
W. PAUL VOGT

DICTIONARY OF
STATISTICS &
METHODOLOGY

A NONTECHNICAL GUIDE
FOR THE SOCIAL SCIENCES

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E D I T I O N



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Exploratory Factor Analysis *Factor analysis conducted to discover what *latent variables (factors) are behind a set of variables or measures. Generally contrasted with *confirmatory factor analysis, which tests theories and hypotheses about the factors one expects to find.

Exploratory Research Said of research that looks for patterns, ideas, or hypotheses, rather than research that tries to test or confirm hypotheses.

Exponent A symbol written above and to the right of another symbol to indicate how many times it should be multiplied by itself. The exponent 3 in the expression 7^3 says to multiply 7 by itself three times, or $7 \times 7 \times 7 = 343$. See *power.

Exponential Growth Loosely, very rapid growth; as during an economic crisis, the rate of inflation might double every month from 2% to 4% to 8% to 16% to 32% to 64% from January to June.

Exponential Smoothing Statistical techniques in *time-series data used to give more *weight to more recent data. Exponentially weighted *moving averages are used to accomplish this.

Ex Post Facto Explanation (or Hypothesis) An explanation about what the facts “will” look like offered *after* you have collected them. This is legitimate in *exploratory research. In other circumstances, it can be a dubious practice.

Ex Post Facto Research Design (a) Any investigation using existing data rather than new data gathered specifically for the study. Causes will be studied after (post) they have had their effect. (b) Any *non-experimental research design that takes place after the conditions to be studied have occurred, such as research in which there is a *posttest, but no *pretest. Researchers often try to compensate for the lack of a pretest or *baseline data by *matching subjects or otherwise *controlling for variables that might have influenced outcomes.

Externalities Unintended, incidental, or external outcomes or effects—usually economic effects. For example, one of the externalities of a honey farm is that the bees will pollinate neighboring plants. An externality of a new shopping mall in a town could be increased traffic congestion.

External Reliability See *reliability.

External Validity The extent to which the findings of a study are relevant to subjects and settings beyond those in the study. Another term for *generalizability.

