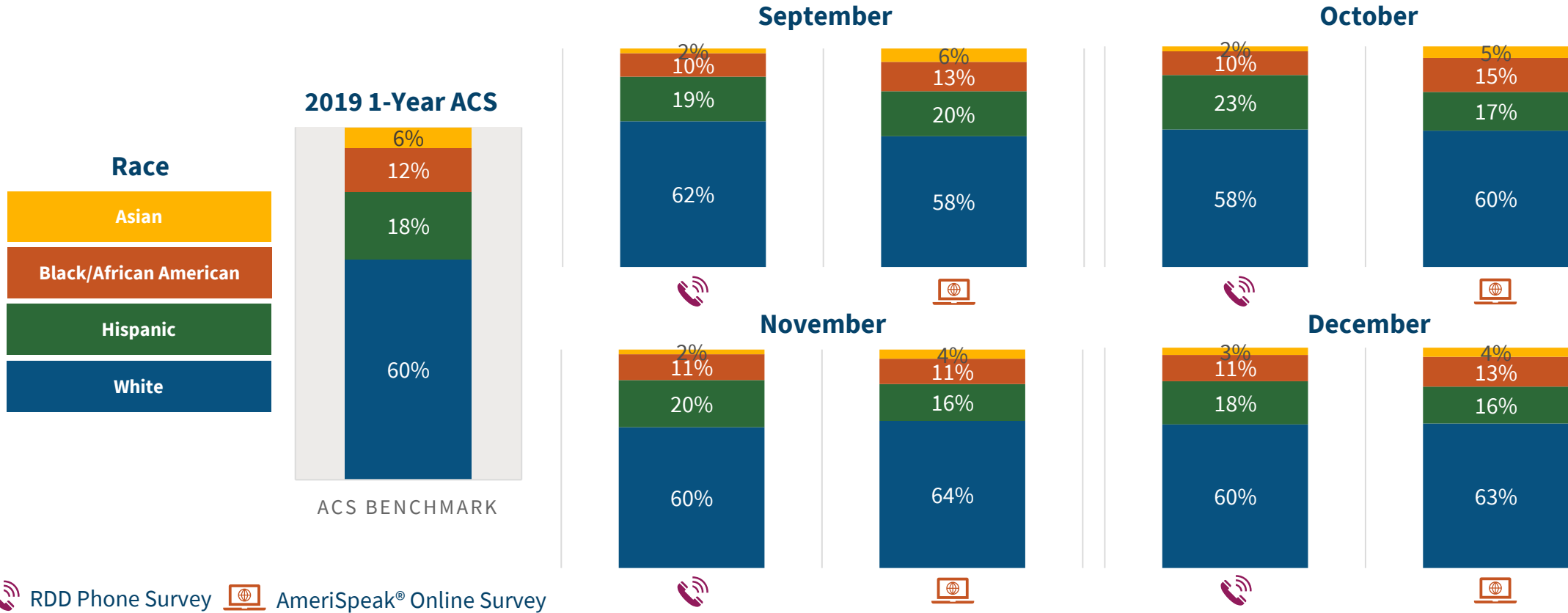
Notes: (1) Unweighted demographics were not tested for statistical differences.

- (2) September Sample Sizes: RDD Phone Sample Size = 1,002 | AmeriSpeak Online Sample Size = 1,186
- (3) October Sample Sizes: RDD Phone Sample Size = 1,003 | AmeriSpeak Online Sample Size = 1,240
- (4) November Sample Sizes: RDD Phone Sample Size = 1,000 | AmeriSpeak Online Sample Size = 1,065
- (5) December Sample Sizes: RDD Phone Sample Size = 1,001 | AmeriSpeak Online Sample Size = 1,081
- (6) September AmeriSpeak Sample Composition: 6% CATI (Phone), 94% CAWI (Online)
- (7) October AmeriSpeak Sample Composition: 5% CATI (Phone), 95% CAWI (Online)
- (8) November AmeriSpeak Sample Composition: 5% CATI (Phone), 95% CAWI (Online)
- (9) December AmeriSpeak Sample Composition: 6% CATI (Phone), 94% CAWI (Online)

Unweighted Demographic Characteristics (2 of 5)

The **online AmeriSpeak panel survey** sample has a better representation of hard-to-reach audiences, including Asians (as compared to the **RDD phone survey**).

Unweighted Demographic (Race, % of GP)



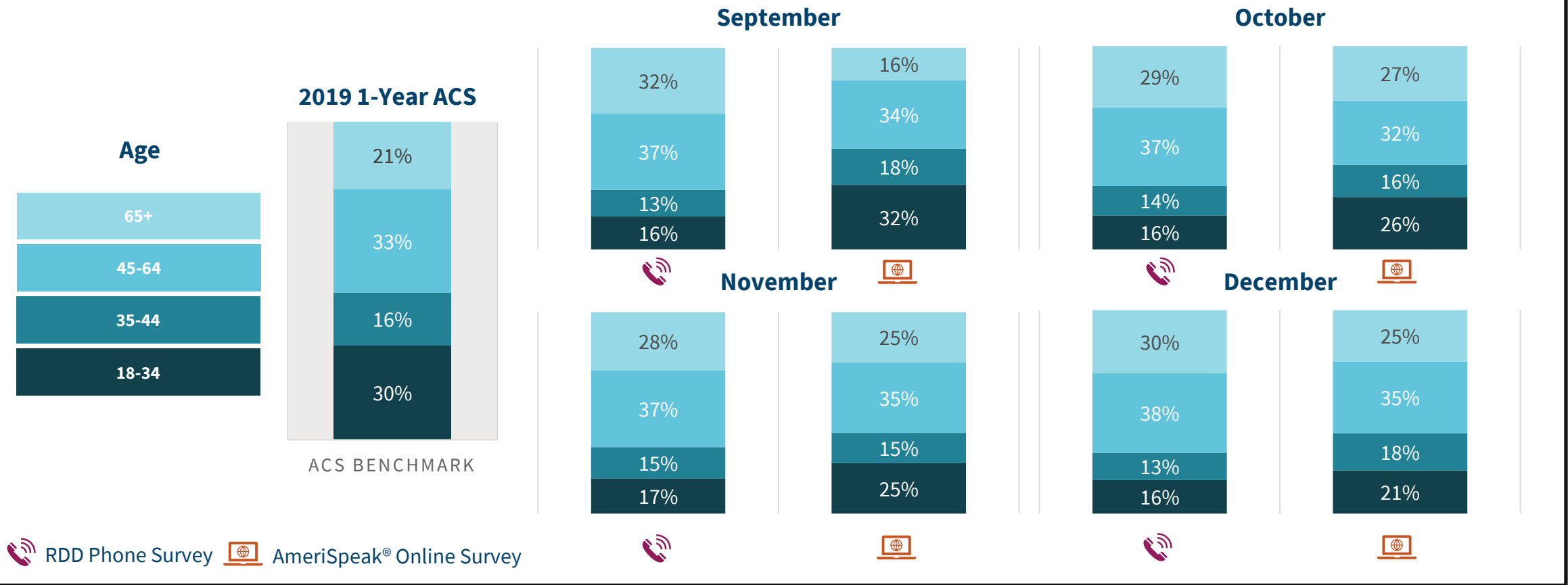
Notes: (1) Unweighted demographics were not tested for statistical differences.

- 12 (2) September Sample Sizes: RDD Phone Sample Size = 1,002 | AmeriSpeak Online Sample Size = 1,186 (6) September AmeriSpeak Sample Composition: 6% CATI (Phone), 94% CAWI (Online)
- (3) October Sample Sizes: RDD Phone Sample Size = 1,003 | AmeriSpeak Online Sample Size = 1,240 (7) October AmeriSpeak Sample Composition: 5% CATI (Phone), 95% CAWI (Online)
- (4) November Sample Sizes: RDD Phone Sample Size = 1,000 | AmeriSpeak Online Sample Size = 1,065 (8) November AmeriSpeak Sample Composition: 5% CATI (Phone), 95% CAWI (Online)
- (5) December Sample Sizes: RDD Phone Sample Size = 1,001 | AmeriSpeak Online Sample Size = 1,081 (9) December AmeriSpeak Sample Composition: 6% CATI (Phone), 94% CAWI (Online)

Unweighted Demographic Characteristics (3 of 5)

The **online AmeriSpeak panel survey** sample also does a better job of reaching young people than the **RDD phone survey**.

Unweighted Demographic (Age, % of GP)



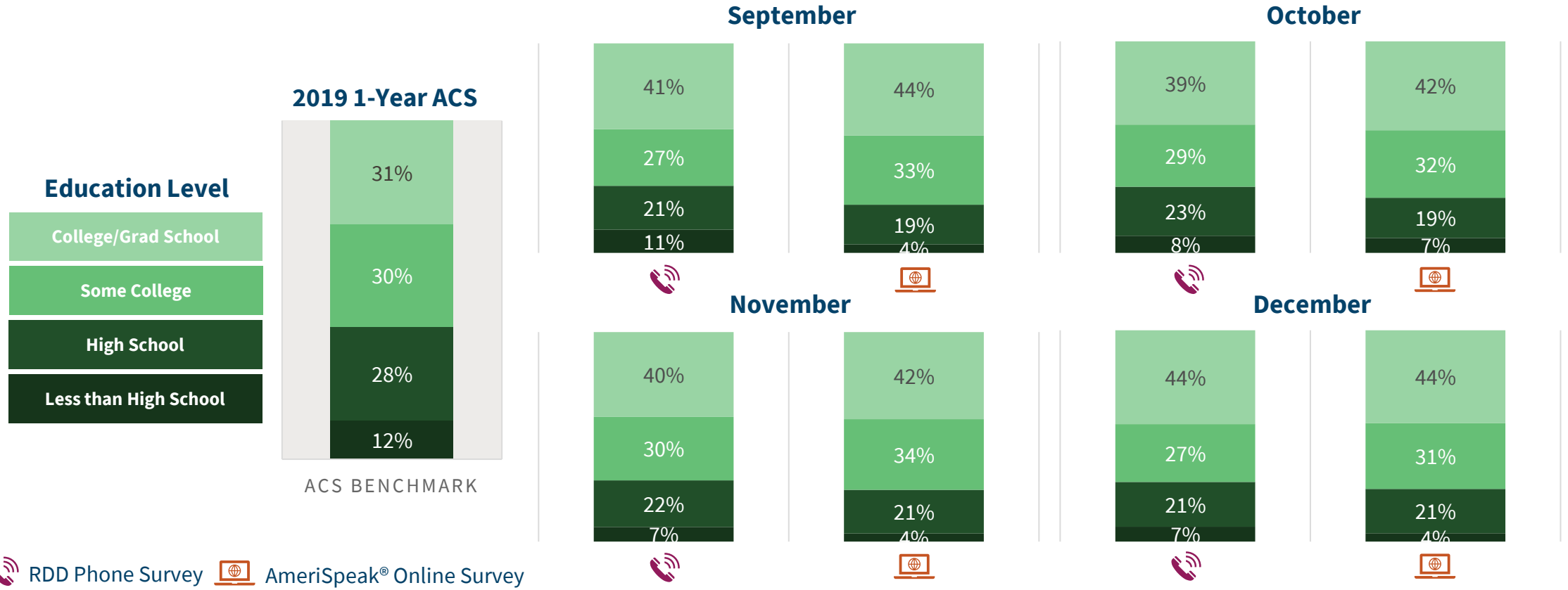
Notes: (1) Unweighted demographics were not tested for statistical differences.

- (2) September Sample Sizes: RDD Phone Sample Size = 1,002 | AmeriSpeak Online Sample Size = 1,186
- (3) October Sample Sizes: RDD Phone Sample Size = 1,003 | AmeriSpeak Online Sample Size = 1,240
- (4) November Sample Sizes: RDD Phone Sample Size = 1,000 | AmeriSpeak Online Sample Size = 1,065
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- (9) December AmeriSpeak Sample Composition: 6% CATI (Phone), 94% CAWI (Online)

Unweighted Demographic Characteristics (4 of 5)

Both survey modes struggle to reach respondents low levels of education at levels consistent with the national incidence.

Unweighted Demographic (Education Level, % of GP)



Notes: (1) Unweighted demographics were not tested for statistical differences.

(2) September Sample Sizes: RDD Phone Sample Size = 1,002 | AmeriSpeak Online Sample Size = 1,186

14 (3) October Sample Sizes: RDD Phone Sample Size = 1,003 | AmeriSpeak Online Sample Size = 1,240

(4) November Sample Sizes: RDD Phone Sample Size = 1,000 | AmeriSpeak Online Sample Size = 1,065

(5) December Sample Sizes: RDD Phone Sample Size = 1,001 | AmeriSpeak Online Sample Size = 1,081

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(7) October AmeriSpeak Sample Composition: 5% CATI (Phone), 95% CAWI (Online)

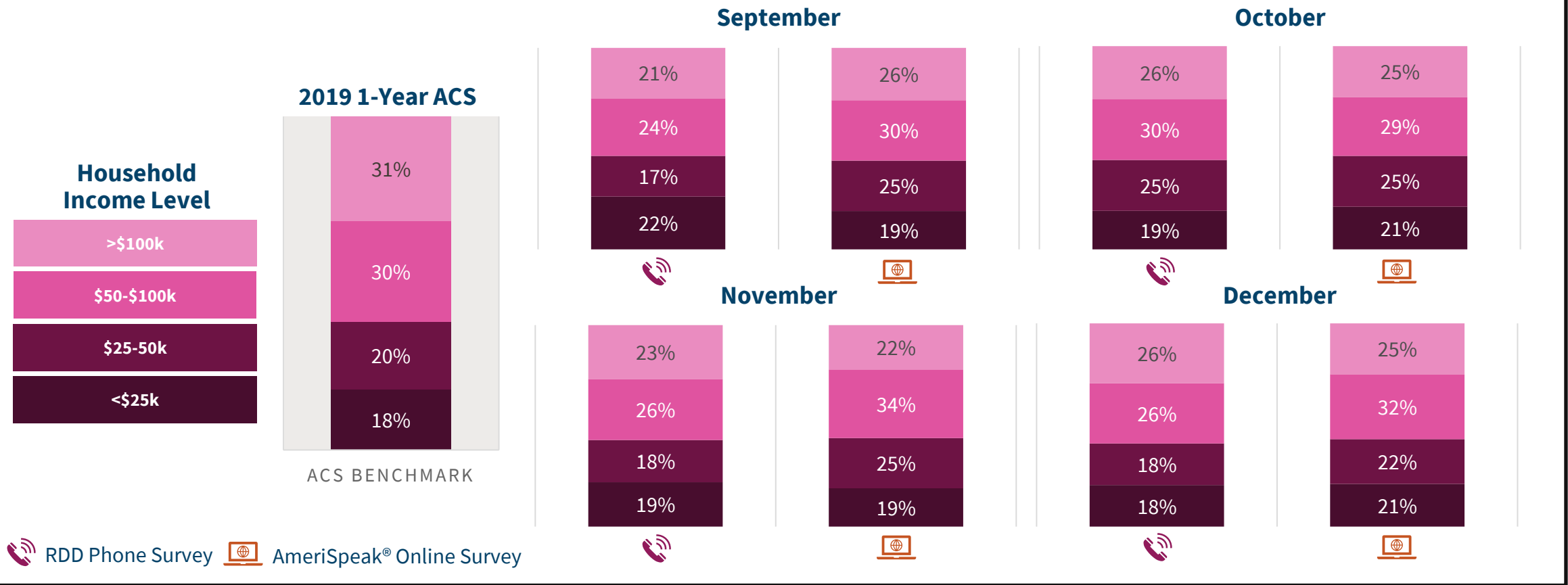
(8) November AmeriSpeak Sample Composition: 5% CATI (Phone), 95% CAWI (Online)

(9) December AmeriSpeak Sample Composition: 6% CATI (Phone), 94% CAWI (Online)

Unweighted Demographic Characteristics (5 of 5)

Both survey modes struggle to reach respondents living in households with an annual income greater than \$100k but reach representative samples of lower income groups.

Unweighted Demographic (Household Income Level, % of GP)

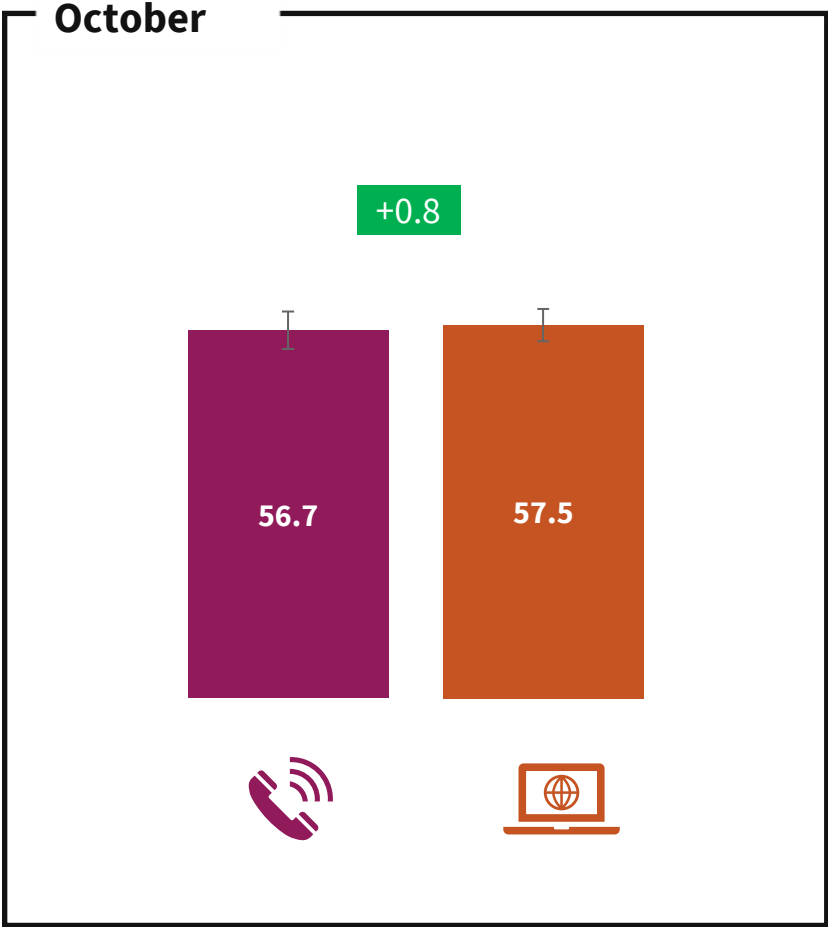
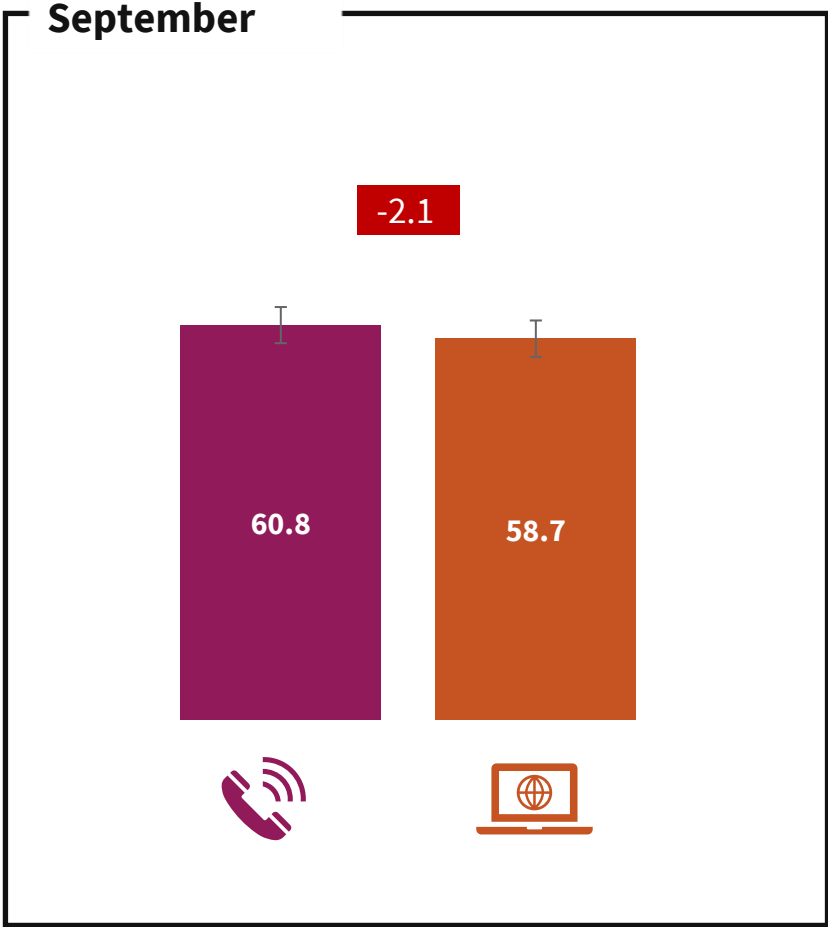


Notes: (1) Unweighted demographics were not tested for statistical differences.

- (2) September Sample Sizes: RDD Phone Sample Size = 1,002 | AmeriSpeak Online Sample Size = 1,186
- (3) October Sample Sizes: RDD Phone Sample Size = 1,003 | AmeriSpeak Online Sample Size = 1,240
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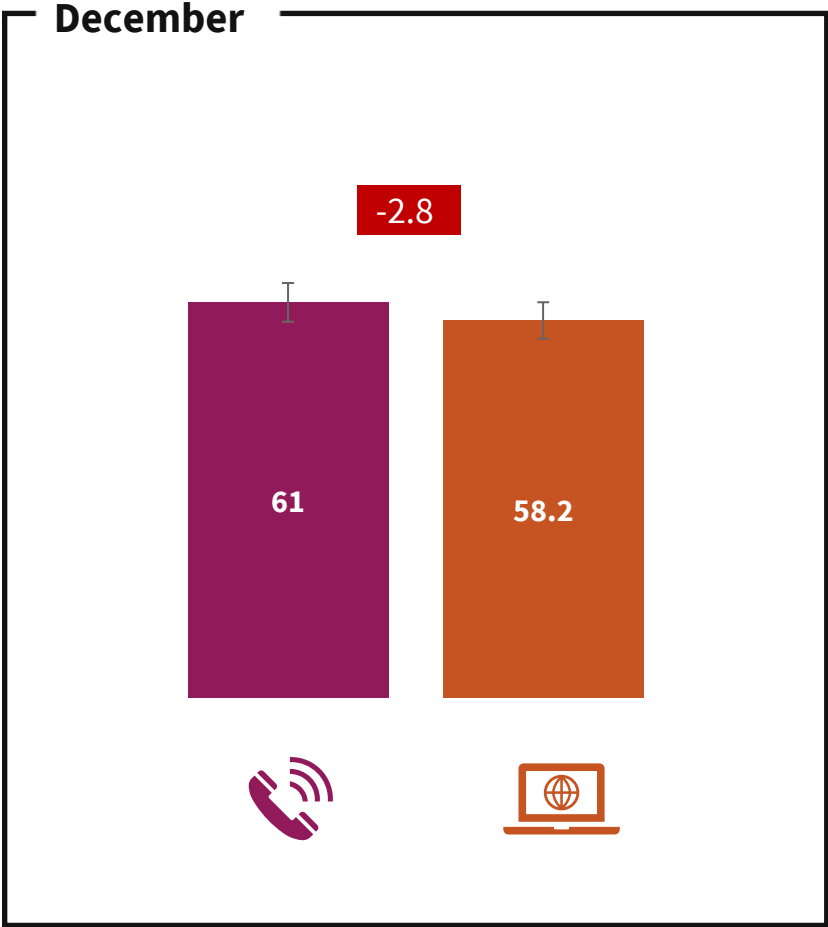
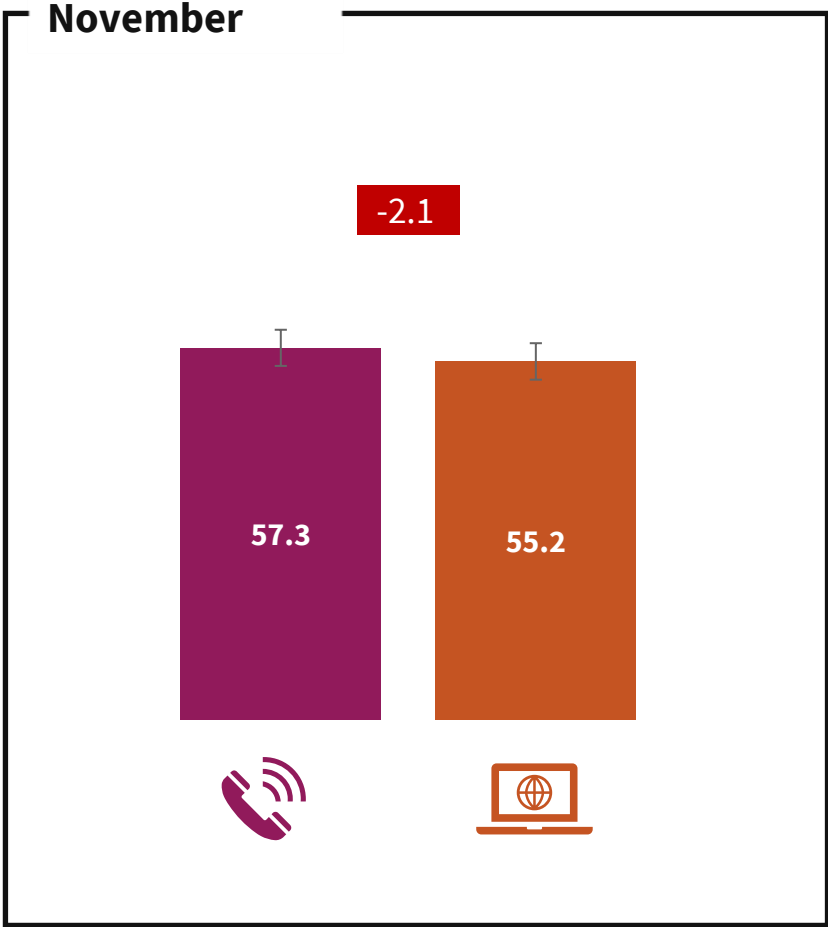
Home Purchase Sentiment Index (1 of 2)

The -2.1-point (Sept.) and 0.8-point (Oct.) differences between the RDD phone survey HPSI and online Amerispeak panel survey HPSI are not statistically significant, meaning there is no real difference in the HPSI score across modes in either month.



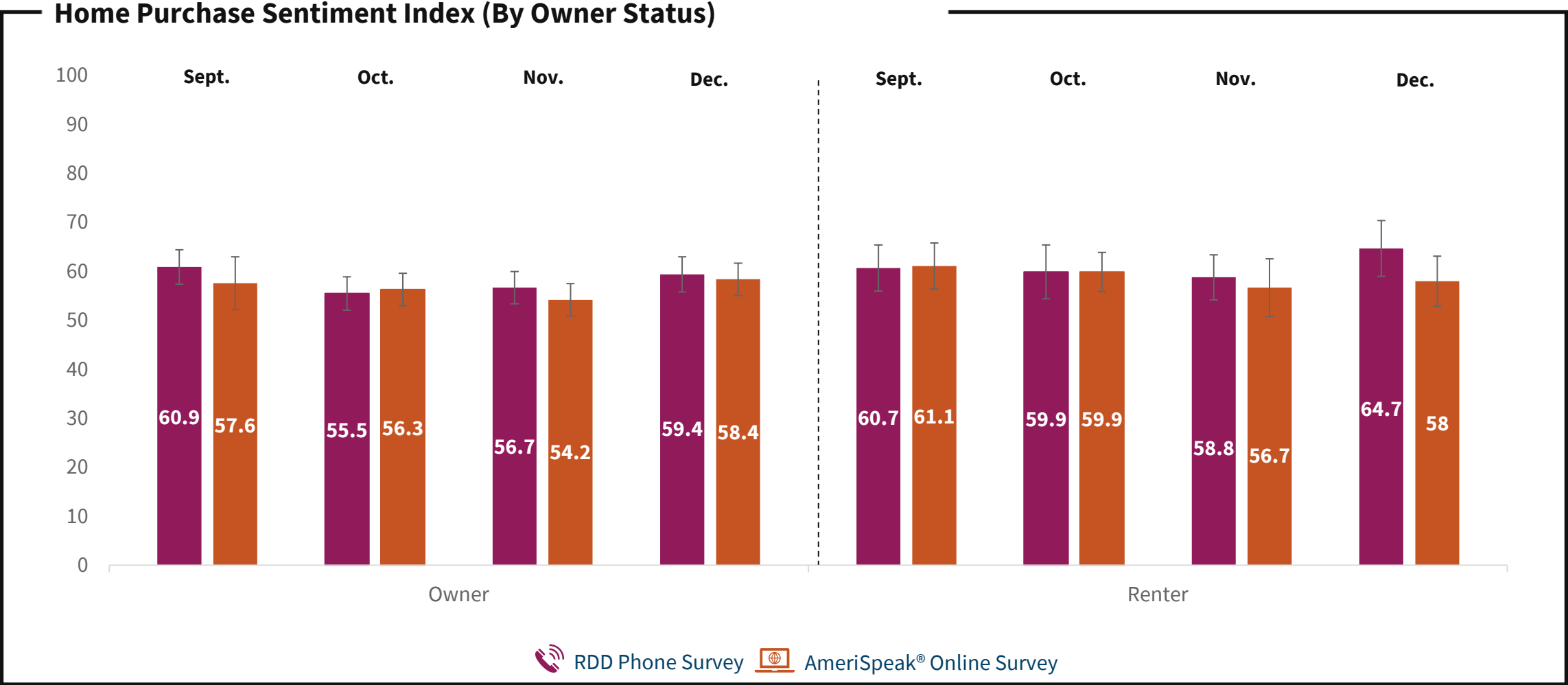
Home Purchase Sentiment Index (2 of 2)

The -2.1-point (Nov.) and -2.8-point (Dec.) differences between the RDD phone survey HPSI and online Amerispeak panel survey HPSI are not statistically significant, meaning there is no real difference in the HPSI score across modes in either month.



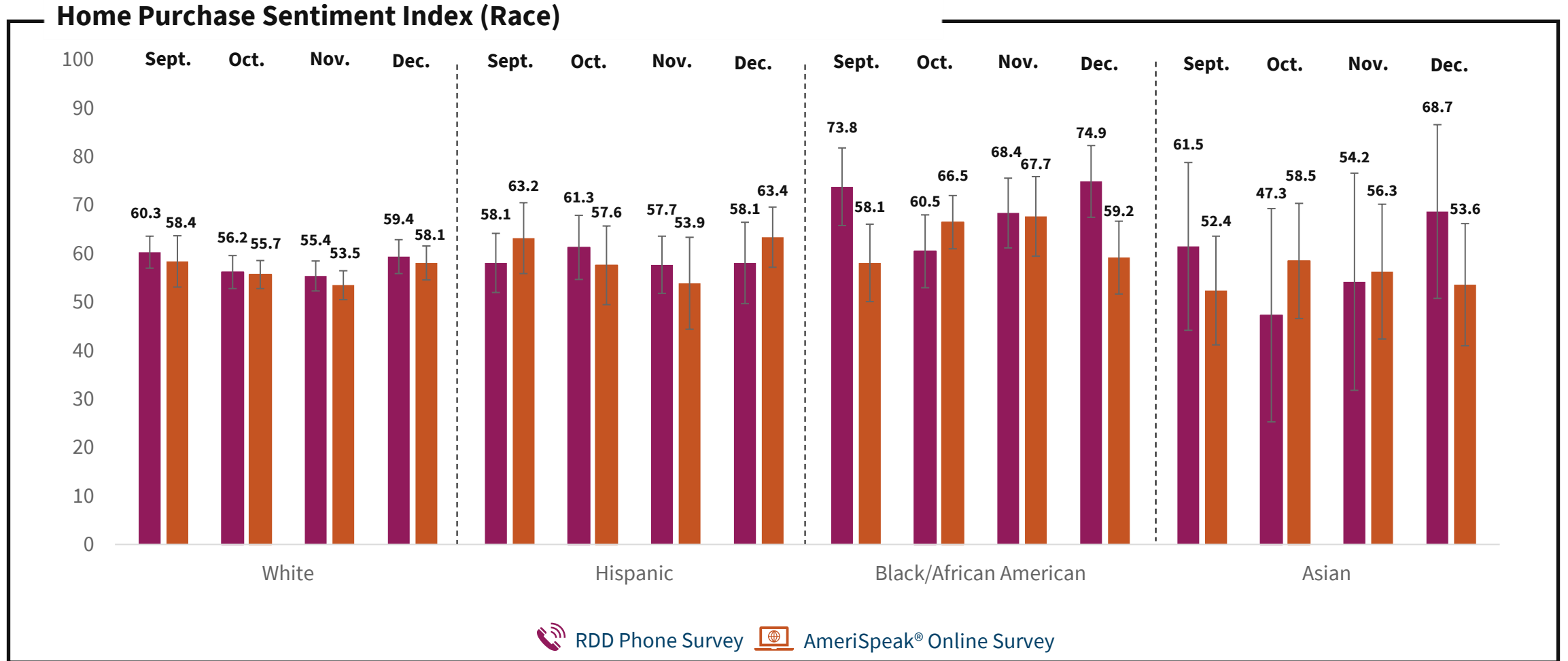
Home Purchase Sentiment Index (1 of 5)

There were no significant differences in the HPSI among owners and renters in September, October, November, or December. This means that the HPSI scores for owners and renters are statistically the same regardless of survey mode.



Home Purchase Sentiment Index (2 of 5)

There were no significant differences in the HPSI for racial demographic groups in September, October, or November. In December, there was a significant difference between the HPSI scores for Black/African Americans due to educational differences in the sample – with the online survey sample more closely matching the national incidence.

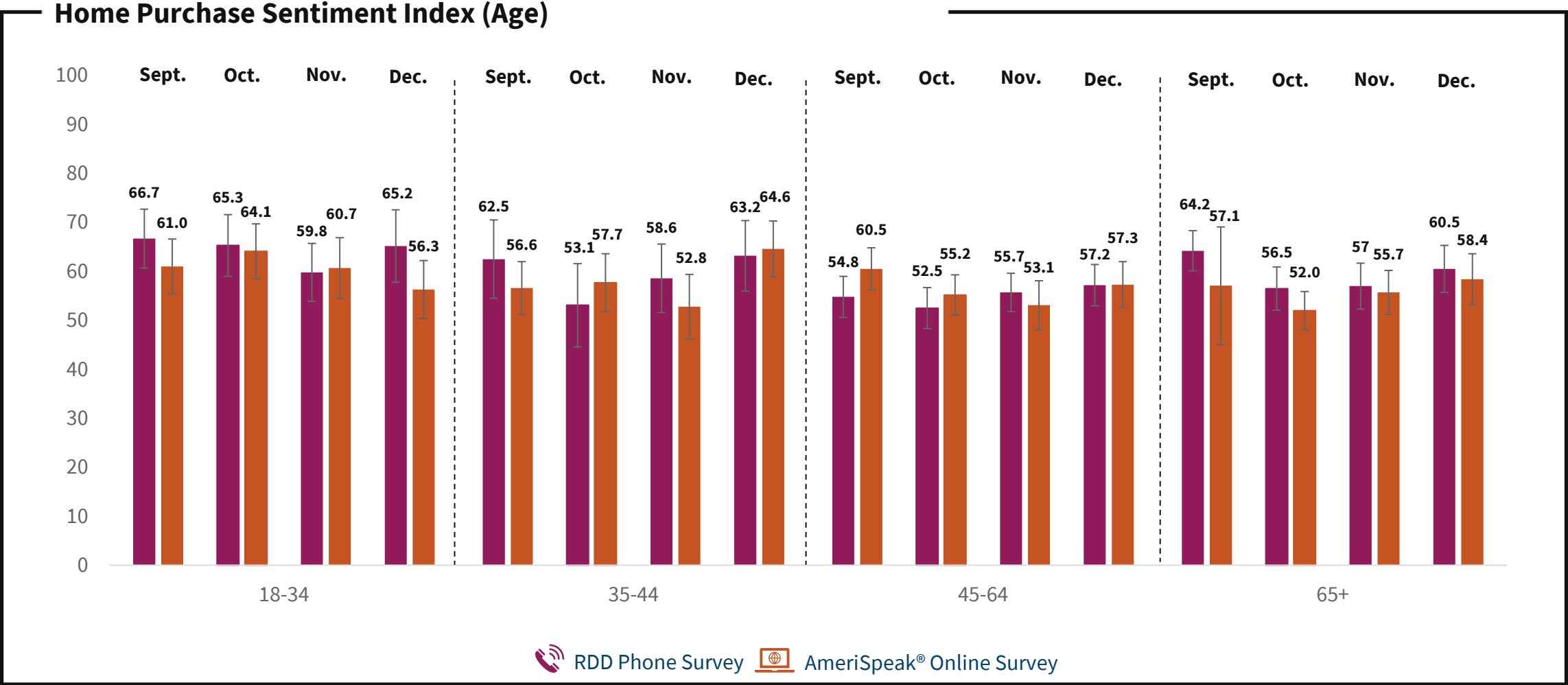


Notes: (1) Small n-sizes in Dec. data (Asian Online: n=61, Asian RDD: n=60)

(2) Although gaps between Black/African American and Asian samples appear large, they are not statistically different (due to small sample sizes and larger margins of error).

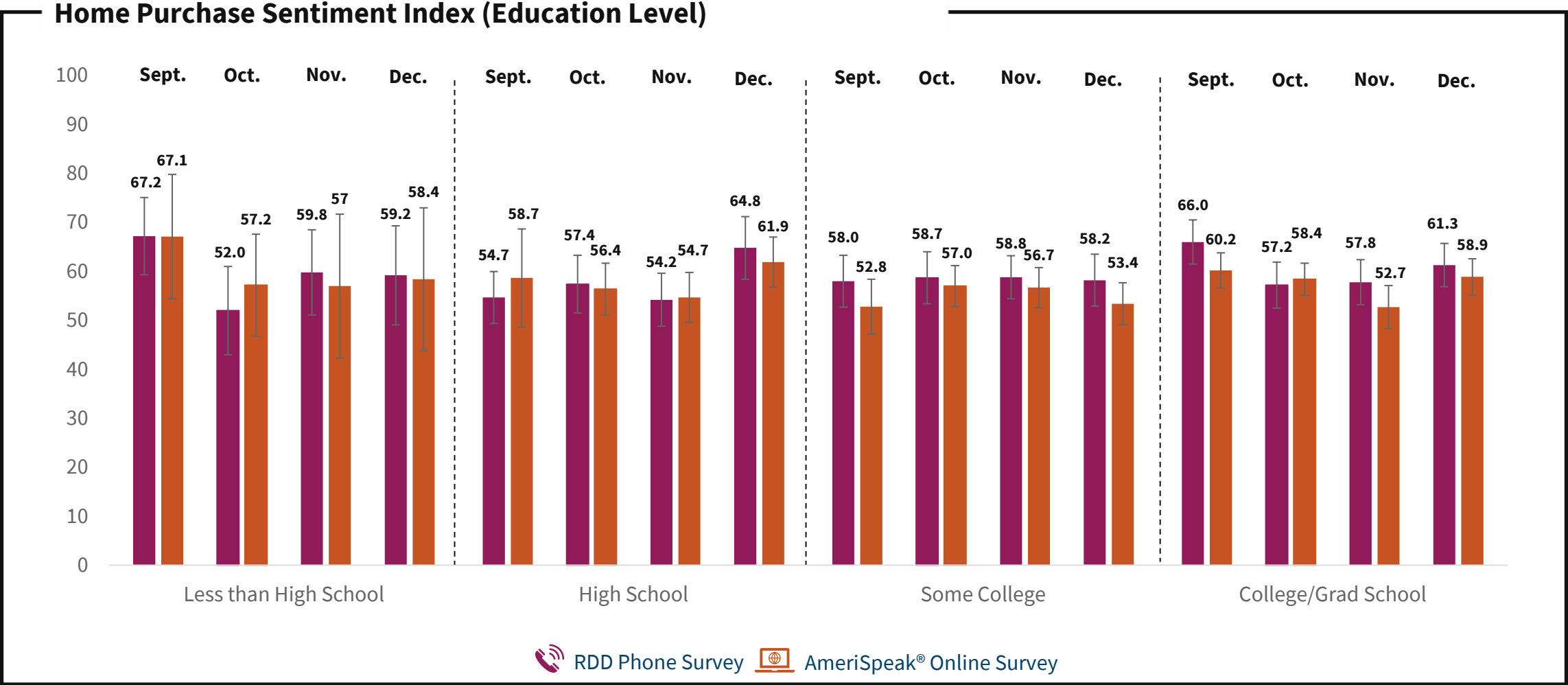
Home Purchase Sentiment Index (3 of 5)

There were no significant differences in the HPSI for any age groups in September, October, November, or December. This means that the HPSI scores for age groups are statistically the same regardless of survey mode.



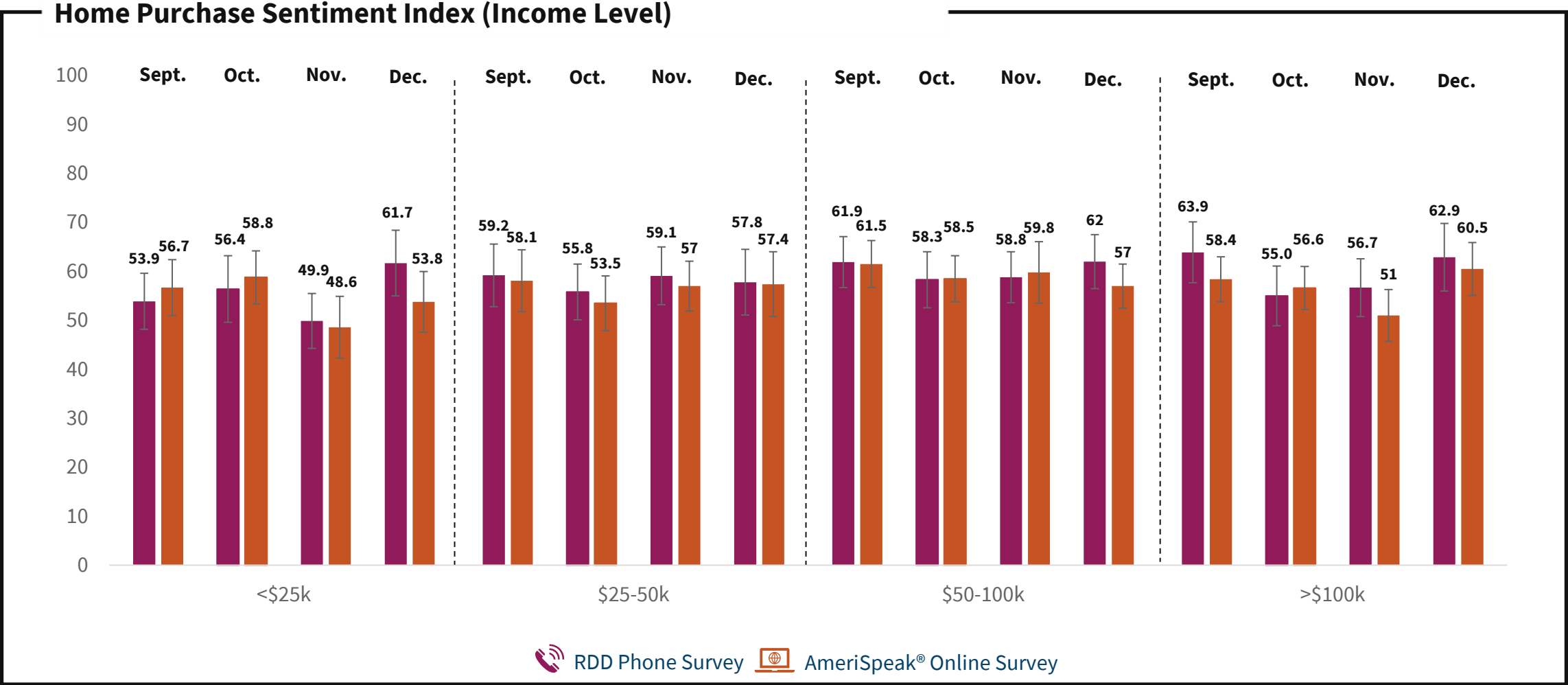
Home Purchase Sentiment Index (4 of 5)

There were no significant differences in the HPSI for any education groups in September, October, November, or December. This means that the HPSI scores for education groups are statistically the same regardless of survey mode.



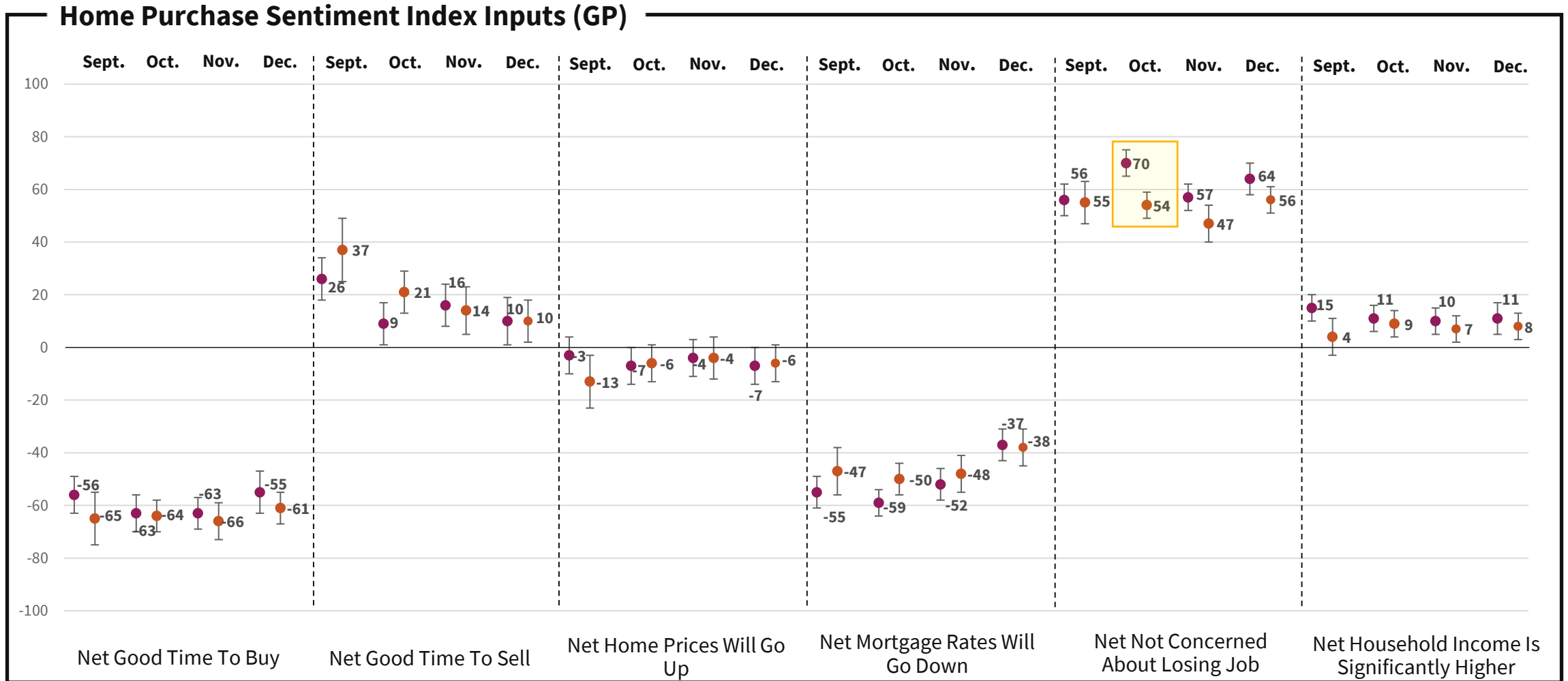
Home Purchase Sentiment Index (5 of 5)

There were no significant differences in the HPSI for any income groups in September, October, November, or December. This means that the HPSI scores for income groups are statistically the same regardless of survey mode.



Home Purchase Sentiment Index Inputs

In September, November, and December, there were no significance differences between surveys on the HPSI score components. In October the net score for “not concerned about losing job” was the one exception, with a significantly higher score among phone respondents than online (70% vs. 54%).





Appendix

National Housing Survey

Background

- The Fannie Mae National Housing Survey is a monthly attitudinal survey, which polls ~1,000 adults from the general population of the United States to assess their attitudes toward owning and renting a home, home purchase and rental prices, homeownership distress, household finances, and overall confidence in the economy.
- Each respondent is asked more than 100 questions, making the Fannie Mae National Housing Survey the most detailed attitudinal survey of its kind. The survey is conducted on a monthly basis to track attitudinal shifts that occur among Homebuyers and renters in the United States.

Monthly and Topic Analyses and Research Briefs

- Monthly reports provide a timely view of trends in consumers' attitudes using twelve key indicators.
<http://www.fanniemae.com/portal/research-insights/surveys/national-housing-survey.html>
- Topic analyses provide deeper insights into one or more issues based on the compilation of three-monthly samples. The three-monthly studies that make up any given topic analysis are identical in wording and placement of questions. Additionally, research briefs are occasional and rigorous research reports, conducted internally or by external partners such as academics, exploring attitudes and behaviors on key issues.
<http://www.fanniemae.com/portal/research-insights/surveys/special-topics.html>



Home Purchase Sentiment Index (HPSI)

$$HPSI = \frac{Q12 + Q13 + Q15 + Q20B + Q112B + Q116}{6} + 63.5$$

Number	NHS Question
Q12	Net Good Time To Buy (Very and Somewhat Good Time To Buy – Very and Somewhat Bad Time To Buy)
Q13	Net Good Time To Sell (Very and Somewhat Good Time To Sell – Very and Somewhat Bad Time To Sell)
Q15	Net Home Prices Will Go Up (next 12 months) (Home Prices Will Go Up – Home Prices Will Go Down)
Q20B	Net Mortgage Rates Will Go Down (next 12 months) (Mortgage Rates Will Go Down – Mortgage Rates Will Go Up)
Q112B	Net Confident about Not Losing Job (next 12 months) (Not at All and Not Very Concerned about Losing Job – Very and Somewhat Concerned about Losing Job)
Q116	Net Confident about Not Losing Job (next 12 months) (Income is Significantly Higher – Income is Significantly Lower)

Notes: (1) Survey responses are expressed as net percent positive, e.g., good minus bad, up minus down.

(2) The net percent positives for each question are weighted equally in calculating the HPSI.

(3) HPSI set to 60 at March, 2011, the first month that Question 112B was asked in the NHS.



AmeriSpeak® from NORC at the University of Chicago

AmeriSpeak is the first U.S. multi-client household panel to combine the speed and cost-effectiveness of panel surveys with enhanced representativeness of the U.S. population, an industry-leading response rate, and the NORC Card, an innovative sample quality report card. Since its founding by NORC at the University of Chicago in 2015, AmeriSpeak has produced more than 900 surveys, been cited by dozens of media outlets and become the primary survey partner of the nation's preeminent news service, The Associated Press. Their sampling captures a true picture of America, providing better representation than other panels for hard-to-reach populations, including low-income households, less educated persons, young adults, rural households, persons who are less interested in the news, and social and political conservatives. AmeriSpeak is the most scientifically rigorous multi-client panel available in the U.S. market.

Additional information about the AmeriSpeak® panel design and a detailed technical overview can be found at:
<https://amerispeak.norc.org/us/en/amerispeak/about-amerispeak/panel-design.html>



Statistical Significance Testing

Statistical significance of the HPSI and net scores is established by comparing estimates of population parameters to determine if the estimates are different.

Estimates of population parameters are calculated by converting the HPSI and net scores into a mean and calculating the surrounding confidence intervals.

Overlap of the confidence intervals surrounding two compared point estimates implies that the confidence interval surrounding the difference between the two point estimates contains 0. Therefore, there is no statistical difference between the two point estimates.

The confidence interval is calculated by:

$$CI = \bar{x} \pm Z \frac{s}{\sqrt{n}}$$

The standard deviation of the sample is estimated by converting the HPSI and net scores into a respondent level series.

The hypotheses are:

$$H_0: p = p_0$$

$$H_a: p \neq p_0$$

