

A Checklist for Planning Experiments

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Dean and Voss,

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The steps in the following checklist summarize a very large number of decisions that need to be made at each stage of the experimental planning process. The steps are not independent, and at any stage, it may be necessary to go back and revise some of the decisions made at an earlier stage.

CHECKLIST

- (a) Define the objectives of the experiment.
- (b) Identify all sources of variation, including:
 - (i) treatment factors and their levels,
 - (ii) experimental units,
 - (iii) blocking factors, noise factors, and covariates.
- (c) Choose a rule for assigning the experimental units to the treatments.
- (d) Specify the measurements to be made, the experimental procedure, and the anticipated difficulties.
- (e) Run a pilot experiment.
- (f) Specify the model.
- (g) Outline the analysis.
- (h) Calculate the number of observations that need to be taken.
- (i) Review the above decisions. Revise, if necessary.