

# Call for Responsible Data Science in National Discourse

May 24, 2016

People need to be able to trust data. This means there is a great responsibility on the part of those who collect, analyze, interpret, and report data, especially when it concerns matters of public interest.

We, the undersigned data scientists—engaged in mathematics, statistics, modelling, programming, analysis, and visualization—hold each other accountable to the highest standards of professional integrity and competence.

Recently, there has been public confusion on assertions of electoral fraud based on the analysis of data from election returns. In light of this, we make the following appeal:

- To those who analyze and interpret data:
  - to exercise prudence and nuance in the statement of their conclusions
  - to clearly cite the data sources and methodology used in their analysis
  - to subject their results to critical peer review, prior to and after publication

*“The first principle is that you must not fool yourself— and you are the easiest person to fool.”*

— *Richard Feynman*

- To those who report on results of data analysis:
  - to refrain from reporting claims at face value without careful vetting
  - to seek multiple independent assessments of the validity of the analysis and conclusions before publication
  - to report with proper perspective, context, depth, and nuance

*“Extraordinary claims require extraordinary evidence.”*

— *Carl Sagan*

- To those who read reports and claims based on data analysis:
  - to view statements made by experts with a healthy amount of skepticism and not automatically accept them as correct and valid
  - to look for multiple independent assessments before judging the correctness and validity of an analysis and its conclusions
  - to refrain from spreading unverified claims without sufficient critical evaluation

*“Don’t believe everything you read on the Internet.”*

— *Abraham Lincoln Meme*

As a community, we believe in the power of data to raise the level of national discourse— not only in the context of the electoral process, but in many other areas of public concern, including health, disasters, and security, among others. We welcome the greater availability of open datasets in the country and the opportunity to harness this data for the public good.

We recognize that with this power comes great responsibility. To be trusted to use data correctly and responsibly, we must raise the level of transparency and accountability within our own community. In the spirit of peer review, we have the duty not only to be careful in the work that we do, but also to be critical of the work of others.

Here, we assert that an inverted V-shaped graph of the difference of votes between vice-presidential candidates Marcos and Robredo, plotted against the percentage of votes transmitted, *does not amount to evidence of fraud*. Given that the votes came in from different regions at different times, the shape of the graph is, in fact, the expected pattern. Many individuals and groups carried out independent analyses and communicated technical and logical arguments arriving at this conclusion.

The ability to give and receive critical feedback, without personal malice, is a core value of the scientific culture, a value essential to the integrity of the scientific enterprise. This statement is made in this spirit— without ill intent toward any individual, but out of a sense of duty to the community.

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