Who's Left Out?: Nonresponse Bias Assessment for an Online Probability-based Panel Recruitment

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Study Background

- For two decades now, probability-based online panels have been relied upon as credible sampling frames with numerous studies showing comparable quality to traditional methodologies like telephone studies (MacInnis et al., 2019; Yeager et al. 2011)
- Like all surveys, response rates to the panel recruitment invitation has been declining over recent years
- Although the Total Survey Error framework points to nonresponse as one of many possible threats to data quality and studies have called into question the connection between response rates and bias, they are still a commonly reported metric

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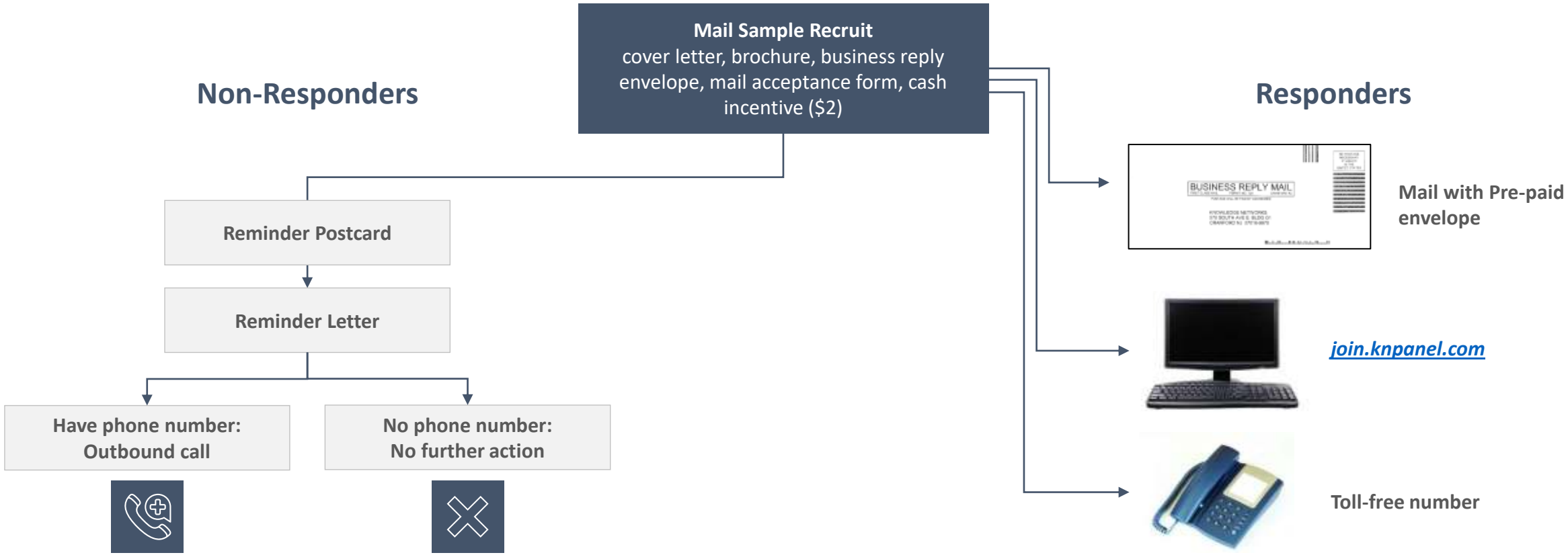
KnowledgePanel Recruitment Methodology

- **Recruitment is primarily through Address-Based Sampling (ABS)**
- **Follow-up efforts and incentives used to maximize response**



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Study Design

- **To investigate the possibility of nonresponse bias at the panel recruitment stage, we conducted two analyses:**
  - **Frame analysis – comparisons of recruited and nonrecruited households based on the available ancillary data appended to the *Delivery Sequence File* (DSF) used for recruitment sampling.**
  - **NRFU – follow-up survey of a random sample of nonrecruited households and comparisons of their responses against those who have been recruited.**

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Study Design – Frame Analysis

- **We investigated one wave of KnowledgePanel recruitment**
- **Recruitment between May and September of 2019**

Total Sample Size	Recruits	Recruitment Rate
40,000	2,019	5%

- **Sample vendor was MSG who worked with data compiler, Neustar, to append a long list of ancillary data items to each address:**

1. Activity Date
2. Age Category
3. Birth Date
4. Business Owner
5. County Size Code
6. Children: Age 0-3
7. Children: Age 10-12
8. Children: Age 13-15
9. Children: Age 16-18
10. Children: Age 4-6
11. Children: Age 7-9
12. CBSA
13. Country of Origin
14. Dwelling Type
15. Dwelling Unit Size
16. Home Value
17. Household Income
18. Ethnic Group
19. Gender
20. Home Business
21. Home/Business
22. Homeownership
23. Household Type
24. Residence Years
25. Marital Status
26. Number of Adults
27. Number of Children
28. Number of Persons
29. Occupation Group
30. Person Type
31. Credit Card
32. Property indicator

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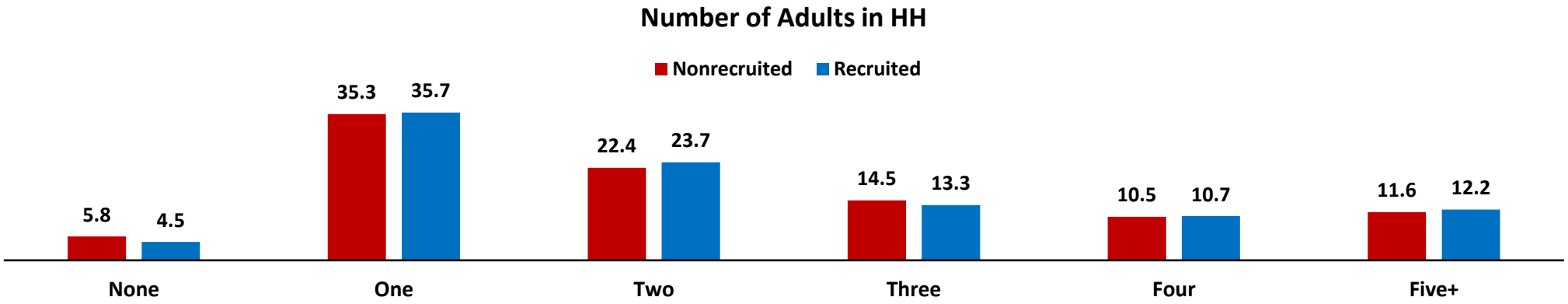
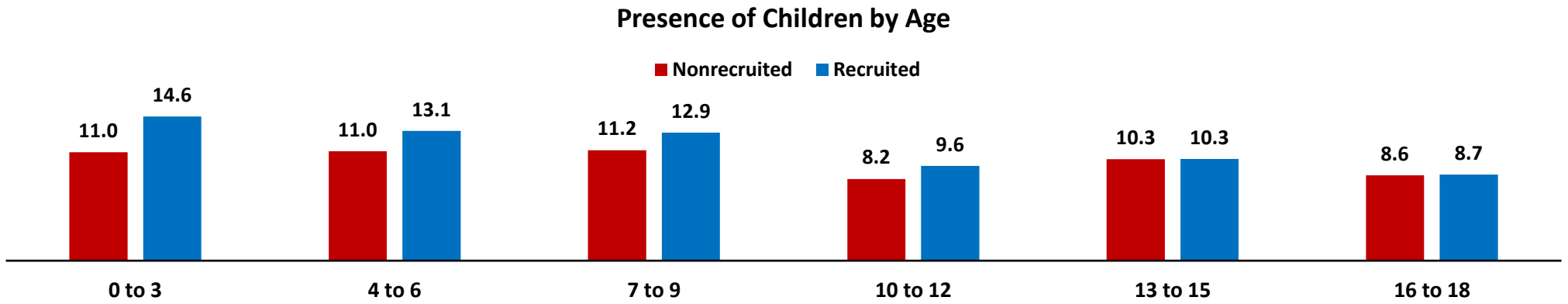
NRFU Frame Analysis - Results

- **Across the list of 32 variables, we saw very few differences between recruits and non-recruits based on ABS frame data**





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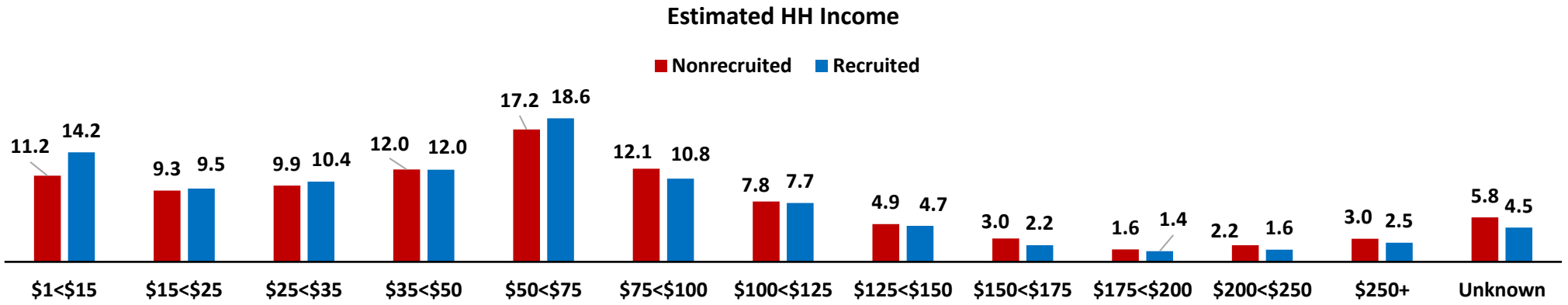

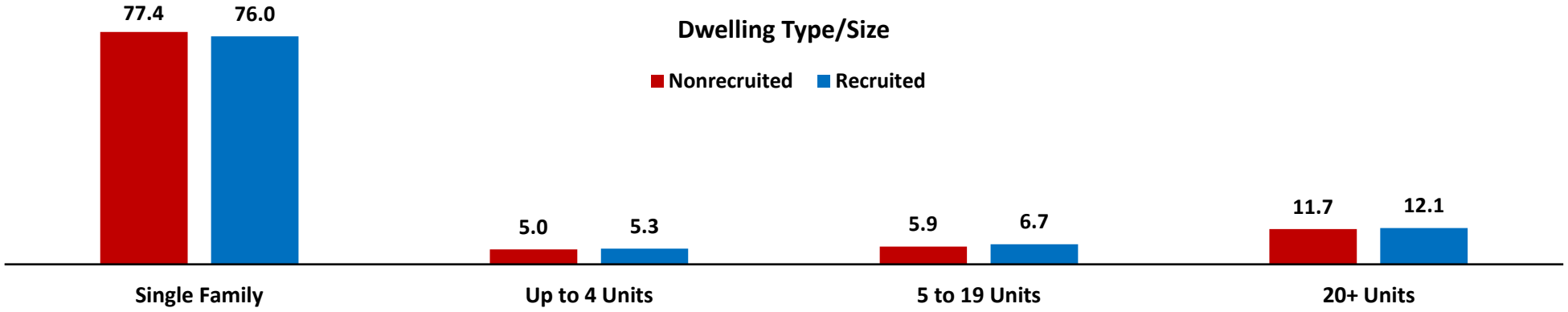

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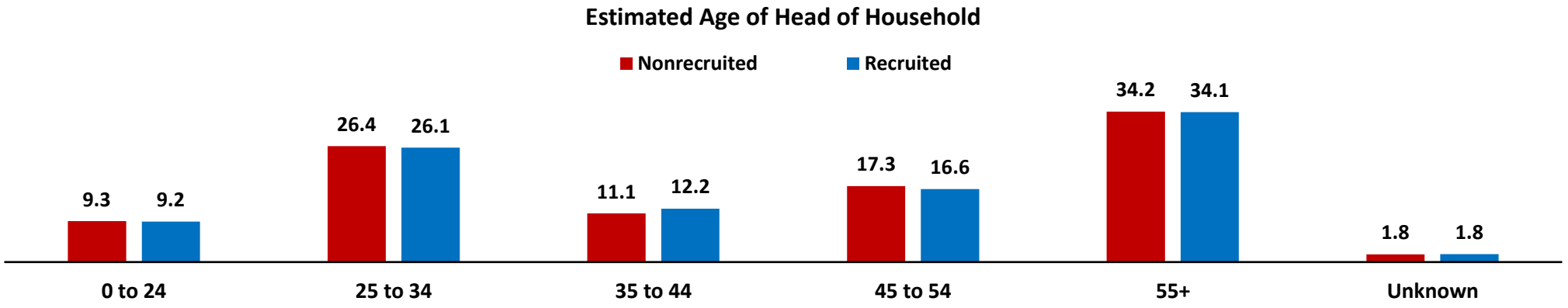

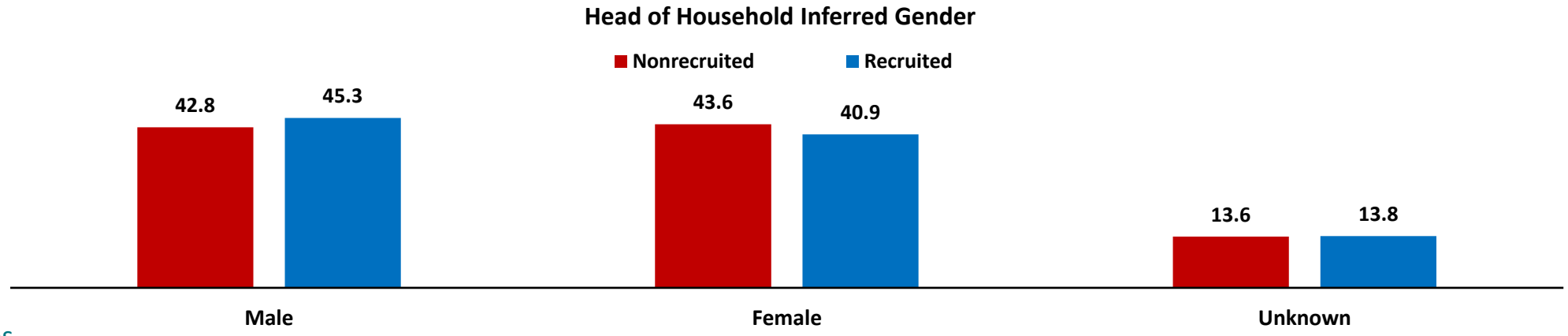

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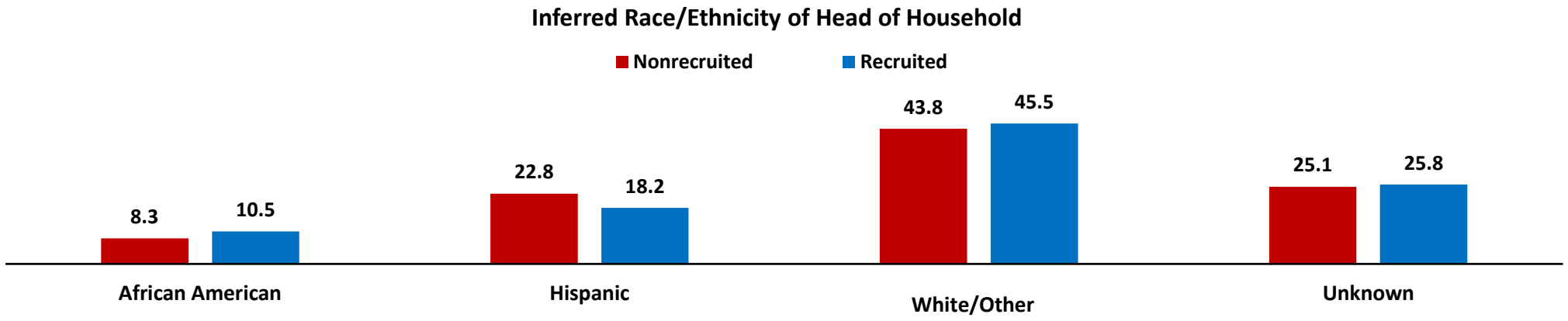

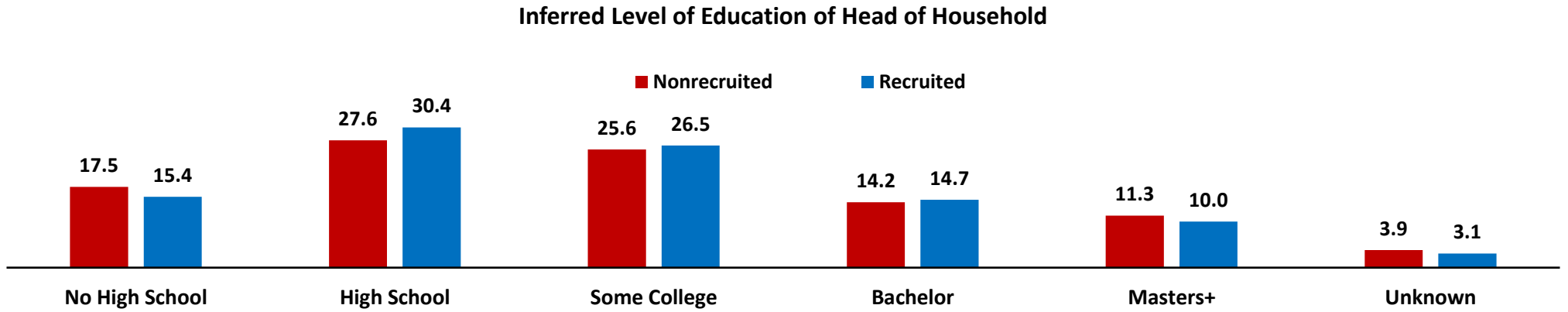

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Study Design – NRFU

- We selected one wave of KnowledgePanel recruitment for NRFU
- Recruitment in Fall of 2019

Total Sample Size	Recruits	Recruitment Rate
17,500	997	6%

- For the NRFU sample:
  - All 997 recruits were sampled with certainty
  - A subsample of 3,300 nonrespondents was selected in anticipation of a lower completion rate

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Study Design – NRFU

- **For the NRFU, we developed a separate brand from KnowledgePanel to avoid possibility of connection with the KP recruitment effort.**

Mailed Invitation with Survey Packet $10

Promise of $20

Postcard with Web URL

Mailed Survey Packet

Postcard with Web URL

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Study Design – NRFU

- With multi-person HH, adult with most recent birthday was asked to complete
- Questionnaire was designed for NRFU with a mix of demographics, attitudes and behaviors – relatively short with 44 questions.
- Fielding was January 31 to April 15, 2020 with samples divided into 3 replicates

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Results – NRFU Completes

- **Study design was successful with 26% completion rate from nonrespondents and 68% from those who responded to the KP recruitment invitation**

KP Recruitment Status	Invited to NRFU	Completed NRFU	Completion Rate	Mail Response	Online Response
Nonrespondent	3,300	866	26%	92%	8%
KP Recruit	997	673	68%	94%	6%

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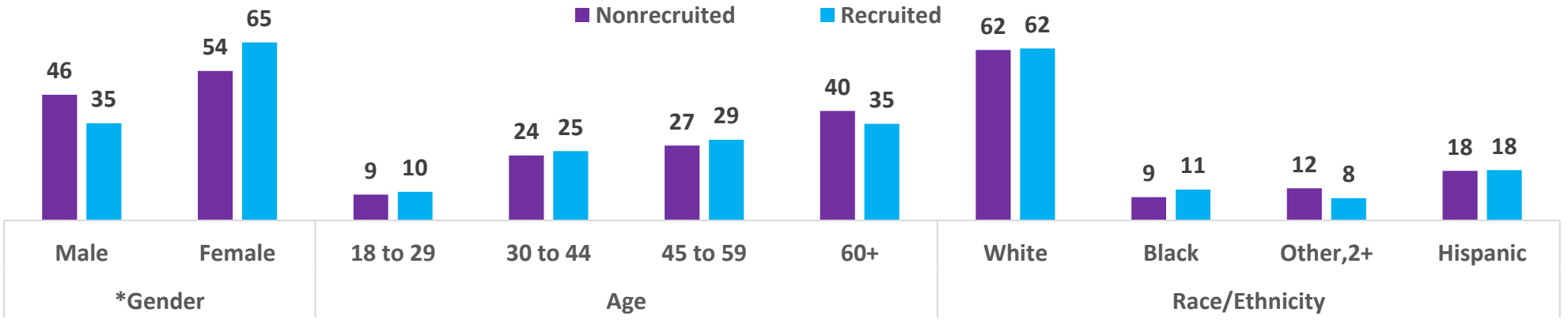
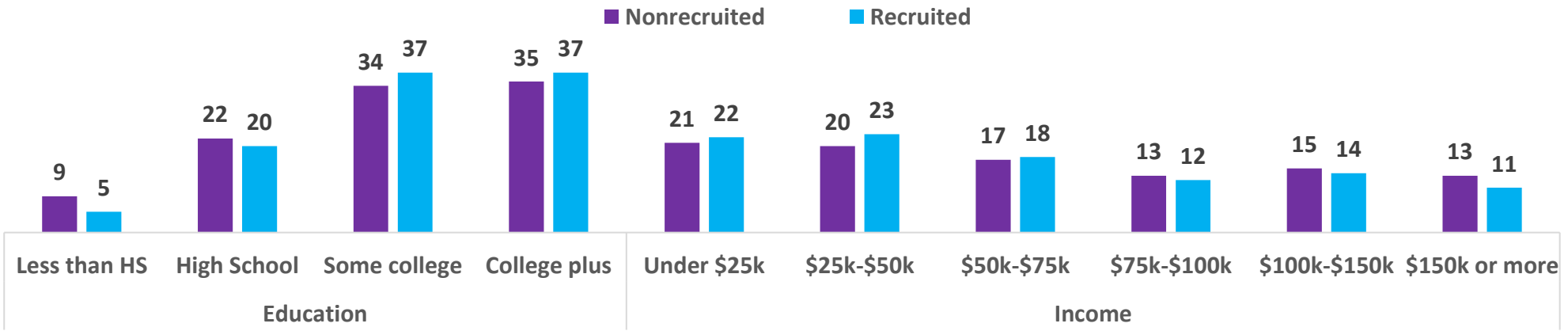
NRFU – Survey follow-up

- **We saw very few differences between recruits and non-recruits**





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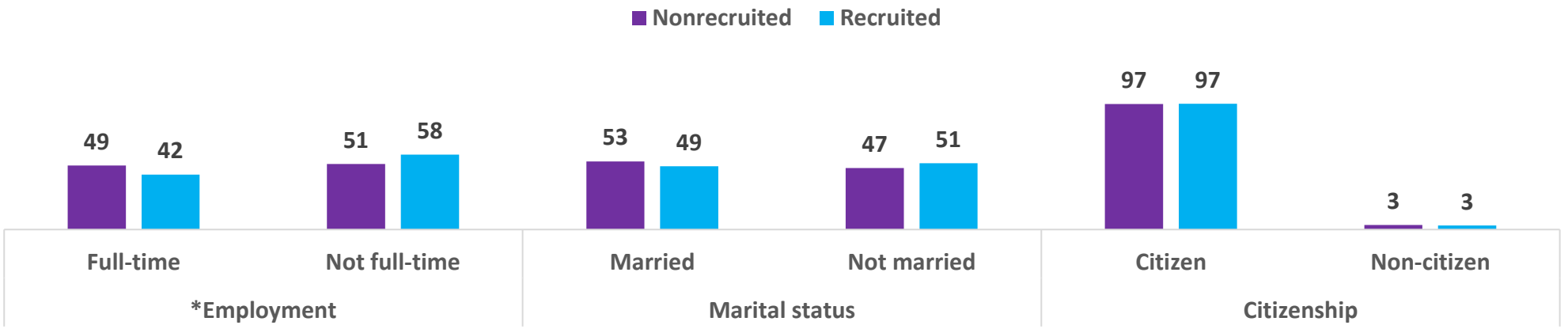

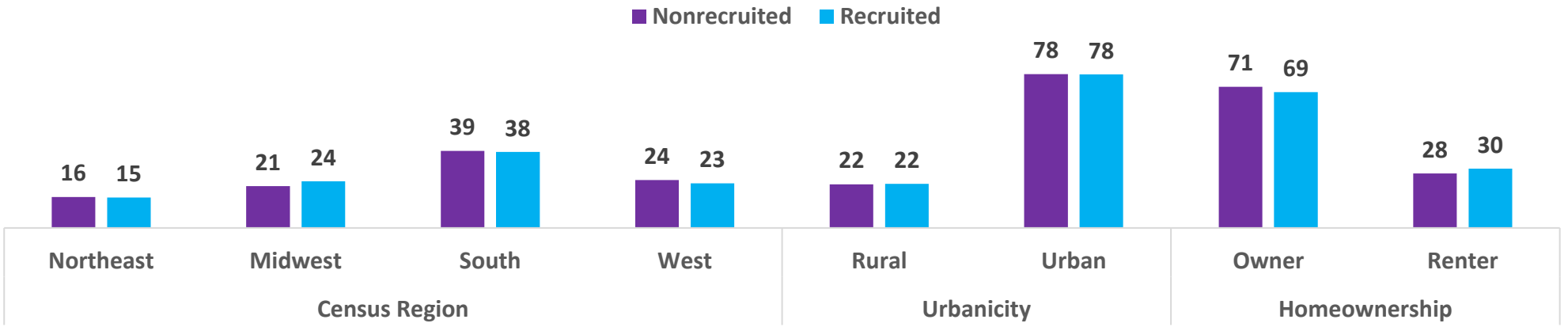

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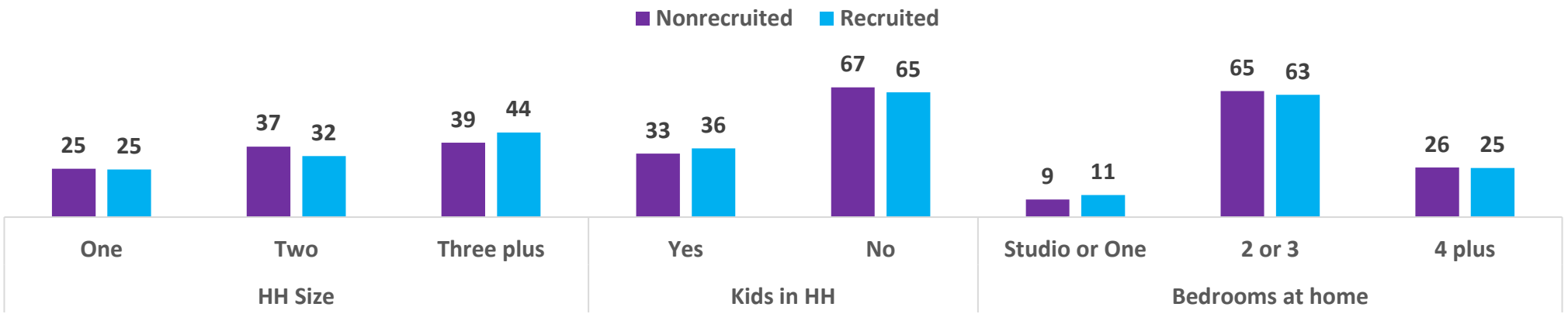

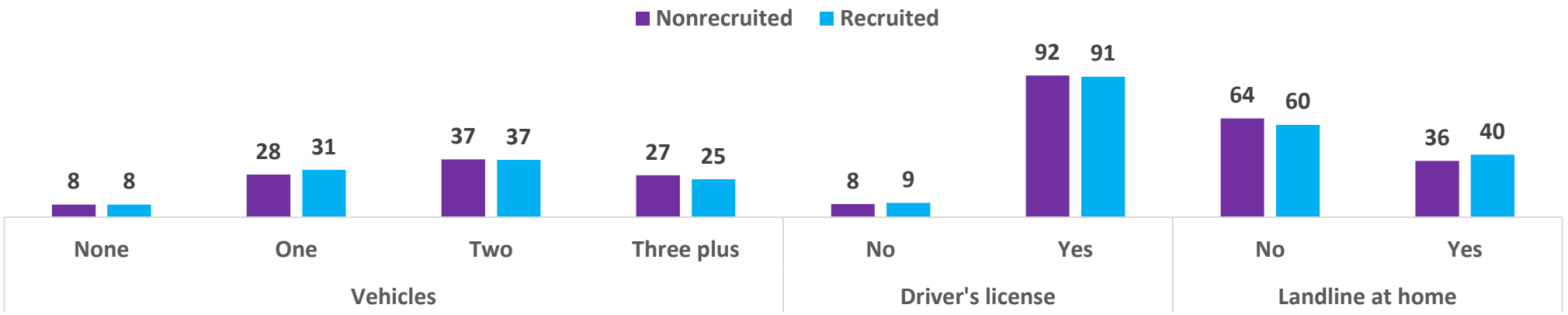

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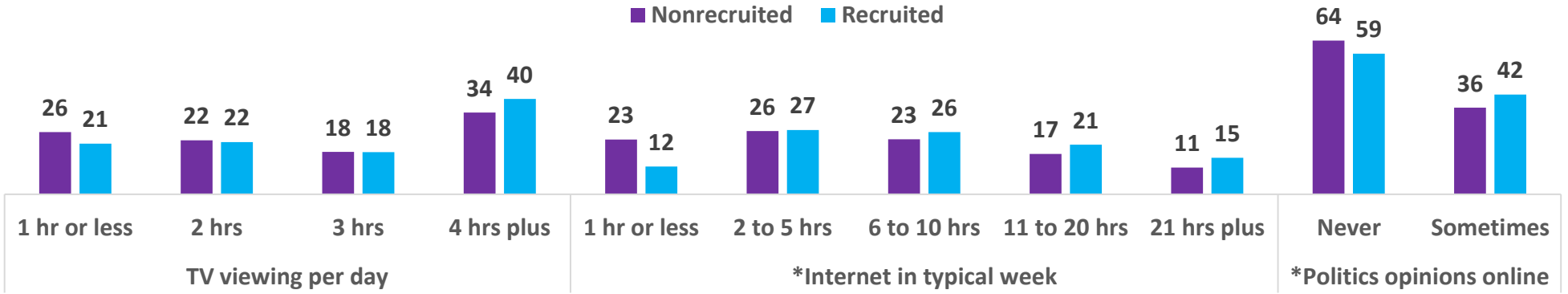

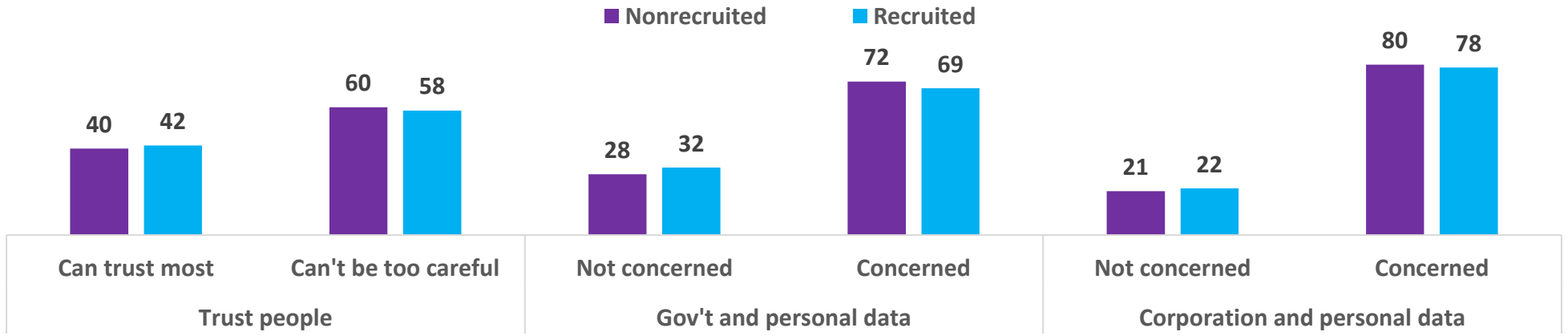

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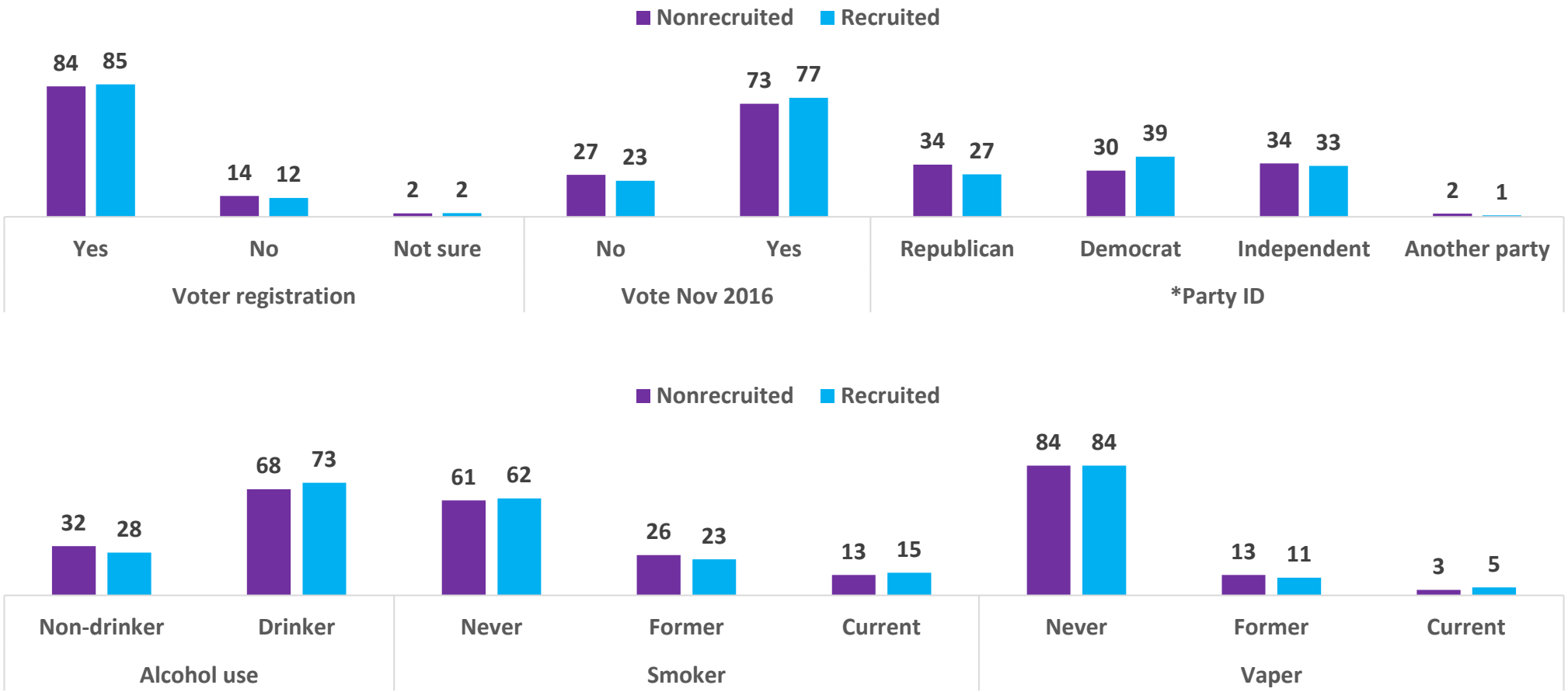

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Conclusions and Discussion

- **This analysis provided a look at households that were invited to join KP but declined to participate**
- **Households recruited to KP exhibited distributions almost identical to those of households not recruited**
- **Differences between recruited and nonrecruited households were rarely statistically significant**

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Conclusions and Discussion

- Taken together, both the frame analysis and the NRFU provides reassurances that nonresponse bias with regard to panel recruitment is of minimal concern among the variables we examined
- The panel recruitment process is robust to differential nonresponse
- We also saw reasonably high completion rates, even among initial nonrespondents to panel recruitment, when combined with:
    - the mail-first followed by push to web approach
    - high incentives

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Thank you!

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