Summative Confidence

An Introductory Overview

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Validity of Evaluation Conclusions

- Model Training Program in Evaluation
  - Daniel Stufflebeam (1971)
  - Three nationally known evaluators evaluating the same program at the same time and with access to the same information and personnel reached three different conclusions.
- Financial-dependence on clients
  - Tell them what they want to hear mentality
- Selective disclosure of conclusions

Issues with Existing CI Methods

- CIs do not account for design elements
- Traditional CIs account for four factors, but only three contribute to precision.
  - $100(1 - \alpha)\%$ CI: $\theta \pm Z_{(\alpha/2)} \times \sigma/\sqrt{n}$
- Proper interpretation of a CI
  - The proportion of CIs that would contain the "true" result if the study was replicated ad infinitum.

Defining Summative Confidence

- Definition
  - A confidence interval for composite variables that accounts for design characteristics, such sampling and measurement error.

- Two types of Summative Confidence
  - Floating interval, fixed confidence level
  - Fixed interval, variable confidence level

Logic of Summative Confidence

- Everything can be measured
- Measurement error accumulates as data is synthesized
- Increased information leads to improved precision

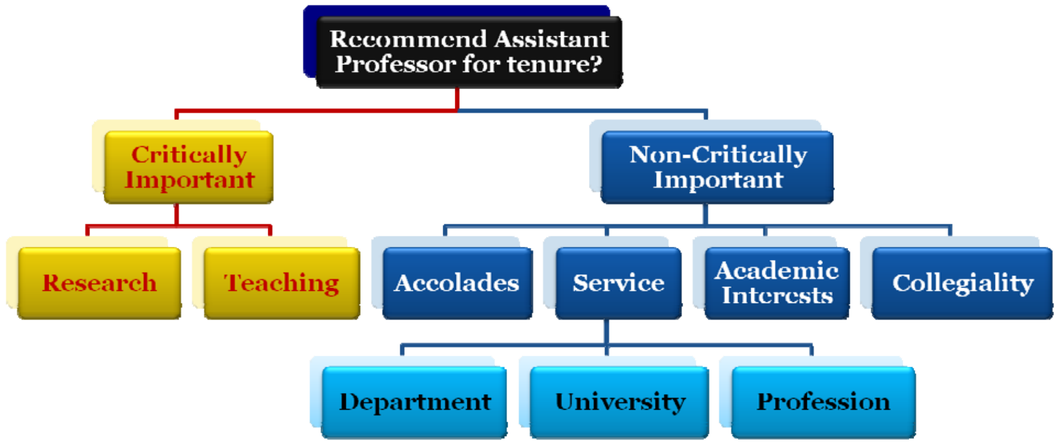
Factors to Consider in Analysis

- Family Type I Error (alpha)
- Values (i.e., criteria of merit and worth)
  - The number, organizational structure, and correlations between the values
- Standards
  - Soft hurdles, hard hurdles, and bars
- Effect size
- Sample size
- Heterogeneity

Factors (cont.)

- Measurement error
  - Inter-rater reliability
- Sampling error
- Construct validity
- Triangulation
- Weighting scheme

Faculty Tenure Review Example



Summative Confidence Vs. Meta-Analysis & Other Analyses

- Multiple studies VS. a single study
- Summative conclusions are not true dependent variable. They are constructed variables.
- Traditional statistical analysis do not account for some type of design elements.

Power of Summative Confidence

- Power analysis
  - Post hoc
  - A priori
- Strengthening “weak” designs
- Cost analysis

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