

SURVEYS

Surveys run the gamut from silly to serious, and from sloppy to scientific. There are some who argue that the social sciences' surveys are not "science" at all. Maybe they are right. However, avoiding the debate around the word "science", there is a difference between good surveys, which aim towards the ideals of rigor and science, and bad surveys.

So good surveys are carefully built with an eye towards validity, reliability, replicability, and generalizability. More specifically in terms of the survey design and process, below are five components of conducting a survey that will move you towards the scientific end of a survey continuum.

The surveys carried out by the Greens claiming to show 97% of scientists "believe in global warming" – whatever that means – are extraordinarily sloppy surveys that fail to meet, most if not all, the accepted norms of designing and carry out a good survey.

The Five Components of a Good Survey

1. Questionnaire design. Write questions that are direct, unambiguous, simple, and unbiased. Avoid leading questions. Think of each question as "measuring" something in a dispassionate way, rather than as eliciting an answer to a question you have.

2. Sampling. Define the "universe," which is the full target population you want to understand. Then consider ways to get a representative group of them into your survey. True random sampling is rarely feasible, but there are good alternatives to consider so long as you think carefully about representation.

3. Data collection. Lay out a systematic and careful process of finding respondents and asking them to fill out your survey. This is essential to avoiding bias and fraud. And unless you have spent many days mapping out your strategy, fast data collection will likely give you an unscientific mess that invalidates your findings.

4. Analysis. Make theory-driven and hypothesis-driven choices about how to calculate even the most basic statistics, including percentages and means. Decide ahead of time which groups or subgroups you should percentage against. Consider whether to weight your data to adjust for any sampling or data collection biases.

5. Reporting. Write neutral statements that convey the story of behind the data, and provide multiple data points to exemplify and prove that your statements are true. You also need to show, and reconcile, conflicting data points. Don't cherry-pick, and remember that "neutral" statements need not be boring—they just need to be true.

Amateur Surveys by the Greens or Us, Taken at a BBQ.

To understand some of the pitfalls of surveys, let us pretend to be taking a survey talking to all scientists, rather than guessing what scientists are thinking after reading 'extracts' of their work (See Reading 3.1.3.6, 3.1.3.8, and 3.1.3.9).

Us: “Do you believe in climate change?”

All Scientists: “Of course we do, the climate has been changing for billions of years”.

Us: “Sorry, I meant do you believe in global warming?”

All Scientists: “Of course we do, global warming and cooling are important parts of the climate, which has been changing for billions of years”.

Us: “Sorry, I meant do you believe Man has an impact global warming?”

All Scientists: “We don’t believe the word “impact” is an appropriate word. Man does have an effect, but that effect is trivial. Every modern appliance produces heat that has a temperature higher than the average global temperature of 15°C. So, every BBQ, stove, hot plates, tumble dryers, car, train and plane etc all have an effect, but it is trivial and cannot be measured. Every human has a body temperature of approximately 37°C which also has an effect. However, as the World’s population grew from one to seven billion, we could not measure the effect of those bodies heating 24/7. The effect is trivial.

Us: “Sorry, I meant to say does CO₂ have an effect on global warming?”

All Scientists: There are over thirty factors that affect global warming and cooling and probably more that we haven’t discovered yet. There are also a half a dozen feedback loops that either counter or reinforce temperature movements. Presently we cannot detect any effects of CO₂, but it might be a small contributor that is lost in all the interactions of all the other factors affecting global temperatures.

Us: Sorry I am new at this. I should have been a lot more precise in wording my question. To start again. Do all scientists believe that;

“Man’s CO₂ is causing catastrophic global warming?”

All Scientists: No, we don’t. There is only a small minority of scientists who believe man can cause a catastrophe with his small contribution to the total amount of CO₂.

Us: Thank you.

CONCLUSION

Whether you are a naïve individual with no experience in taking a survey, like most of us, or a Green deliberately trying to mislead us, the use and misuse of our language is very important.

Most, if not all, Green surveys are sloppy and are primarily used to deceive us. Great care should be taken before you let any survey influence your thinking.