
Unit 8: Data Analysis and Visualisation

Peer Response 3:

Collaborative Discussion 2: Case Study: Accuracy of information

In reply to Anda Ziemele

Peer response

by Andrius Busilas - Thursday, 27 March 2025, 5:30 PM

Hi Anda,

Thank you for engaging with the read and shared insights. Your initial post effectively underscores ethical issues in Abi's situation, particularly concerning p-hacking. The discussion offers a persuasive argument regarding the misuse of statistical methods and the impact of such practices on research integrity. However, a deeper exploration of ethical frameworks such as the ACM Code of Ethics and Professional Conduct (ACM, 2018) enhances the analysis of the ethical, legal, and social aspects of the case.

A key aspect of this ethical dilemma is the principle of honesty and transparency, as detailed in Section 1.3 of the ACM Code. Computing professionals are required to accurately represent their findings because selective statistical analysis can mislead consumers (Simmons, Nelson, & Simonsohn, 2011). Abi should avoid cherry-picking favorable results and provide a comprehensive and balanced analysis (National Academy of Sciences, 2017).

Thus, the legal consequences of misleading research should not be underestimated. Consumer Protection from Unfair Trading Regulations 2008 prohibits businesses from making false claims regarding products. If Abi's findings are misused, legal action can be taken against both him and the manufacturer (UK Government 2008). Computing professionals must ensure accuracy in preventing such repercussions.

Socially, the misrepresentation of statistical data can undermine public trust in research. As Ziemele noted, research misconduct can have extensive consequences.

Misleading nutritional claims have led to public backlash and stricter regulations (Nestle, 2018). Ethical integrity in statistical reporting is essential to maintain public trust.

Beyond reporting misconduct, Abi could proactively engage with regulatory bodies such as the Food Standards Agency (FSA) to ensure ethical compliance. Publishing full research in an open-access journal would also promote transparency and accountability (Ioannidis 2005).

In conclusion, while Ziemele's post provides a thoughtful discussion of p-hacking, incorporating ethical codes and legal considerations strengthens this argument. Ethical integrity is crucial in computing, especially when dealing with sensitive data that affects consumer health.

References

ACM (2018) ACM Code of Ethics and Professional Conduct. Available from: <https://www.acm.org/code-of-ethics> [Accessed 27 March 2025]

Ioannidis, J.P.A. (2005) 'Why most published research findings are false', PLoS Medicine, 2(8), p.e124. doi:10.1371/journal.pmed.0020124

National Academy of Sciences (2017) Fostering Integrity in Research. Washington (DC): National Academies Press (US). Available from: <https://www.ncbi.nlm.nih.gov/books/NBK475945/> [Accessed 27 March 2025]

Nestle, M. (2018) Unsavory Truth: How Food Companies Skew the Science of What We Eat. New York: Basic Books.

Simmons, J.P., Nelson, L.D. and Simonsohn, U. (2011) 'False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant', Psychological Science, 22(11), pp.1359-1366. doi:10.1177/0956797611417632

UK Government (2008) The Consumer Protection from Unfair Trading Regulations 2008. Available from: <https://www.legislation.gov.uk/uksi/2008/1277/contents/made> [Accessed 27 March 2025]