

National Web Survey of Korean Americans Using Respondent Driven Sampling

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1. Motivation

Data Collection with Web-RDS — 1

- Increased interest in data for granular level subgroups (eg. Korean Americans rather than Asian Americans).
- Uncertain feasibility of probability sampling methods for granular subgroups at the national level.
- Web-based Respondent Driven Sampling (Web-RDS) as an alternative
 - Racial homophily: a tendency to form social connections between individuals within the same racial/ethnic group.
→ Chain referrals in RDS
 - High web access among racial/ethnic minority groups (94.3% - ACS 2021).
 - Administration convenience on web (multiple languages, no interviewers).

Data Collection with Web-RDS — 2

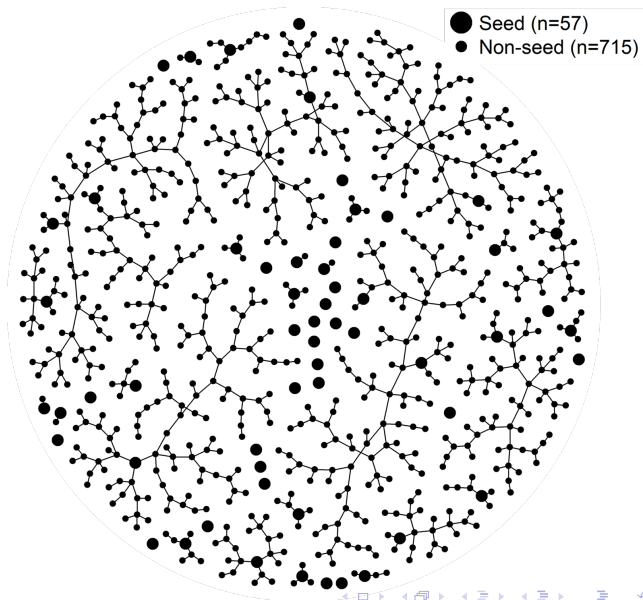
- Seeds can impact data quality.
- In Web survey settings, how coupons are delivered may dictate recruitment convenience for respondents and success for data collection efforts.
 - Chain referral is critical for a successful Web-RDS implementation (i.e., participants need to recruit their peers).
- Researchers have little control over Web-RDS data collection except for two design elements: (1) seed selection, (2) coupon delivery and type.
- **Open questions on the impact of design elements such as:**
 - 1 Seed selection → data quality
 - 2 Coupon delivery and type → recruitment success

2. Health and Well-being of Koreans (HAWK)

HAWK Overview

- A national survey of Korean Americans using Web-RDS.
- Data collection and recruitment in English and Korean.
- Web questionnaire is accessed using a unique code through the study website.
- Each respondent received max. 3 coupons.
- Each coupon had a unique code
→ allowed tracking coupon use and linking recruiters and recruits
- Incentives: \$20 for the survey; \$20 per recruit
- May 2022 - January 2023
- 57 seeds → $n = 772$

Overall Recruitment Chain



HAWK Design Elements

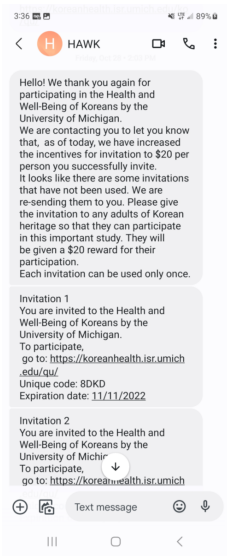
HAWK: Seed Types

- Mail seeds
 - List of randomly selected addresses associated with Korean surnames or ethnicity
 - Mailed invitation letters with \$2 prepaid incentives
 - 24 mail seeds → $n = 222$
- Nonmail seeds
 - Web screener through Facebook ads
 - Sent invitation Emails/SMS
 - 33 nonmail seeds → $n = 550$

HAWK: Coupon Delivery and Type

- Contact delivery mode
 - Email vs. SMS (i.e., text messages).
 - Randomly assign for those who provided both contact information.
- Coupon type
 - Email: all coupons are embedded into a single email vs. each coupon is embedded into separate emails.
 - SMS: verbal vs. image coupons.
 - Randomly assign within coupon delivery mode.

Example of Verbal vs. Image SMS Coupons



Analysis and Results

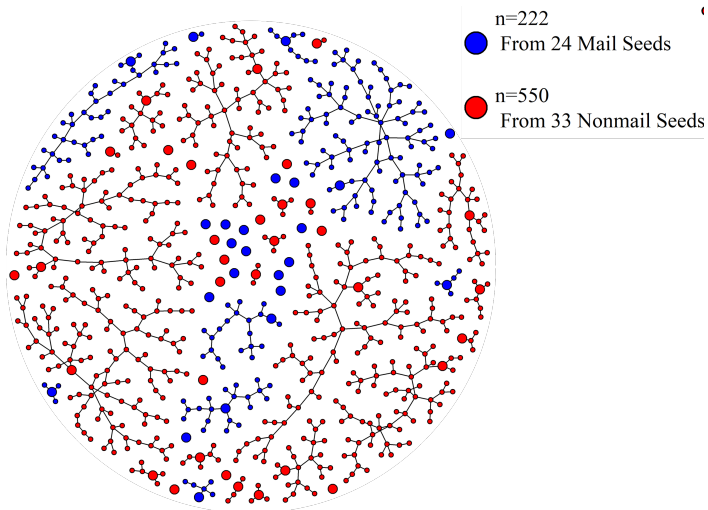
Goal 1: Seed Type and Data Quality

Goal 1: Analysis Steps

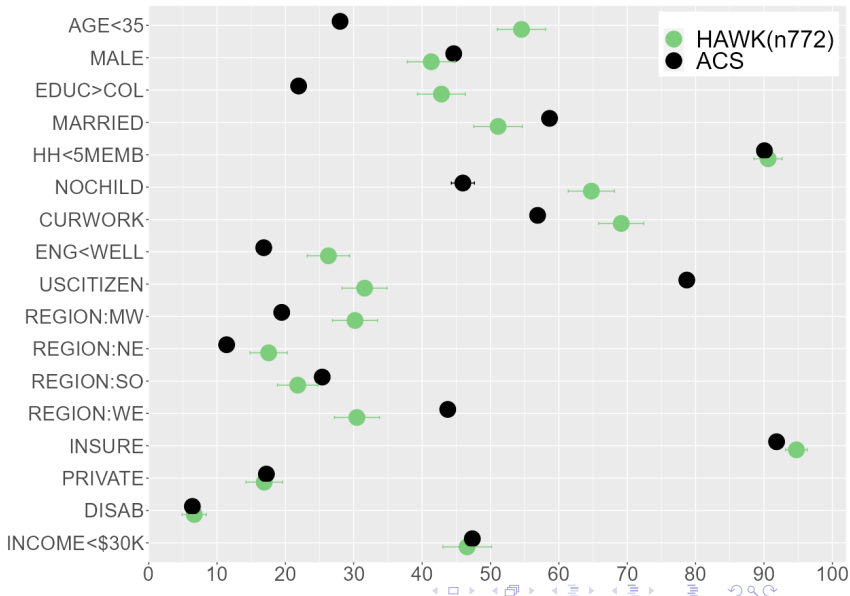
- HAWK
 - Unweighted sample estimates for overall sample and by seed type (mail and nonmail).
 - (RDS estimators provided similar results)
- American Community Survey (ACS) 2021 as a gold standard
 - Filter in Korean American adults from the sample
 - Weighted estimates
- Benchmark characteristics (binary):

| | |
|--------------------------------|----------------------------|
| ① Age: % < 35 years old | ⑧ % Speak English < Well |
| ② Sex: % Male | ⑨ % US citizen |
| ③ Education: % > College | ⑩ % Region |
| ④ % Married | ⑪ % Insured |
| ⑤ % Household members < 5 | ⑫ % With private insurance |
| ⑥ % Without children | ⑬ % With disability |
| ⑦ Employment: % Currently work | ⑭ % Income < \$30K |

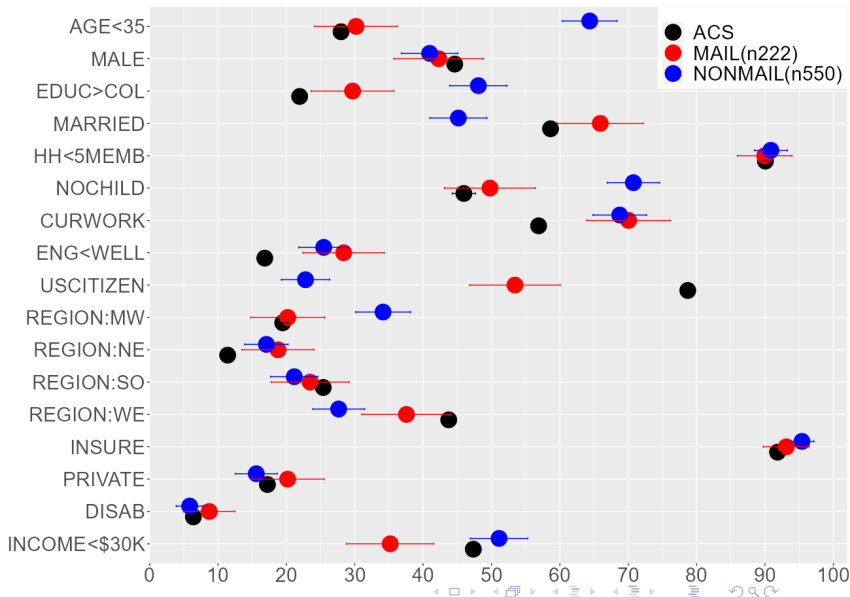
Recruitment Results by Seed Type



ACS vs. HAWK Overall



ACS vs. HAWK by Seed Type



Goal 2: Coupon Delivery and Recruitment Success

Goal 2: Analysis Steps

- Recruitment results
 - Number of issued vs. redeemed coupons
- Recruitment success
 - Number of recruits (n recruits)
 - Percent of issued coupons generating recruits (% coupon redeemed)
 - Any issued coupons generating at least one recruit (any recruit)
- Recruitment success by coupon delivery mode
- Recruitment success by coupon type

Number of Issued vs. Redeemed Coupons

| | Number of Issued Coupons | | | |
|----------------------------|--------------------------|-------------|--------------|--------------|
| | 0 n = 55 | 1 n = 14 | 2 n = 244 | 3 n = 459 |
| Number of Redeemed Coupons | | | | |
| 0 | NA | 9 (64%) | 123 (50%) | 218 (47%) |
| 1 | NA | 5 (36%) | 52 (21%) | 68 (15%) |
| 2 | NA | NA | 69 (28%) | 67 (15%) |
| 3 | NA | NA | NA | 106 (23%) |
| ¹ n (%) | | | | |

Average coupon redemption rate: 38.1%

Recruitment Success by Coupon Delivery Mode

- Respondents who provided Email and Phone and received any coupon.

| Recruitment Success | Email n = 479 | SMS n = 198 |
|----------------------------|-------------------------|-----------------------|
| n recruits* | 0.53 | 0.45 |
| % coupon redeemed | 0.38 | 0.34 |
| any recruit | 1.02 | 0.82 |

* Significant difference between Email and SMS

- Higher recruitment success under Email than SMS delivery of coupons
- The same pattern is observed for all respondents who received any coupon

Recruitment Success by Coupon Type

| Recruitment Success | Email-Separate n = 353 | Email-Single n = 126 |
|----------------------------|----------------------------------|--------------------------------|
| n recruits | 0.55 | 0.47 |
| % coupon redeemed | 0.41 | 0.33 |
| any recruit | 1.06 | 0.93 |

| Recruitment Success | SMS-Image n = 150 | SMS-Verbal n = 48 |
|----------------------------|-----------------------------|-----------------------------|
| n recruits | 0.47 | 0.40 |
| % coupon redeemed | 0.34 | 0.33 |
| any recruit | 0.79 | 0.92 |

(No significant difference between coupon types)

3. Implications

Implications

Goal 1: Seed Type and Data Quality

- Overall, differences between ACS and HAWK decrease when we use mail seeds.
- The pattern holds for 8 out of 14 benchmark variables where HAWK overall and nonmail samples showed discrepancy with ACS estimates.

Goal 2: Coupon Delivery and Recruitment Success

- Recruitment success is higher with Email compared to SMS delivery of coupons.
- No difference in coupon types.

Q & A

Thank you for your attention!

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