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Letters to the Editor

Letters to the Editor will be confined to discussions of papers which have appeared in the Journal of Official Statistics and of important issues facing the statistical community.

Dear Sir,

Currie et. al. (1986) offer some sage advice to the academic community on the training of future government statisticians. I would like to add to their comments and address my responses not only to academia but also to government statistical agencies.

The first bit of advice seems so obvious that it hardly needs mentioning; statistical agencies should primarily recruit and promote persons trained in statistics. Surprisingly, this is not a common practice among the U.S. government agencies I have been associated with.

My second piece of advice may seem to contradict the first. Although a course in data analysis for potential government statisticians would certainly be helpful, this should not be regarded as a substitute for serious course work in the social sciences. (The irony here is that government statistical agencies correctly employ subject matter specialists, economists, sociologists, etc., to analyze data and then give them precious little analytical work to do.) When a statistician is called upon to analyze data, preferably as part of a team, (s)he should understand that statistics is a tool of, not a substitute for, science.

Conducting surveys and presenting results are the primary functions of most government statistical agencies. Consequently, there is a need (not always recognized) for recruits trained in survey sampling methods. Currie et. al. stress the importance of preparing students for the practical problems encountered in survey work. While I agree that theorem proofs should be de-emphasized, there is one domain left to advanced courses that I would introduce to all students preparing to work in the survey arena – model-based sampling methods.

Teaching design-based and model-based sampling side by side may strike some as a confusing and academic exercise, but I think the reverse is true. Inarticulated models are found throughout standard survey sampling practice and are a constant source of difficulty and confusion. Would it not be easier, for example, to explain stratification using a simple model than by a nearly incoherent combination of mathematics and hand waving?

Distinguishing between model and design-based inference would greatly aid communication between a survey statistician and a social scientist unfamiliar with sampling theory. At present, the social scientist assumes there is a model whenever (s)he hears the term "unbiased," while the statistician understands the same term as a property connected with repeated sampling.

In a nutshell, I have three suggestions.

1. Government statistical agencies should hire and promote more statisticians and fewer social scientists.
2. Statistics students interested in working for a statistical agency should be encouraged to take upper level social science courses and learn to respect the work of social scientists.
3. Statistics departments should offer more courses in survey methodology (as Currie et. al. suggest) and teach model-based methods in addition to design-based theory.

Reference

Currie, S.G., Gough, J.H., Hole, G.J.C., Krotki, K.P., Lussier, R., and Maranda, F. (1986): Preparing Mathematical Statisticians for Statistical Agencies. Journal of Official Statistics, Vol. 2, No. 3, pp. 315–328.

Yours truly,

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