

## DISCUSSION

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I am pleased to be a discussant today and I certainly enjoyed reading and learning from both of these very interesting papers.

In my brief remarks, I will first address the paper "What Is Survey Quality: Back to the Future" by Ron Fecso. I found this paper stimulating and certainly germane to an important topic ... improving survey quality.

Ron's paper addresses four questions:

1. What is survey quality?
2. How good (or bad) is survey quality?
3. How can survey quality be improved?; and,
4. What is management's role in all of this?

In answer to the first question, Ron adapts the ASQC definition to define survey quality as:

The totality of features and characteristics of a survey that bear on its ability to satisfy given needs.

This definition seems reasonable to me, although I would emphasize the latter part of this definition: "...its ability to satisfy given needs." This ties the concept of survey quality to intended use.

Thus, efforts to improve survey quality must focus on improving the ability of the survey to satisfy given uses. This implies, in turn, that we have a good understanding of what are the uses of our data.

A shorter definition of quality might be "fitness for use."

If quality is the ability to satisfy given needs, then the question of how good or bad is survey quality is really a question of how good or bad is the ability of a survey to satisfy given needs.

In the paper, there is a strong implication that survey quality is not very good ... perhaps declining ... certainly in need of improvement. In fact, Ron states that he has found several of us having this perception.

I find this perception of declining survey quality to be somewhat vague. In terms of the definition of survey quality, this perception implies that the ability of surveys to satisfy given needs is deteriorating. This may or may not be true. But the paper gives no evidence either way. Determining whether or not survey quality is declining requires more than a polling of opinion.

I mention this not to be argumentative, for I too am interested in continually improving survey quality. However, I think it is important to more fully understand exactly what it is we are attempting to improve. And that is, the ability of a survey to satisfy given needs. In this paper, no particular survey is specifically addressed, other than in a rather philosophical way. Can we talk about improving survey quality without discussing uses of the survey? The definition ties them together.

We must understand what these uses are. We may want to improve on minimizing or eliminating

various sources of nonsampling error such as coverage error, content error, error due to nonresponse, and the like. But these concerns for improvement must be tied more concretely to the use or uses to which the data are to be applied.

A useful way of thinking about survey quality is to ask these two questions: 1) For those survey characteristics which we have been measuring for years, are we measuring them as well today as we did years ago?; and 2) Are we measuring today what needs to be measured as well as we measured what needed to be measured in the past?

The answer to the first question is, arguably, "more or less." This certainly does not imply there is no room for improvement, but only that survey quality in our historic surveys is probably about the same as it always has been.

The answer to the second question is "probably not."

If you are in doubt on the second answer, think of the various industries of the rapidly-growing services sector of the economy for which we have little or no data.

This way of thinking about survey quality combines the notions of "are we doing things right?" with "are we doing the right things?."

The final two questions addressed in Ron's paper: "How can survey quality be improved?" and "What is management's responsibility in all of this?" lie at the heart of the issue on improving quality.

Deming, Juran, and other highly-respected experts on quality improvement have given us answers to these two questions. Dr. Deming emphatically states that we need never ask again how to improve quality and productivity ... his 14 points tell us what to do.

Many of us in survey organizations have studied what Deming and others have to say regarding quality improvement and management's role in it. I think we have been far less successful in implementing these ideas than we would like to be.

Some reasons for this, in my opinion, have less to do with not wanting to improve quality than with not knowing how to improve quality. I think we all want to improve quality, including top management. Who can be against it? It's apple pie. But how do we do it?

Dr. Deming states that it is possible for someone to know everything about their job except how to improve it.

Continual improvement of quality requires knowledge of how to improve. That knowledge is what Deming and others are trying to spread in this country. We need to learn how to apply this knowledge to surveys.

In his paper, Ron has taken quality improvement ideas from Deming and others and has attempted to focus these ideas and some of his own on survey quality. I think this is the value of the paper ... focussing discussion on how the new philosophy on quality improvement can be applied to surveys. In this regard, the

paper makes a worthwhile contribution.

One thing I would have liked to have seen in this paper, however, and I propose it as an extension for the paper, is evidence that the ideas proposed by Ron are "tried and true" and "alive and well" in real-life surveys at NASS.

I would like to have seen the evidence of quality improvement in actual surveys. That is, show us the improved ability in an actual survey to satisfy given needs.

I would also like to see supporting evidence that the improvement was due to implementation of the ideas presented in the paper.

If we are to make the transition from new quality philosophy to new quality practice, many of us in the survey community would like to see more evidence of the success stories that may be occurring. Because, as I stated earlier, we are all interested in continually improving the ability of our surveys to satisfy given needs.

Let me now turn to the Folsom, Horvitz, and LaVange paper "The Design of Surveys Using Measurement Design Standards."

This paper aims to improve survey quality by reducing bias in survey estimates by routinely adjusting these estimates for measurement bias using information gained by some of the sample being collected according to agreed upon data collection standards.

Basically, the problem is how should we allocate a sample between two approaches:

an inexpensive, biased approach; and,  
an expensive, unbiased approach.

The authors answer this by considering a James-Stein type of estimator (used here as more of a type of composite estimator) and minimizing an appropriate cost function constrained by a requirement on the mean square error of the estimator.

The unique part of the paper is the call for the use of agreed upon measurement design accuracy standards in all survey designs to adjust for measurement bias.

I find this intriguing and potentially quite useful. The strengths of the approach proposed in the paper are evident and presented clearly. I like, at least theoretically, the idea of a "standard measurement design" being used to adjust estimates so as to provide greater accuracy, at least relative to the chosen standard.

In fact, I find myself wondering why we don't move more in the direction suggested by the authors. Without trying to throw cold water on what seems to be a good idea, let me give a few reasons which may partially explain why the approach suggested hasn't been as quickly or universally adopted as maybe it should be.

My first concern is the determination of the measurement design accuracy standards themselves. In their paper presented at the 1987 annual meetings, the authors state: "An accuracy standard is never absolute. A given

standard, in a sense, represents the consensus 'best' level to use for a given survey measurement factor to obtain the data required at the current state of the art."

In that same paper they go on to state: "It should not be expected that a given set of measurement standards for surveys is without bias. Nor should we expect that the quality of measurements will remain constant over time."

In this paper they state: "An accuracy standard for measurements in surveys can be defined as that level for a given measurement factor which can be expected to yield the least biased data at the current state of the art."

Clearly and correctly, the authors do not take the approach that the standards are absolute and without bias.

Rather, they argue that agreed upon design standards implemented in conjunction with conventional means, as addressed in the paper, would be helpful in reducing net bias in survey estimates.

And this point is where I have some slight reluctance. The measurement standards themselves are not necessarily bias free. Bias, while reduced, still remains in the advocated estimator.

This leads me to think that there is some higher form of standard measurement design leading to less bias, perhaps much less, and the standard I have chosen is not as clean and pure as I originally thought ... at least in terms of leading to significant reductions in measurement bias.

But this point is more along the line of: If I can't make it perfect, should I still make it better if possible? And I think the answer here is yes.

I think the authors cover this in their 1987 paper stating: "... those concerned with improving the quality of survey measurements should undertake research aimed at determining ways to improve upon the standards."

A second concern I have is that in many surveys we are primarily trying to estimate change; and, estimates of change may suffer less bias than estimates of level, which this paper addresses. This would be the case in estimates of change where the bias in the numerator may tend to cancel out with bias in the denominator.

In multiple-objective surveys for which the requirement is to estimate both change and level, as well as make comparisons among various domains, what would then be the optimal design with the approach suggested in the paper?

If estimates of change are the most important in such surveys, then the survey design concerns may be more concentrated on variance and less on bias. The result being less sample allocated to the "standard measurement design."

As I stated earlier, I like the general thrust of this paper and I think these ideas merit further discussion.