

Design, Sampling, Validity & Explanatory Power

Research Objectives	Most Common Theoretical Application	Sampling Approach	Internal Validity	External Validity	Explanatory Power
Experiments & Quasi-Experiments					
Show direct cause and effect; show causality	Theory testing	Usually volunteer or random with criteria for selection used to reduce effects of non-experimental factors or variables. Random assignment is critical for experiments.	Strong internal validity because study subjects are subjected to an intervention or treatment.	Usually good theoretical generalizability, and exhibits statistical generalizability with regard to those members of the theoretical population who meet the screening criteria that were used. Results cannot be generalized to test subjects who did not meet the screening criteria used in sample selection.	Explanatory power can be low because the design requires eliminating many non-experimental variables. However, if the theory is predictive and hypotheses are well formulated, explanatory power can be very high.
Longitudinal and Cross-Sectional					
Establish linkages; show relationships between variables	Theory testing or theory building	Relies on a statistically representative sample of the theoretical population.	Moderate to weak. Often relies on correlation to indicate causal linkages.	Rests largely on statistical generalizability. External validity is high if the sample was statistically representative of the theoretical population. Any sampling bias will greatly reduce external validity.	Inclusion of several variables can make for good explanatory power, but the nature of the linkages between variables may be poorly established.
Case Study					
Explain existing outcomes or differences	Theory building	Cases are selected based on the outcome or dependent variable . Often, but not always, relies on purposive sampling. Cases are often selected to maximize explanatory power.	Moderate to strong internal validity but internal validity is highly dependent on adequacy of case selection.	Usually rests on theoretical generalizability. If purposive sampling is used, statistical tests can be performed, but the results cannot be generalized beyond the sample. Theoretical generalization is usually high if case selection was based on adequate <i>a priori</i> criteria.	Can have strong explanatory power because the number of relationships that can be examined is high. However, depends greatly on how well the design was executed, including sampling.