

Amid Contentious, Confusing Political Environment, Statistics Holds Key for Trust, Integrity, Efficiency in Election Cycle

ASA Experts, Resources on Hand to Explain Complexities of Auditing, Polling, and Voter Behavior

ALEXANDRIA, VA (September 1, 2016) – Between accusations of irregularities during the primary elections, concerns about disenfranchisement and voter intimidation tactics and fears of hacking into electronic voting machines, the presidential election campaign season has been a source of contention and confusion for the public, prognosticators and policymakers, alike. Yet, statistics—the science of learning from data—can help maintain trust and transparency for voters, election officials and the process itself.

“Elections are an incredibly complex and powerful dynamic in American democracy, and voters deserve to know that the responsibility they take seriously proceeds with integrity,” said Jessica Utts, president of the American Statistical Association (ASA). “Whether it’s explaining differences between polling forecasts and Election Day results or how polls may be misinterpreted, statistics can help explain discrepancies and validate electoral processes and outcomes, thereby assuring greater levels of voter confidence in the entire system.”

Amid the talk, rhetoric and attacks on the electoral process, critical distinctions about what might go wrong, why and who is responsible are often ignored.

“Decades-long research tells us that ‘voter fraud’—when an individual who is not eligible to vote impersonates a legitimate voter at the polling booth—is essentially nonexistent,” notes Arlene Ash, professor and division chief of biostatistics and health services research at the University of Massachusetts Medical School. “Electoral malpractice, on the other hand, is quite common, and can take place in many forms, such as misleading ballot designs, computer malfunctions and security breaches, long voting lines, misleading information about polling locations, poorly maintained voting lists and overly aggressive voter list purges.”

“Claims of election fraud have long been part of our nation’s history, and so it’s possible that some may occur in present day,” says Philip Stark, professor of statistics and associate dean of mathematical and physical sciences at the University of California, Berkeley. “Paperless voting technology, which cannot be audited or recounted meaningfully, is used in 25% of the country. Most jurisdictions that do have paper records, however, do not check the results against the paper trail adequately, if at all. We need better methods to ensure the integrity of elections.”

Election Audits

One of the most effective methods for ensuring voter confidence in elections is to conduct post-election audits. Poorly marked ballots, computer glitches and voting system configuration errors can make machine vote counts diverge from voters' intentions. By comparing hand counts of randomly selected ballots with machine tallies, statistics can identify large sources of errors that can be targeted for future fixing and discern (from a smaller sample) whether a complete hand count would produce the same winners. In this way, election audits can both maintain integrity and save taxpayers money.

Experts in the area of election audits include the following:

- **Arlene Ash**, *Professor and Division Chief of Biostatistics and Health Services Research at the University of Massachusetts Medical School*
In December of 2000, she testified in the absentee ballot fraud case in Martin County, Florida. Ash was instrumental in leading the ASA's election auditing work and was head of the ASA's Scientific and Public Affairs Subcommittee on Electoral Integrity.
- **Mark Lindeman**, *Political Scientist Who Studies Public Opinion and Elections*
He presently lectures at Columbia University in quantitative methods and led the recent revision of the multidisciplinary textbook *Public Opinion*. Lindeman has extensively studied popular controversies in election forensics, such as the argument that exit poll results evince election fraud. An expert in the design of post-election vote tabulation audits, especially risk-limiting audits, he has published extensively about such audits (often in collaboration with Philip B. Stark) and has consulted pro bono with advocates and legislators in several states and the District of Columbia. He serves as chair of the Coordinating Committee of the Election Verification Network.
- **Walter R. Mebane Jr.**, *Professor of Political Science and Statistics at the University of Michigan, Ann Arbor*
His current focus is election forensics, which aims to develop statistical and computational tools for detecting anomalies and diagnosing fraud in election results. He has written papers on the 2000 presidential election, produced a report on the 2004 presidential election in Ohio for the Democratic National Committee and conducted analyses of election fraud in Russia and likely fraud in Iran's 2009 election.
- **Philip B. Stark**, *Professor of Statistics and Associate Dean of Mathematical and Physical Sciences at the University of California, Berkeley*
The originator of "risk-limiting audits," he has worked with California and Colorado secretaries of state and helped conduct risk-limiting audits in nearly 20 counties. Stark testified about election integrity before the California legislature and at trial in a contested election. He currently sits on the development team for the Travis County, Texas, STAR-Vote system, which combines auditability with end-to-end cryptographic verifiability.

Polling

When conducted scientifically, polls capture what a portion of the population thinks at a given moment in time. However, poorly constructed polls—ones with large margins of error that contain biased questions or are not conducted on randomly selected samples—can be misleading. As poll results are often highly touted or quickly dismissed by campaigns and frequently cited by media, the importance of understanding their purpose, results and limitations cannot be overstated.

“There are many potential sources of error in electoral polling,” notes Rob Santos, chief methodologist at the Urban Institute. “The technical explanations, however, mask fundamental ones—things like social and technological changes that affect how the public consumes polls and how pollsters conduct them—that are driving inaccuracies.” Santos gives the following advice about polls: “Much like we do with stock tips or sports picks, we should consider the source before trusting a poll.”

Experts in the area of polling include the following:

- **Rob Santos, Chief Methodologist at the Urban Institute**
Santos has more than 35 years of experience designing research and evaluation studies. His expertise includes qualitative and quantitative research design, sampling, survey operations and statistical analysis. He served as 2014 president of the American Association for Public Opinion Research (AAPOR) and is currently vice president of the American Statistical Association (ASA). He is a fellow of the ASA and recipient of its prestigious Founders Award.
- **David Morganstein, Vice President and Statistical Staff Director at Westat**
He specializes in the design and application of surveys and systems of evaluation, quality control, statistical analysis and estimation. He has worked with more than 50 organizations around the world in the teaching and use of statistical methods for quality assurance and improvement. He served as president of the ASA in 2015.
- **Mack Shelley, Professor and Chair of the Department of Statistics at Iowa State University**
His research interests include public policy, program evaluation, American politics, electronic governing, social statistics, multivariate methods, time series and forecasting, linear models and survey research methods. He served as co-editor of the *Policy Studies Journal* and associate editor of the *Journal of Information Technology and Politics*.

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About the American Statistical Association

The ASA is the world’s largest community of statisticians and the oldest continuously operating professional science society in the United States. Its members serve in industry, government

and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare. For additional information, please visit the ASA website at www.amstat.org.

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