

Threats to External Validity¹

Population

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| 1. | Generalization Across Subjects | The extent to which we can generalize from the experimental sample to the accessible population. |
| 2. | Interaction of Personal Variables and Treatment Effects | The extent to which the intervention differentially affects the experimental participants based on their characteristics. |
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Ecological

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| 3. | Verification of the Independent Variable | The extent to which one can reproduce the exact implementation of the independent variable |
| 4. | Multiple Treatment Interference | The extent to which one can generalize the effects of a single independent variable when participants are exposed to several independent variables. |
| 5. | Novelty and Disruption Effects | The extent to which the novelty or disruptive aspects of an independent variable limit generalization to situations where these novelty or disruptive aspects are not present or fade away. |
| 6. | Hawthorne Effect | The extent to which the extra attention provided to the participants during the study limits generalization to situations where the extra attention is not present. |
| 7. | Experimenter Effects | The extent to which the study's results are limited to the individual(s) implementing the independent variable. |
| 8. | Pretest Sensitization | The extent to the study's results are limited to situations where only a pretest is used. |
| 9. | Posttest Sensitization | The extent to the study's results are limited to situations where only a posttest is used. |
| 10. | Interaction of Time of Measurement and Treatment Effects | The extent to which the effects of the independent variable on the dependent variable will maintain through time. |
| 11. | Measurement of the Dependent Variable | The extent to which the generalizability of the study's result are limited to the particular dependent measure used. |
| 12. | Interaction of History and Treatment Effects | The extent to which the study's results can be generalized to a future time period. |
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1. Martella, Ronald C., Nelson, Ronald, & Marchand-Martella, Nancy C. (1999). *Research Methods: Learning to Become a Critical Consumer*. New York: Allyn & Bacon.