Levene's Test for Verifying Homoscedasticity Between Groups in Quasi-Experiments in Education

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Abstract:

One of the most used quantitative research designs in the educational field is the quasi-experiment with an experimental group and a control group. Its widespread use can be explained, on one hand, by the fact that this design offers greater internal control than pre-experimental designs, which lack a control group. On the other hand, it poses fewer methodological challenges compared to true experiments, whose operational demands often exceed or do not align with the natural behavior of groups in educational populations. Given its prevalence in research studies, it is important to highlight that one of the weaknesses of this design lies precisely in the determination of the treatment and control groups. These groups are often selected based on the researcher's convenience or even inferred through common sense, that is, without a scientifically valid criterion. To address this issue, this article presents Levene's test as an option for verifying homoscedasticity between these two groups, which can contribute to methodological rigor in this aspect that substantially impacts the internal validity of the research findings.

Keywords:

Quasiexperiment; Internal validity; Levene test; Homoscedasticity.