

I think this is an interesting article, and follows in the same line of several recent articles on the subject that the authors cite (Ellison & Dennis; Hobbs & Ogle).

Minor points:

1. I'd note that the authors have the year wrong for Ellison & Dennis (it's 2010, not 2009:

http://www.webpages.uidaho.edu/~brian/reprints/Ellison_and_Dennis_Frontiers_in_Ecology_and_Environment_2010.pdf)

2. Your result on line 124 (disconnect between mathematics and modelers) makes me think that the paper might benefit from some expanded introductory material differentiating "mathematics" from "statistics". Perhaps even a table highlighting a few of the similarities / differences? My rationale is that in many universities in North America, these disciplines are not united in a single department, but split (both physically, and culturally, between mathematical "theorists" and "applied" statisticians). So perhaps those that identify more as mathematical see themselves as more theory-based rather than applied modellers?

3. I think that it's a bit tricky to lump knowledge of R with "understanding all steps of the analysis" (line 222). In some ways R could be seen as point-and-click too – for instance, while many grad students might be able to use `glm()` to do a Poisson regression, a fraction of those would be able to write down the likelihood and use `optim()` to get the same result.

Major point:

After downloading the data from the SI, and doing some basic summary analyses, I think that the authors missed an opportunity to report one of the major statistically significant findings that their survey shows. Specifically, there's a large gender effect, both in how the sexes tend to perceive themselves (Figures from my analysis below). This is particularly true at the extremes, with males giving rating themselves higher and more involved than females (are men actually better trained, or do they just inflate their abilities?). Why does this matter? In designing curriculums, it seems that engaging women in math is especially important – as your study shows, women self-rate themselves lower, but also are much less satisfied with the overall math / stats curriculum than men:

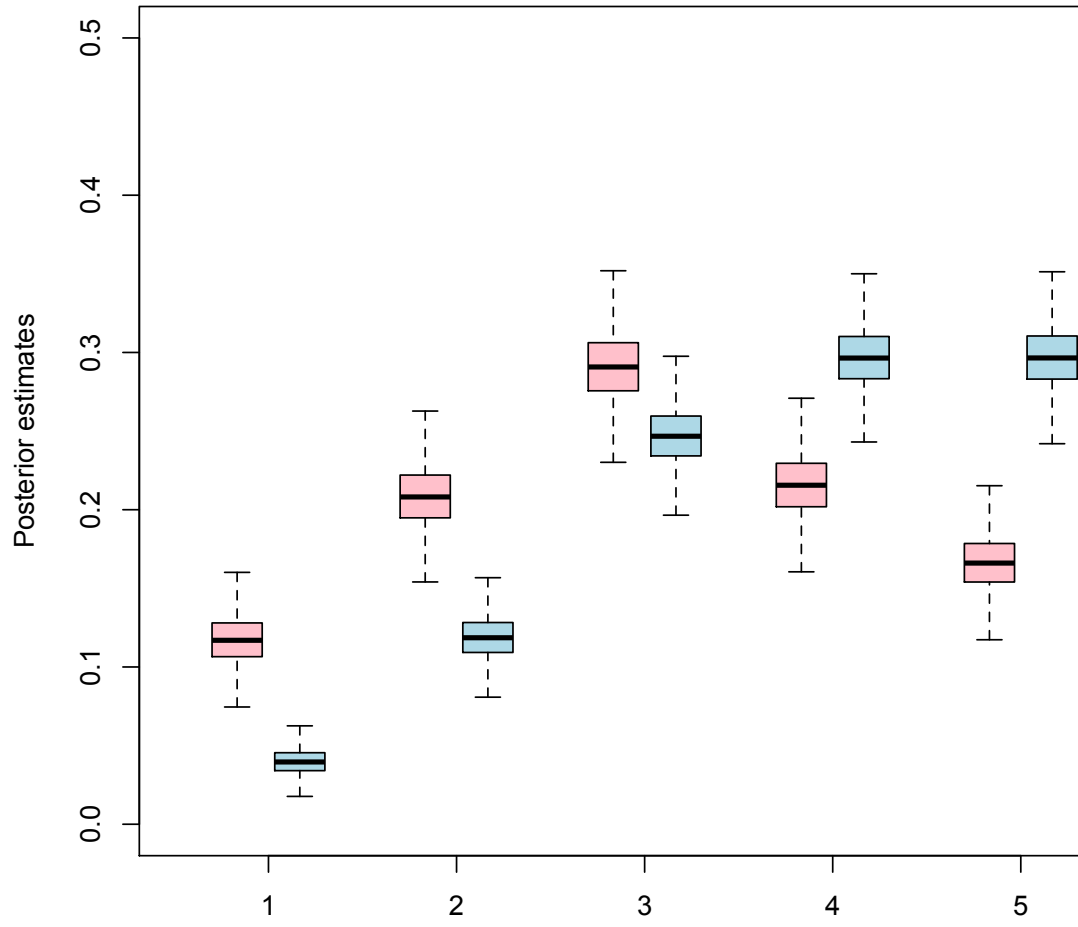
	Satisfied	Unsatisfied
Male	158	363
Female	82	319

Doing a Bayesian analysis, the 95% CIs between the groups don't overlap (21% of women satisfied, 95% posterior credible intervals = 16.6-24.9 versus 30% of men, 95% posterior credible intervals = 26.4-34.2).

This is also probably important in the way that recent studies have revealed minor gender biases in the sciences, <http://www.pnas.org/content/109/41/16474.full>

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Question 1: feeling toward using equations



Question 2: process of ecological modelling

