

Review of: "Intersections of Statistical Significance and Substantive Significance: Pearson's Correlation Coefficients Under a Known True Null Hypothesis"

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Potential competing interests: No potential competing interests to declare.

This paper presents an intriguing and clear study on the evolution of p-value distribution and the percentage of effect size errors under the null hypothesis. While the p-value distribution remains constant (following a standard uniform distribution, thereby maintaining a fixed type 1 error rate), the percentage of effect size errors decreases as the sample size increases. These ideas can enhance the effective application of statistical methodologies, encouraging the use of statistical significance in conjunction with other statistical methods and concepts, as well as the replication of experiments.

Below is a list of suggestions to improve the paper:

- The quality of all figures and tables could be improved (it is not asked to change the information or graphics, which are fine, just the quality of the images, as the letters are of very poor quality when printed).
- Method Section, first paragraph: "[N(0,1)]" should be replaced by "[N(0,1)]".
- Method Section, second paragraph: " $|r| = 0.10$ is small, $|r| \geq 0.30$ is medium, and $|r| \geq 0.50$ is a large effect size." could be replaced by something like " $|r| \leq 0.10$ is none, $0.10 < |r| \leq 0.30$ is small, $0.30 < |r| \leq 0.50$ is medium, and $|r| > 0.50$ is a large effect size." (which helps to understand the categories in the graphs shown in Figures 4, 9, 14, 19, and 24).
- Method Section, before Figure 2: " $(z_r \sim N(0,1))$ " should be replaced by " $(z_r \sim N(0,1))$ ".
- Method Section, before Figure 6: "0.28" should be replaced by "0.58".
- Method Section, before Figure 17: "0.10" should be replaced by "0.03".
- Method Section, before Figure 19: "(0.2%)for" should be replaced by "(0.2%) for".
- Discussion Section: "0.0 and |1.0|" should be replaced by "0.0, 1.0, and -1.0".
- Discussion Section: "propoer" should be replaced by "proper".
- Seems that National Academies of Sciences, Engineering, and Medicine (2019); SAS Institute Inc. (2011); and SAS Institute Inc. (2014) are not cited throughout the article.

