Quasi-Experimental Designs, pp. 34-64, Campbell and Stanley

Quasi-experimental designs are applicable to settings where the experimenter has a perfect control over scheduling of data collection procedures (e.g., the when and the whom of measurement) but lacks the full control over the scheduling of experimental stimuli (the when and to whom of exposure and the ability to randomize exposures) which makes a true experiment possible. This lack of control in quasi-experiment dictates that one must in interpreting the results, consider in detail the likelihood of uncontrolled factors accounting for the results. The more implausible this becomes, the more valid the experiment. The designs in general are believed to be sufficiently probing, however, to be well worth employing where more efficient probes are unavailable.

7. Time-Series Experiment

O_1 O_2 O_3 O_4 X O_5 O_6 O_7 O_8

The essence of the time-series design is the presence of a periodic measurement process on some group or individual and the introduction of an experimental change into this time series of measurements the results of which are indicated by a discontinuity in the measurements recorded in the time series. The test of significance in the effect of X concerns intercept and slope of the time series measurements before and after the treatment - test of linear fit to the data.

8. Equivalent Time-Samples Design

X_1O X_0O X_1O X_0O

The design can be seen as a form of the time series experiment with the repeated introduction of the experimental variable, and is most useful where the effect of the experimental variable is anticipated to be transient or reversible character.

Tests of significance deals with two dimensions of generalization: across occasions and across persons. If only one or two repetitions of each experimental condition are involved, sampling errors of occasions may be large or the control of history will be poor. Generalization across persons depends on the size and the representativeness of the sample. T-test or ANOVA may be used to test significance.

9 Equivalent Materials Design