

## **Significance – notes for contributors**

(revised 12/07/19)

Thank you for your interest in writing for *Significance* – a magazine and website all about statistics, in which we highlight the contribution statistics makes to our understanding of the world. We hope you find these notes of use in preparing your article.

We'll start by setting out our **mission statement**:

*Significance presents a statistical perspective on life around the globe. It challenges myths, provides a unique take on the stories of the day, and uses statistics to tackle society's most difficult questions. A data-driven world requires evidence-based thinking – and Significance is a showcase for the best of it.*

Our mission statement guides our approach to commissioning articles and sets the scope for the types of articles we are interested in publishing. In writing your article we ask that you adhere to the following **core principles**:

- Articles must be interesting, engaging and easy to read.
- Readers should finish your article knowing more about statistics, or the application of statistics, than they did before.
- Technical terms and mathematics should be kept to a minimum, and explained clearly where used.

Please keep our **audience** in mind while writing. Though the vast majority of subscribers to our magazine are professional statisticians, our goal is to not only inform and entertain these **core readers** but also to encourage a wider appreciation of statistics and the role it plays in society. As such, the **target reader** is someone with an interest in data, who knows some of the basics but is by no means an expert. Note that our articles are often shared with the media, particularly when they are of broad public interest, so submissions that are written in the most accessible way have the opportunity to reach a huge international audience.

What does this mean for you as a contributor? As set out in the last of our core principles, technical terms should be kept to a minimum and explained clearly where used. We recommend the use of **boxes** and **sidebars** for any detailed technical explanations that might otherwise distract from the flow of the main article.

We recognise that statistics is a complex area, and simple explanations of models, methods and processes are not always possible. In such instances, we ask that contributors explain the **underlying concepts** – using real-life analogies wherever possible – to ensure that readers of all levels are able to understand the work.

The following are **key pointers**:

- **Remember to tell a story.** It's not enough simply to describe a process.
- **We're a magazine, not a journal** – so avoid the formal structure of an academic paper.
- **The opening paragraph is everything.** A strong 'hook' at the outset is invaluable for grabbing a reader's attention, and a real-life anecdote that 'humanises' the subject and sets the context of what follows often works very well.
- **Your conclusion is equally important.** What do you want your readers to remember and think about once they've finished reading?
- **Articles must be original** and not under consideration for publication elsewhere –

though we welcome articles based on work in theses or in papers that have been submitted to or accepted by academic journals, provided the two are sufficiently different.

- **You can include tables, figures, images and photographs** but please make sure you have permission to use any material for which you do not hold the copyright.
- **End references are optional** but should be limited to five.
- And **don't rely on references to do the work for you**. The article should stand on its own, and readers should not be expected to go elsewhere to get the full story.

### Statistical content

The guidance above relates largely to writing style and approach. But what makes *Significance* unique is our marriage of storytelling and statistics – and getting the statistical aspects of your article correct is as important as telling an interesting and engaging tale.

Articles published in *Significance* will be vetted by an editorial board of statistical experts, and they will provide comments or questions that relate specifically to your article. But here is some general advice to keep in mind:

- Explain your data, quantity and quality of evidence, assumptions, methods, and models, and the limitations of your findings.
- Where estimates are made, be sure to quantify their accuracy, reliability, reproducibility, and validity.
- Write your conclusions carefully by ensuring that claims made or discussed are supported by the evidence provided.
- Keep mathematical details, such as symbols, notations and equations, to a minimum.
- Don't mistake correlation for causation. It's easily done, even if it's unintended.

### Technical words and phrases

As with all disciplines, statistics has its own set of technical words and phrases that will be immediately understood by those working in the field – and, as *Significance* is a magazine primarily written and read by statisticians, it might seem reasonable for contributors to use those words and phrases without explanation. However, the *Significance* Editorial Board does not share this view.

*Significance* aims to attract a broad readership, so contributors should always bear in mind that terms in common use in statistics may be misinterpreted by a non-specialist readership – “significance” being a notable example, but also terms like “confidence interval”, “critical value”, “estimate”, “likelihood” or “normally distributed”. Articles may also include terminology from a domain of application (e.g. medical: “risk of death”, “hazard ratio”) that may equally baffle statisticians working in other domains! Specific terminology should therefore be used carefully and flagged as such, or explained as necessary; novel or unusual meanings must be explained either within the text or in sidebars. The editor and reviewers may point out such issues and help devise suitable wordings.

### Example 1

“The difference between the two groups turns out to be small (8%), while the probability ( $p$ ) of observing a result at least as extreme as this under the hypothesis of no difference between the two groups is  $p = 0.003$  (that is, 0.3%). This  $p$ -value is statistically significant as it is below our pre-defined threshold ( $p < 0.05$ ). However, the  $p$ -value tells us only that the 8% difference between the two groups is somewhat unlikely given our hypothesis and model's assumptions. More research is required, or other considerations may be needed, to conclude that the difference is of practical importance and reproducible.”

## Example 2

“The data lead to a point-estimate – i.e. best-supported value – for the relative risk of death of 0.75. As values below 1.0 imply reduced mortality, that suggests the treatment is effective. But inevitably there is uncertainty in that estimate, summed up as a 95% confidence interval of (0.51, 1.10). As this interval includes 1.0, corresponding to no differential effect, the data are also consistent with the treatment being no better than care as usual. This does not mean that the new treatment is not effective: our study may just not have been large enough to provide more compelling evidence. Further studies are needed to reduce the uncertainty – and, we hope, support the possibility of a 25% reduction in mortality suggested by the point-estimate.”

On a related note, recently there have been calls to stop using the phrase “statistically significant” as there is widespread confusion about what it means and what it can and cannot tell us about research results. We will not automatically disallow use of the phrase; however, we will expect that readers are given an appropriate level of information to understand the relevance of this phrase in the context in which it is used.

For further thoughts on “statistical significance”, see [Does significance matter?](#)

## Data sources

The *Significance* Editorial Board requires that authors include within their articles any links and/or references to the sources of data, computer code and/or software and software packages on which their analyses are based. We understand that some of these sources may not be publicly available, whether for legal, ethical or commercial reasons. However, readers should still be told where the data come from, even if they are not able to access the data directly.

## Word counts

For our **In Brief** section: 500-1,000 words

For our **In Detail** section: 2,000-3,000 words

For our **In Practice** section: 1,000-2,500 words

For **website** articles: 500-1,500 words

## Submitting your article

Please supply articles in Word or Rich Text Format to [significance@rss.org.uk](mailto:significance@rss.org.uk). We do not accept submissions in LaTeX.

## Graphics

Charts and graphs can be an effective way of drawing in browsing readers. Authors must therefore ensure that all supporting figures are presented simply and neatly, are labelled correctly and clearly, and that accompanying captions are written to support the reader’s understanding of the visual material.

Charts and graphs should be supplied as Adobe Illustrator-compatible EPS files to allow our designers to update text and colour elements to fit house style. Editable PDFs are also suitable.

If you wish to use charts or graphs that are not your own work, please ensure that they are correctly sourced and referenced, and that you have permission to republish them from the original author or copyright owner. A letter or email confirming this permission is required.

All other images – those for general illustration purposes – will be sourced and paid for by *Significance*.

If you have questions that are not answered here, please email [significance@rss.org.uk](mailto:significance@rss.org.uk). We appreciate your interest in contributing to *Significance*.