Did IS Researchers Over-rely on p-Value When Interpreting Statistical Analysis Results - Overview of Statistical Analyses Reporting Practices in Three Top IS Journals

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Abstract

In recent years, researchers from other disciplines (such as ecology and biology, psychology, education, counseling development, marketing, and agricultural education) have been discussing quantitative research results reporting practices. These researchers reviewed the reporting practices related to statistical significance tests in their areas of research, and reported that there is an over-reliance on p-value in statistical significance test: reporting p-value without reporting other measures: confidence intervals, power analysis, or effect size (such as correlation coefficient, Cohen f, r square). One similar review in the IS research has been published in ISR 2013. The paper only reviewed 12 papers involving large samples (n>10,000) in ISR and MISQ, we think a more comprehensive review of the IS research in top journals are warranted. According to researchers in other disciplines, even for the samples that are not very large, reporting other statistical measures are always recommended because these measures provide more information about the results.

Our study reviewed the statistic report practices for all journal papers of three top IS journals: ISR, JMIS, and MISQ from 2004 – 2014. For all papers that reported p-value, we identified whether they also reported effect size, statistical power, and confidence interval. There are 250, 242, and 240 papers in ISR, JMIS, and MISQ reporting p-values respectively, 88% or more of these papers reported effect size measure (ISR: 88%; JIMS: 89%, MISQ: 90%), but only 10% or below reported confidence interval (ISR: 4%; JIMS: 4%, MISQ:10% ), and only 9% or below reported statistical power (ISR: 4%; JIMS: 4%, MISQ: 9%).

Our study is about research methodology, but we could not find a track of research methodology in AMCIS. Therefore, we chose to submit our findings to the TREO talk. In our talk, we will present more information about our review, discuss the implications of our study for IS researchers, editors, and Ph.D. curriculum design, and get feedback from participants about our findings.