

# Computing Response Rates for Probability-Based Web Panels

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*August 4, 2009*

Prepared for:



# Introduction

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- This paper is an expansion on previous work on computing response rates for online panels (Callegaro & DiSogra, 2008)
- More and more probability-based online panels being built
  - 2008-2009 American National Election Studies (ANES) Panel
  - Face-to-Face Recruited Internet Survey Platform (FFRISP, 2008)
  - Dutch Long-term Internet Study for the Social Science (LISS) panel (2007)
- Still no officially agreed standard on how to compute response rates for online panels
- Latest effort by ISO (standard #26362) touches on subject

# Common steps in building a probability-based panel

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1. Recruitment Rate (RECR): the recruitment of potential panel members
  - Recruitment rate calculation will depend on the recruitment mode: face -to-face, telephone, mail
2. Profile Rate (PROR): empanelling recruited persons
  - This stage counts panel members that answered their profile survey, generally a questionnaire collecting background information and welcoming respondents to the panel
  - The computation of the profile rate (a.k.a., connection rate) will depend on the data collection mode
  - Profiled members are considered to be “**active members**” in the pool from which study samples can be drawn

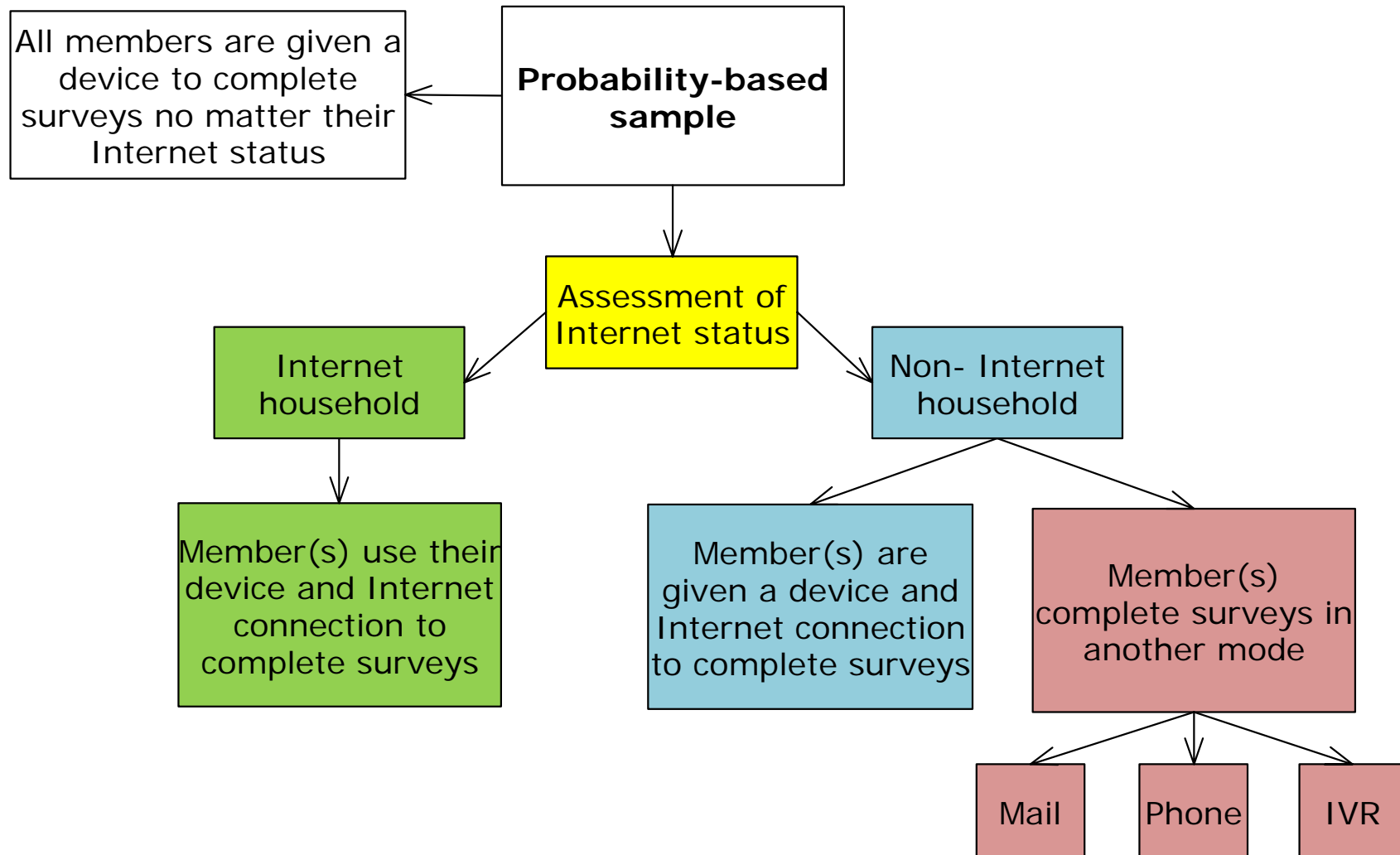
# Probability-based design features

## Implications for computing response rates

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1. Single recruitment cohort (one-time effort) vs. multiple recruitment cohorts (on-going recruitment)
2. Within-household selection to recruit one person vs. whole household recruitment of all eligible persons
3. The data collection mode used for non-internet households (no access to online surveys at time of recruitment)

# Methods of dealing with non-Internet households



# Multiple stages in computing RR

## The cumulative response rate

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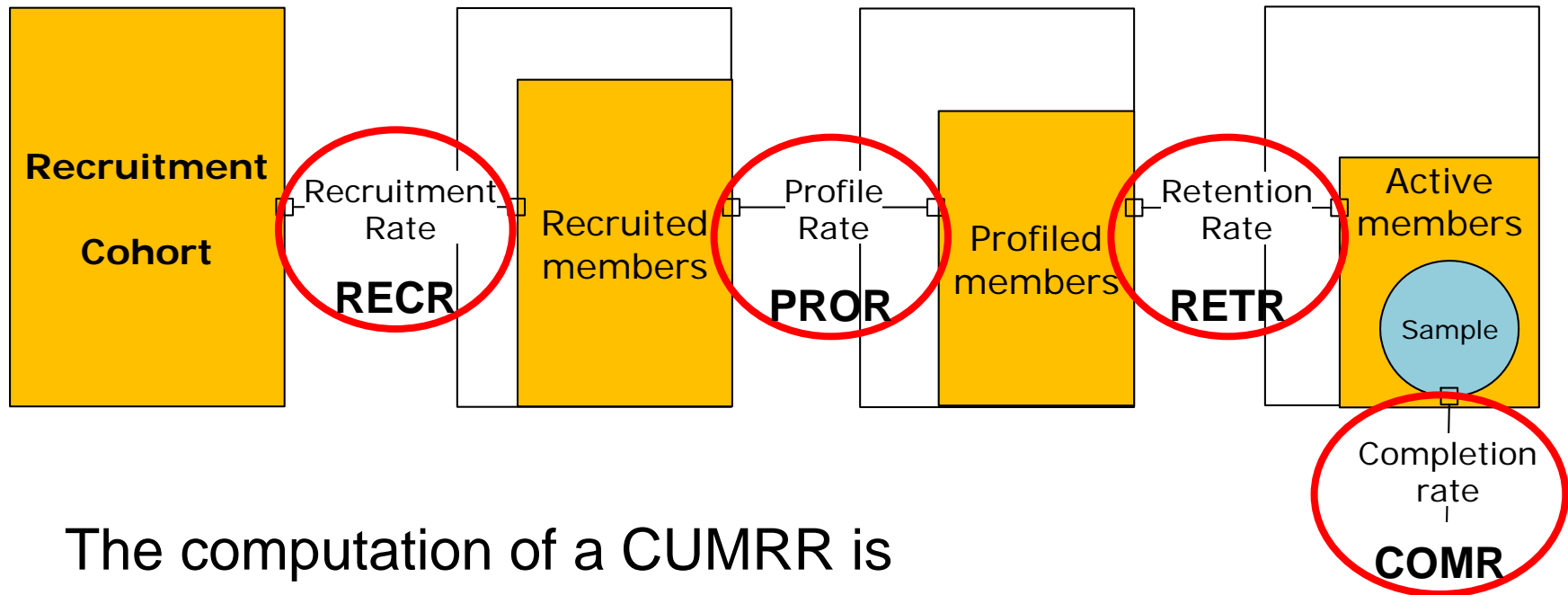
- ✓ Recruitment rate (RECR)
- ✓ Profile rate (PROR)
- ✓ Retention rate (RETR)
- ✓ Survey completion rate (COMR)
- ✓ Cumulative response rate (CUMRR)

$$\text{CUMRR1} = \text{RECR} \times \text{PROR} \times \text{COMR}$$

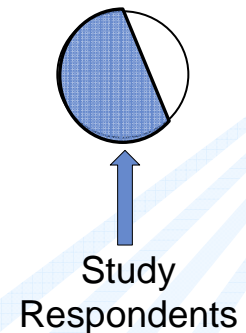
$$\text{CUMRR2} = \text{RECR} \times \text{PROR} \times \text{RETR} \times \text{COMR}$$

Each rate can be computed using the appropriate data collection mode AAPOR disposition codes

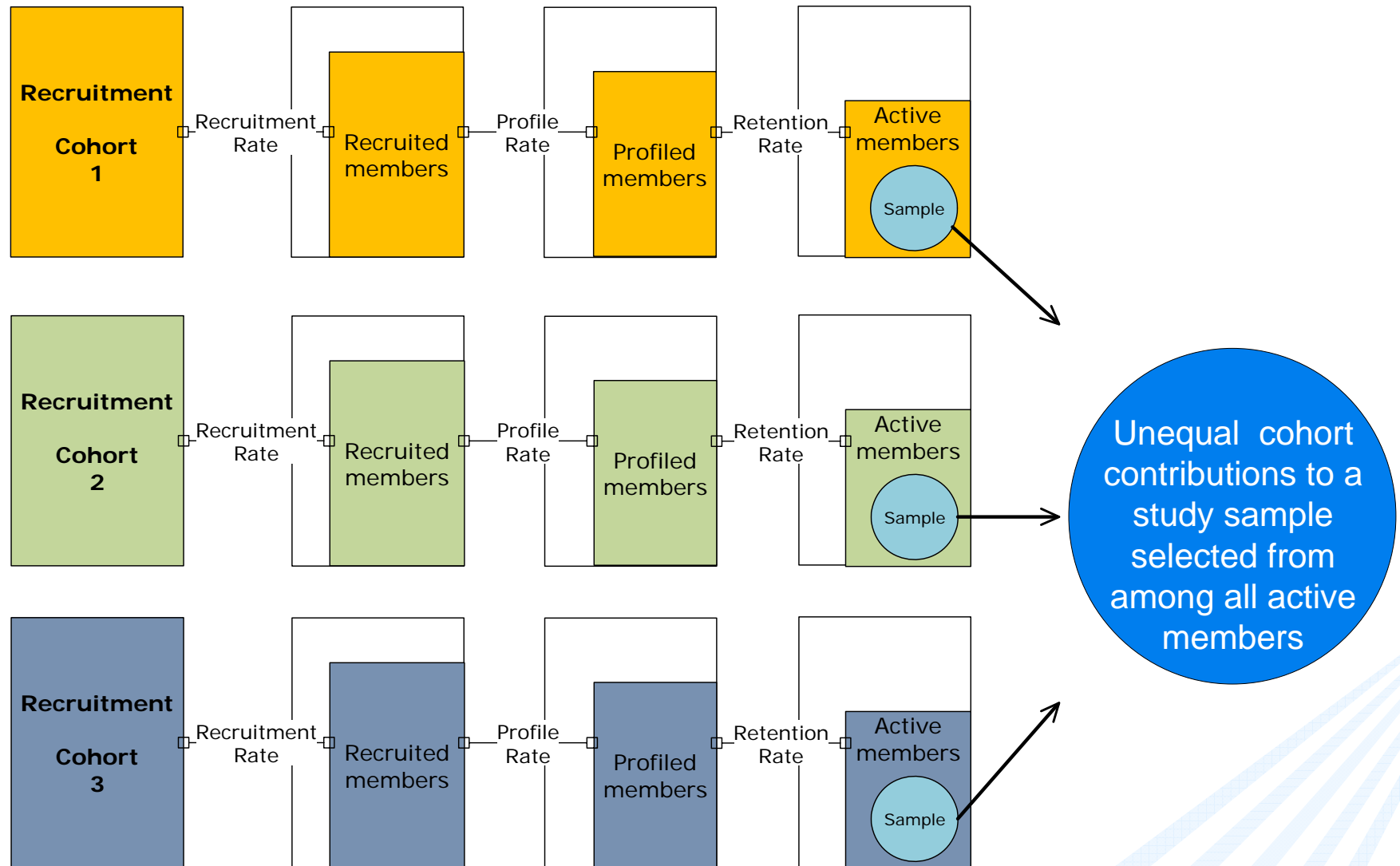
# Computing CUMRR with 1 cohort



The computation of a CUMRR is straightforward when the panel is built with a single recruitment cohort



# Computing CUMRR with 3 cohorts



# Formulas dealing with multiple cohorts (1.)

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RECR, PROR, RETR are calculated as the weighted average of the size contribution of each cohort

Example to calculate  $RECR_{total}$

$$RECR_{total} = \frac{W_{c1}RECR_{c1} + W_{c2}RECR_{c2} + W_{c3}RECR_{c3} + \dots W_{cn}RECR_{cn}}{W_{c1} + W_{c2} + W_{c3} + \dots W_{cn}}$$

Where  $W_{cn}$  = the number of cases contributed to the sample from cohort  $n$

## Example of RECR with 3 cohorts

	Cohort 1	Cohort 2	Cohort 3
Size in the final sample	200	100	50
Recruitment rate (RECR)	.35	.27	.15

$$RECR_{total} = \frac{200(.35) + 100(.27) + 50(.15)}{200 + 100 + 50} =$$

$$RECR_{total} = \frac{70 + 27 + 7.5}{350} = \frac{104.5}{350} = .2985$$

## Formulas dealing with multiple cohorts (2.)

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$$RECR_{total} = \frac{W_{c1}RECR_{c1} + W_{c2}RECR_{c2} + W_{c3}RECR_{c3} + \dots W_{cn}RECR_{cn}}{W_{c1} + W_{c2} + W_{c3} + \dots W_{cn}}$$

$$PROR_{total} = \frac{W_{c1}PROR_{c1} + W_{c2}PROR_{c2} + W_{c3}PROR_{c3} + \dots W_{cn}PROR_{cn}}{W_{c1} + W_{c2} + W_{c3} + \dots W_{cn}}$$

$$RETR_{total} = \frac{W_{c1}RETR_{c1} + W_{c2}RETR_{c2} + W_{c3}RETR_{c3} + \dots W_{cn}RETR_{cn}}{W_{c1} + W_{c2} + W_{c3} + \dots W_{cn}}$$

# Full example with 3 cohorts

	Cohort 1	Cohort 2	Cohort 3	$R_{total}$
Size	200	100	50	
RECR	.35	.27	.15	.299
PROR	.57	.65	.70	.611
RETR	.50	.67	.85	.599

Assume a survey completion rate (COMR) of .713

$$CUMRR1_{total} = .299 \times .611 \times .713 = .130 \times 100\% = 13.0\%$$

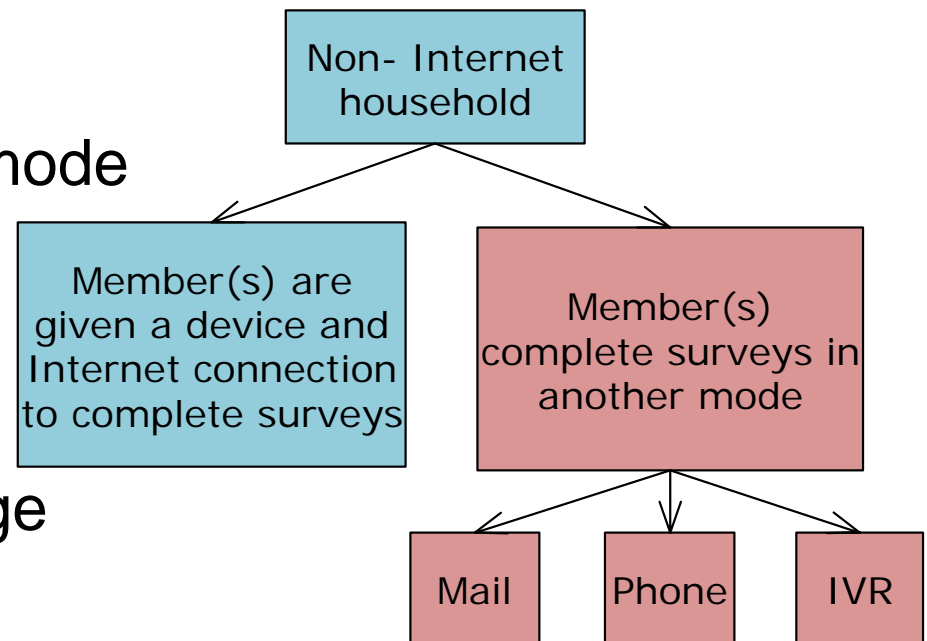
$$CUMRR2_{total} = .299 \times .611 \times .599 \times .713 = .078 \times 100\% = 7.8\%$$

# Computing completion rate (COMR) when multiple data collection modes are used

Completion rates need to be computed separately for each mode

- Web survey
- Mail, phone or IVR

These rates should also be combined as a weighted average



# Some factors affecting each rate

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## Recruitment rate

- Recruitment methods
- Incentives

## Profile rate

- Incentives
- Panel management efforts

## Retention rate

- Time elapsed since recruitment
- Incentives
- Panel management efforts

## Survey completion rate

- Field time
- Incentives
- Reminders

# Extra considerations

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- Recruitment level computed at a household or at a person level (when recruiting multiple members per household)
- Attrition rates for cross sectional design
- Attrition rates for longitudinal designs

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