

**NORTHWEST AREA FOUNDATION
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AAPOR OUTCOME RATE DOCUMENTATION



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Note: This documentation was taken directly from the AAPOR Standard Definitions, available at the AAPOR web site (<http://www.aapor.org>). Information on response rates five (RR5) and six (RR6) are included in this document, even though these rates are not included in the OSRL Sample Report and AAPOR Outcome Rates.

Calculating Outcome Rates from Final Disposition Distributions

Numerous outcome rates are commonly cited in survey reports and in the research literature. The same names are used to describe fundamentally different rates and different names are sometimes applied to the same rates. As a result, survey researchers are rarely doing things in a comparable manner and frequently are not even speaking the same technical language. As Groves and Lyberg (1988) have noted, "(t)here are so many ways of calculating response rates that comparisons across surveys are fraught with misinterpretations." Among the more common terms utilized are response, cooperation, refusal, and contact.

As defined by CASRO (Frankel, 1983) and other sources (Groves, 1989; Hidioglou, et al., 1993; Kviz, 1977; Lessler and Kalsbeek, 1992; Massey, 1995), the response rate is the number of complete interviews with reporting units divided by the number of eligible reporting units in the sample. Using the final disposition codes described above, several response rates are described below:

- RR** = Response rate
- COOP** = Cooperation rate
- REF** = Refusal rate
- CON** = Contact rate
- I** = Complete interview (1.1)
- P** = Partial interview (1.2)
- R** = Refusal and break-off (2.10)
- NC** = Non-contact (2.20)
- O** = Other (2.30)
- UH** = Unknown if household/occupied HU (3.10)
- UO** = Unknown, other (3.20)
- e** = Estimated proportion of cases of unknown eligibility that are eligible

Response Rates

RR1

$$\frac{I}{(I + P) + (R + NC + O) + (UH + UO)}$$

Response Rate 1 (RR1), or the minimum response rate, is the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews (refusal and break-off plus non-contacts plus others) plus all cases of unknown eligibility (unknown if housing unit, plus unknown, other).

RR2

$$\frac{(I + P)}{(I + P) + (R + NC + O) + (UH + UO)}$$

Response Rate 2 (RR2) counts partial interviews as respondents.

RR3

$$\frac{I}{(I + P) + (R + NC + O) + e(UH + UO)}$$

Response Rate 3 (RR3) estimates what proportion of cases of unknown eligibility are actually eligible. In estimating e , one must be guided by the best available scientific information on what share eligible cases make up among the unknown cases and one must not select a proportion in order to boost the response rate. The basis for the estimate must be explicitly stated and detailed. It may consist of separate estimates (Estimate 1, Estimate 2) for the sub-components of unknowns (3.10 and 3.20) and/or a range of estimators based of differing procedures²⁵. In each case, the basis of all estimates must be indicated.

RR4

$$\frac{(I + P)}{(I + P) + (R + NC + O) + e(UH + UO)}$$

Response Rate 4 (RR4) allocates cases of unknown eligibility as in RR3, but also includes partial interviews as respondents as in RR2.

²⁵ One approach is to assume that the proportion of eligible and ineligible cases among the cases whose eligibility status is known would also apply to the cases of indeterminate eligibility (Lessler and Kalsbeek, 1992, p. 115 and Hidioglou, Drew, and Gray, 1993). A second approach uses special studies that follow-up the unknown cases to estimate eligibility status in similar studies (Groves and Lyberg, 1988; Massey, 1995; Shapiro, et al., 1995). A third approach considers what is known about some or all of the individual cases and estimates eligibility on the basis of what is known from attempts to contact and interview them (Taylor, 1997).

RR5

$$\frac{I}{(I + P) + (R + NC + O)}$$

RR6

$$\frac{(I + P)}{(I + P) + (R + NC + O)}$$

Response Rate 5 (RR5) is either a special case of RR3 in that it assumes that $e=0$ (i.e. that there are no eligible cases among the cases of unknown eligibility) or the rare case in which there are no cases of unknown eligibility. Response Rate 6 (RR6) makes that same assumption and also includes partial interviews as respondents. RR5 and RR6 are only appropriate when it is valid to assume that none of the unknown cases are eligible ones, or when there are no unknown cases. RR6 represents the maximum response rate.

Cooperation Rates

A cooperation rate is the proportion of all cases interviewed of all eligible units ever contacted. There are both household-level and respondent-level cooperation rates. The rates here are household-level rates. They are based on contact with households, including respondents, rather than contacts with respondents only. Respondent-level cooperation rates could also be calculated using only contacts with and refusals from known respondents.

COOP1

$$\frac{I}{(I + P) + R + O}$$

Cooperation Rate 1 (COOP1), or the minimum cooperation rate, is the number of complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews that involve the identification of and contact with an eligible respondent (refusal and break-off plus other).

COOP2

$$\frac{(I + P)}{(I + P) + R + O}$$

Cooperation Rate 2 (COOP2) counts partial interviews as respondents.

COOP3

$$\frac{I}{(I + P) + R}$$

COOP4

$$\frac{(I + P)}{(I + P) + R}$$

Cooperation Rate 3 (COOP3) defines those unable to do an interview as also incapable of cooperating and they are excluded from the base. Cooperation Rate 4 (COOP4) does the same as Cooperation Rate 3, but includes partials as interviews.

Refusal Rates

A refusal rate is the proportion of all cases in which a housing unit or respondent refuses to do an interview, or breaks-off an interview of all potentially eligible cases.

REF1

$$\frac{R}{(I + P) + (R + NC + O) + (UH + UO)}$$

Refusal Rate 1 (REF1) is the number of refusals divided by the interviews (complete and partial) plus the non-respondents (refusals, non-contacts, and others) plus the cases of unknown eligibility.

REF2

$$\frac{R}{(I + P) + (R + NC + O) + e(UH + UO)}$$

Refusal Rate 2 (REF2) includes estimated eligible cases among the unknown cases similar to RR3 and RR4 above.

REF3

$$\frac{R}{(I + P) + (R + NC + O)}$$

Refusal Rate 3 is analogous to RR5 and RR6 above. As in those cases the elimination of the unknowns from the equation must be fully justified by the actual situation.

Non-contact and other rates can be calculated in a manner similar to refusal rates. Refusal, non-contact, and other rates will sum to equal the non-response rate.

Contact Rates

A contact rate measures the proportion of all cases in which some responsible member of the housing unit was reached by the survey.

CON1

$$\frac{(I + P) + R + O}{(I + P) + R + O + NC + (UH + UO)}$$

Contact Rate 1 (CON1) assumes that all cases of indeterminate eligibility are actually eligible.

CON2

$$\frac{(I + P) + R + O}{(I + P) + R + O + NC + e(UH + UO)}$$

Contact Rate 2 (CON2) includes in the base only the estimated eligible cases among the undetermined cases.

CON3

$$\frac{(I + P) + R + O}{(I + P) + R + O + NC}$$

Contact Rate 3 (CON3) includes in the base only known eligible cases.

Reporting Outcome Rates

In reporting response rates and all other outcome rates calculated according to the rules and formulas indicated above, researchers must precisely define which rates are being used. For example, a statement that "the response rate is X" is unacceptable. One must report on exactly which rate was used such as "Response Rate 2 was X." In addition, a table showing the final disposition codes for all cases should be prepared for the report and made available upon request²⁶.

²⁶ In addition, weighted outcome rates for multiple-stage samples would be needed when there is differential representation of respondents (e.g. students or employees) by intermediate sampling units (e.g., schools or firms). Weighted outcome rates should be used as needed and any weighting should explained in detail.