Re: Statistical Analyses of Non−Static Group Question

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- *From*: Doug Morse <morse@xxxxxxxx>

- *Date*: Sun, 12 Aug 2007 04:12:40 +0000 (UTC)

Hi Callahan,

OK, a few more questions if that's OK, and then hopefully I can start being useful... :)

1. First, one question I should have thought to ask right off: What's the typical sample size and range? That is, for each month's summary, how many active participants are there, how many inactive ones, and how have those numbers varied over time? This might become fairly important in terms of deciding what kinds of analyses are possible or feasible.

2. Second, have you been doing any statistical analyses on this data already? I presume not, but if you have a direction you've been heading already, I should know that.

3. Third, based on what you've written so far, I couldn't identify any within− or between−participant differences or manipulations. Put differently, it seems like there's just one group of participants, and that they are all experiencing the same thing and responding to the same measures. Is this correct?

I think that's it for questions. It sounds like what you have in place is working well for you −− up to the limits of the approach, and it seems you've done a fine job identifying those limits. I'm not sure that "statistics" per se is will be the fix to those limits, but it may might play some role.

In considering all this, the idea of "usable or useful bundles of information" comes to mind. It's as if you have this stream of information coming in from each participant. A participant's information isn't terribly useful until enough and certain kind of it has accrued. Conversely, there can come a point in time where the information continuing to come in from a participant starts to become less useful, because it's no longer adding *incremental* benefit relative to what the participant has already contribute (and perhaps at times just the act of reporting activity is being conflated with more meaningful contribution?).

So, I'm wondering if the real "fix" here is to work on clarifying what it

means for the group as a whole to be performing well. It seems as though there might be two (or more) things at play here that, once conceived of more distinctly, might open the doors to figuring out how to best proceed. Specifically, I'm wondering if more clearly separating "reporting requirements" for being in the product testing program from successfully making a "unit of contribution" to the program might be helpful. This is not to say that one is completely excluded from leading up to the other, but perhaps only up to a certain extent. In other words, I would think that participants reporting their usage (or lack of usage) of the product is in and of itself important, and if they do just that, they are making a contribution to the overall effort, and thus ought earn at least a few "contribution points" each reporting cycle just for that. To earn contribution points beyond this basic level, though, they will need to have contributed additional meaningful information and, in particular, not be just repeating what they've been saying before. Of course, this might be very contingent on whether they encountered any problems with the product −− something probably not under their control. So, I would imagine too that it's important not to penalize or score poorly a participant just because he or she was "unlucky" enough not to have had any problems with the product. :)

I could keep going, but I'll stop here −− no need to keep elaborating if I'm not on the right track. Is what I'm saying in these last 2−3 paragraphs making sense and resonating in any way? If so, great, and we can keep moving forward from there. If not, then, if you can, let me know what's "off" about the direction my thinking is now headed.

The more I consider all this, the more I'm starting to think that statistics isn't so much the answer as is determining the right way to conceive of and organize the data. As odd or simple as it may sound, statistics −− for the most part −− is really just a tool for knowing how and when it's OK to say that two numbers are different from each other, and that these differences are "true" and not due to chance or some measurement error. Best I can tell, these don't seem to be the kind of issues blocking your way forward.

Hope this helps, and I look forward to hearing your response.

Cheers!
Doug

On Thu, 09 Aug 2007 21:01:39 −0700, gwcallahan1@xxxxxxxxxxxx <gwcallahan1@xxxxxxxxxxxx> wrote:

> The participants of program provide product testing feedback in various forms such as problem reports, status reports, surveys, and forum discussions. Each from of feedback is weighted with respect to its importance to the program. On a periodic basis (monthly) each participant's feedback contribution is counted and weight adjusted to produce a score. A mean is calculated based only on those participants

that contributed and a rating is awarded based on the participants score relative to the mean. Non−contributors automatically receive the lowest possible rating for the period.

The participants for the program are largely employees of the company that produces the product; only a few outside participants are allowed for security reasons. Many of the participants are intimate with particular aspects of the product, however very few have complete knowledge. The vast majority are simply users of the product with a layman's understanding of how the product works.

The purpose for measuring participation is manifold and all closely interrelated: 1) to ascertain that the product is actually being used and tested, 2) to weed out those who are simply taking advantage of the benefits of the program without complying with the requirements, 3) to manage resource allocation (placing the product in the hands of those who will comply with the program requirements versus those who won't), and 4) to provide some form of feedback to the participants in hopes of encouraging those who are seriously under−performing to do a better job.

While it's fairly simple to understand how well a particular participant is performing on a periodic basis, it's not so easy to determine how well the group is performing due to the dynamic makeup of the group (as described in my previous post). I am hoping there's a way to make statistical adjustments so that I can say with some amount of certainty whether the performance of the group is better or worse and by how much.

I hope provides better background on the problem.

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