

# Inference for samples from small populations – Frequentist or Bayesian solution?

Soukup Petr<sup>1\*</sup>

<sup>1</sup> Faculty of Social Sciences, Charles University, Czech Republic

## **Briefly Explain Your Question (max. 100 words)**

Some research questions are related to very small populations (e.g. consisting of hundreds units). Classical (frequentist's) statistical tests usually give statistically insignificant results and "solution" can be reached via implementation of finite population correction (easy for t-tests, chi-square tests, correlation, regression and more complicated for ANOVAs). Software usually does not offer these alternatives. Alternative solution can be made by Bayesian approach. But this approach is not without difficulties. How we can specify apriori distribution for our estimates? Usually we have some information for big population, but for small one is missing. Is it appropriate to use this apriori?

## **Scientific field(s) of the author(s)**

**Social science statistics, sociology of education**

## **Relevance to conference theme (max. 50 words)**

The small population samples are usually not discussed in spite of the fact that its usage is increasing. Frequentist's solutions as well as Bayesian's are very rarely applied in these occasions. Discussion about these solutions and implementation to main software packages is therefore important.

## **Keywords (max. 3)**

Small population, finite population correction, apriori distribution