

Redirected Inbound Call Sampling (RICS)– An Emerging Fit for Purpose Non-probability Telephone Sample Design

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Standardized calibration adjustment index (SCAI)

Design weights used in the SCAI in general

- Are based on the inverse of the selection probability.
- Have not been adjusted for nonresponse nor trimmed.
- Sum to the population total.

In RICS the design weights are

- Equal for all respondents (i.e., the sampling mechanism mimics a SRS), and
- Sum to the population total

Standardized calibration adjustment index (SCAI)

$$\text{SCAI} = 0.5 * 100 * \frac{\sum_{V_i} |Design WT_i - Analysis WT_i|}{\sum_{V_i} |Analysis WT_i|}$$

SCAI—Interpretation

If there was only one calibration category with two levels (i.e., sex) the SCAI is the absolute value of the difference in the percentage of one category, using the design weight, and the population.

Percent male		SCAI
Population (%)	Design weights (%)	
50	30	20
50	40	10
50	50	0
50	60	10
50	70	20

Investigate Representativeness with SCAI

Year	Study	Frame	Mode	N	SCAI	Average SCAI
2014	NY-Adult Tobacco Study	ABS	PAPI	3,899	24.6	26.6
2015	NY-Adult Tobacco Study	ABS	Web/PAPI	2,802	29.8	
2016	NY-Adult Tobacco Study	ABS	Web/PAPI	1,872	25.3	
2017	NY-Adult Tobacco Study	Telephone	CATI	3,286	16.9	18.7
2016	National Adult Tobacco Study	Telephone	CATI	1,582	19.5	
2017	National Adult Tobacco Study	Telephone	CATI	1,690	19.6	
2016	National Adult Tobacco Study	RICS	IVR	4,302	19.0	20.5
2017	National Adult Tobacco Study	RICS	IVR	4,599	20.2	
2018	National Adult Tobacco Study	RICS	IVR	4,060	22.2	

ABS-address based sample

CATI-computer assisted telephone interview

PAPI-paper and pencil interview

IVR-interactive voice response

Take away—The RICS IVR data matched the population better than ABS and almost as well as outbound telephone.