



## **External Validity** <sup>[1]</sup>

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External validity is one the most difficult of the validity types to achieve, and is at the foundation of every good experimental design.

Many scientific disciplines, especially the social sciences, face a long battle to prove that their findings represent the wider population in real world situations.

The main criteria of external validity is the process of generalization <sup>[3]</sup>, and whether results <sup>[4]</sup> obtained from a small sample group, often in laboratory surroundings, can be extended to make predictions about the entire population.

The reality is that if a research program has poor external validity, the results will not be taken seriously, so any research design <sup>[5]</sup> must justify sampling <sup>[6]</sup> and selection methods.

## **What is External Validity?**

In 1966, Campbell and Stanley proposed the commonly accepted definition of external validity.

“External validity asks the question of generalizability: To what populations, settings, treatment variables and measurement variables can this effect be generalized?”

External validity <sup>[7]</sup> is usually split into two distinct types, population validity <sup>[8]</sup> and ecological validity <sup>[9]</sup>, and they are both essential elements in judging the strength of an experimental design.

### Generalization in Research

## **Psychology and External Validity**

### **The Battle Lines are Drawn**

External validity often causes a little friction between clinical psychologists and research psychologists.

Clinical psychologists often believe that research psychologists spend all of their time in laboratories, testing mice and humans in conditions that bear little resemblance to the outside

world. They claim that the data produced has no external validity, and does not take into account the sheer complexity and individuality of the human mind.

Before we are flamed by irate research psychologists, the truth lies somewhere between the two extremes! Research psychologists find out trends and generate sweeping generalizations [3] that predict the behavior of groups. Clinical psychologists end up picking up the pieces, and study the individuals who lie outside the predictions, hence the animosity.

In most cases, research psychology has a very high population validity [8], because researchers take meticulously randomly select groups [10] and use large sample sizes [11], allowing meaningful statistical analysis.

However, the artificial nature of research psychology means that ecological validity [9] is usually low.

Clinical psychologists, on the other hand, often use focused case studies [12], which cause minimum disruption to the subject and have strong ecological validity. However, the small sample sizes mean that the population validity [8] is often low.

Ideally, using both approaches provides useful generalizations [3], over time!

## Randomization in External Validity and Internal Validity

It is also important to distinguish between external and internal validity [13], especially with the process of randomization, which is easily misinterpreted. Random selection [14] is an important tenet of external validity.

For example, a research design [5], which involves sending out survey questionnaires [15] to students picked at random, displays more external validity than one where the questionnaires are given to friends. This is randomization to improve external validity.

Once you have a representative sample, high internal validity involves randomly assigning subjects to groups, rather than using pre-determined selection factors.

With the student example, randomly assigning the students into test groups, rather than picking pre-determined groups based upon degree type, gender, or age strengthens the internal validity.

## Work Cited

Campbell, D.T., Stanley, J.C. (1966). Experimental and Quasi-Experimental Designs for Research. Skokie, IL: Rand McNally.

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