

Re: Hidden information question

Source: <http://sci.tech-archive.net/Archive/sci.stat.math/2006-05/msg00826.html>

- *From:* "Reef Fish" <Large_Nassau_Grouper@xxxxxxxx>
 - *Date:* 30 May 2006 21:41:01 -0700
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Nigel wrote:

shiling99@xxxxxxxx wrote:

Reef Fish wrote:

Jerry Dallal wrote:

Schizoid Man wrote:

Several coworkers would like to know their average salary. How can they calculate it, without disclosing their own salaries?

It's perhaps a semantic thing, but in the scheme proposed by you, and earlier by xhos. everyone disclosed their own salaries except YOU, who thinks you are smarter than the rest of them.

The proposed scheme is bogus.

If YOU can play the game of adding a random number to YOUR salary, then assuming that you are working in a think-tank that everyone can come up with the same idea, and adjust the average from his OWN fake noise (random or not is irrelevant).

Re: Hidden information question

That is, if EVERYONE enters $S_i + E_i$ where E_i is known only to person i , then nobody will ever know the true average salary. In order for the scheme to work, one has to make the tacit assumption that there is ONE, and ONLY ONE, smart donkey in the group, who thinks he is smarter than the rest, and the rest is indeed as dumb as he thinks by telling the truth of their salary when you think you are smart enough to fool them.

Even if everyone adds his noise as $S_i + E_i$ as long as E_i is independent of all S_i $i=1,2,3,.. n$

or more precisely,

$$E(E|S)=0;$$

The average will be a unbiased estimate. For efficient estimate the second moment assumption may be needed.

This reply by Schizoid Man is commensurate with the nonsense of the problem posed.

What I still find puzzling is HOW Jerry Dallal and xhos not only thought the problem was legitimate, but came up independently with the same bogus solution that is silly under ANY reasonable assumption,

I think you need to ask why the coworkers want to know their average salary. I can think of scenarios which would make it beneficial for the coworkers to prefer inflated figures for their salaries.

That only adds other dimension of silliness to the problem. Why would the coworkers WANT to know the average salary? How would that information help them (as an individual who knows his own salary), in any way, especially since the AVERAGE is almost NEVER used as location measure of the "center" of any salary distribution, because of its over-sensitivity to large outliers in a skewed long-tail

Re: Hidden information question

distribution?

What's the redeeming value of the PROBLEM? Never mind the solution.

— Bob.

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