

University teams with journal publisher to detect and prevent citation manipulation

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Elsevier, a global information analytics business specializing in science and health, and Wageningen University & Research (WUR) announced today a collaboration using Elsevier's analytical capabilities to detect the

unethical addition of citations to scientific research papers. This first large-scale analysis of citation manipulation in journals is being presented at the 17th International Conference on Scientometrics & Informetrics (ISSI) in Rome, Italy.

Occasionally, adding citations to [scientific articles](#) during the peer-review process can contribute to improving the quality and integrity of research. For example, suggestions of additional citations by editors and reviewers may help authors avoid accusations of plagiarism, or give their paper more context. However, sometimes editors, reviewers or authors also add irrelevant citations, with the goal of increasing citations to certain researchers ("[citation](#) pushing") or to certain journals ("citation stacking"). Avoiding citation pushing is an acknowledged principle of good scientific research and has become part of scientific integrity guidelines, including the new Netherlands Code of Conduct for Research Integrity. Together, WUR and Elsevier have developed innovative analytical methods for detecting and preventing this form of scientific misconduct. The collaboration plays an important role in taking a quality-over-quantity approach to research output evaluation.

"Of course, scientific integrity in relation to publishing is bigger than citation stacking or pushing. Since the imperative to 'publish or perish' has become such an important factor in our [scientific community](#), it is important to safeguard all aspects of quality control of the publishing process," said Arthur Mol, Rector Magnificus of Wageningen University. "This is a joint responsibility for both the scientific and publishing communities, and is why we called for action.

"There is still more work to do however, and this is a promising first step. We are happy to work with Elsevier and any other interested parties in making the publication process fairer. We look forward to forthcoming steps in combatting citation pushing and stacking, by Elsevier as well as other journal publishers."

Reviewer manipulation of citations is rare, according to the results of the analysis of a total pool of 500,000 reviewers and their citations in Scopus.

"Although rare, even one case of citation manipulation can have a ripple effect on the scientific community. Detection is an important step in making sure that journal citations can continue to be trusted," said Philippe Terheggen, Managing Director STM Journals, Elsevier.

"Stemming from our efforts to support research in every way, I am just happy that we could together answer WUR's call for action on this form of misconduct, with our analytical capabilities. We plan to further expand the existing suite of tools we offer researchers to support research integrity and trusted information."

By analyzing 500,000 reviewers and their citations in Scopus, a distribution of normal citation patterns was determined. More than 270,000 reviewers were never cited in any of the papers they reviewed for Elsevier. In a subsequent more detailed screening of the 69,000 most prolific researchers that reviewed at least five publications with an Elsevier journal, 0.8 percent of reviewers were associated with suspicious citation patterns based on ≥ 50 percent citations to their papers having been added to submissions that they reviewed. It must be emphasized that these numbers do not always equal unethical behavior, in some cases there are good reasons for these added citations. For all reviewers with very suspicious citation activity, Elsevier is sharing the information with editors who have the expertise needed to assess the reviewer reports in detail. If editors find that reviewer citations are superfluous in several cases, the evidence is then shared with both the reviewer and their institute. This includes the number of citation additions suggested per article by a reviewer. Unless there is a very good explanation, they are no longer sent papers to review or welcome to sit on Elsevier journal editorial boards.

Now that Elsevier can detect citation manipulation in published papers, the next step is to prevent it earlier and before publication. Before reviewing submissions, reviewers of scientific research are now reminded that all citations that they request of authors must be genuinely relevant and manipulation is unacceptable. Using recommended methods from WUR, investigations are also underway to automatically detect and flag suspicious reviews to editors during the peer review process.

More information: papers.ssrn.com/sol3/papers.cfm?abstract_id=3339568

Provided by Elsevier

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