

# Response Rates in PICA

Mark E. Troy, Ph.D.



**INSTITUTIONAL EFFECTIVENESS  
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# Three questions about response rates in end-of-term appraisals

- What are the response rates for PICA and paper appraisals?
- If different, how concerned should we be about the difference? Alternatively: how low can the response rates be before we become concerned?
- Can response rates be improved?

# What are the response rates for PICA and paper appraisals?

- Overall, the average response rate for PICA each semester is 50%—55%. For paper, the average response rate is 70%—75%.
- For both PICA and paper, approximately 15% of courses will have response rates higher than 90%.
- For both PICA and paper, less than 5% of courses will have response rates lower than 10%.



# How low can the response rates be before we become concerned?

- Two concerns:
- Avoid non-response bias.
  - A bias that occurs when respondents come from a different population than non-respondents.
  - Assumes that the reason students do not respond is related to differences in experience or motivation.
  - “Only those who really like you and those who really hate you will do the evaluations.”
  - Although a popular theory, it is not supported by empirical evidence.
- Meet requirements for statistical validity



# Statistical Validity

- Requirements for statistical validity.
  - More responses are better than fewer responses.
  - How many responses are needed for the data to provide adequate evidence for accountability and improvement depends on
    - the class size, and
    - the level of precision we are prepared to accept.
  - The average class size at A&M (excluding independent study and research) is 31 and the median is 20.
  - In hypothesis testing, we usually require a stringent level of precision as indicated by the 95% confidence interval.
  - In formative and exploratory analysis, a less stringent criterion is acceptable, usually 80% confidence.



# Required response rates by class size

Course Enrollment	Required # respondents 80% confidence	Required response rate 80% confidence	Required # respondents 95% confidence	Required response rate 95% confidence
10	7	75%	10	100%
20	12	58%	19	97%
30	14	48%	29	96%
50	17	35%	47	93%
70	19	28%	64	91%
100	21	21%	87	87%
250	24	10%	183	73%
500	25	5%	289	58%

Source: Nulty, Duncan D. (2008) The adequacy of response rates to online and paper surveys: what can be done? *Assessment & Evaluation in Higher Education*, Vol.33, No.3, June 2008, 301-314.

<http://public.callutheran.edu/~mondsche/misc/Nulty.pdf>



# Fill the Bucket

- From the table above it is clear that:
  - With an average class size of 31, both PICA and paper administrations achieve an adequate response rate, using the 80% criterion.
  - Despite a higher response rate, paper administration does not attain and probably cannot attain an adequate response rate using the 95% criterion.
- Conclusion: the difference in response rate between paper and PICA is not large enough to affect statistical validity of the results
- Recommendation: Fill the bucket. Aim to achieve the adequate response rate for a class size and do not worry about going beyond.



# How to Improve Response Rates

- Invitation and frequent reminders from faculty.
- Persuade students that their responses will be used.
- Help students understand how to give constructive feedback.
- Involve students in choice of optional questions.
- Administer early feedback.
- Give students knowledge of results.
- Make use of current technology such as tablets and smartphones to administer the appraisals.



# Office of Institutional Effectiveness & Evaluation

<http://assessment.tamu.edu>

<http://pica.tamu.edu>

[evaluations@tamu.edu](mailto:evaluations@tamu.edu)

[pica@tamu.edu](mailto:pica@tamu.edu)



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