A comparison of different forward citation chasing tools for complementary searches for Cochrane systematic reviews

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Conflict of interest

I have no actual or potential conflict of interest in relation to this presentation.

Introduction

Forward citation chasing is the use of a citation index to retrieve references that cite a source.

Currently recommended as a complement to find all possibly relevant research for systematic reviews (SRs)

Recently, new tools have been developed to ease this task, but their performance has not been compared yet.

Objective

To estimate and compare the performance of different resources for forward citation searching in the context of conducting updates of systematic reviews (SRs).

As a secondary objective, we aim to explore how efficient a forward citation search strategy could be by itself as a way to update a SR, compared to a traditional boolean search strategy in electronic databases.

Methods

We included Cochrane SRs with at least two published versions

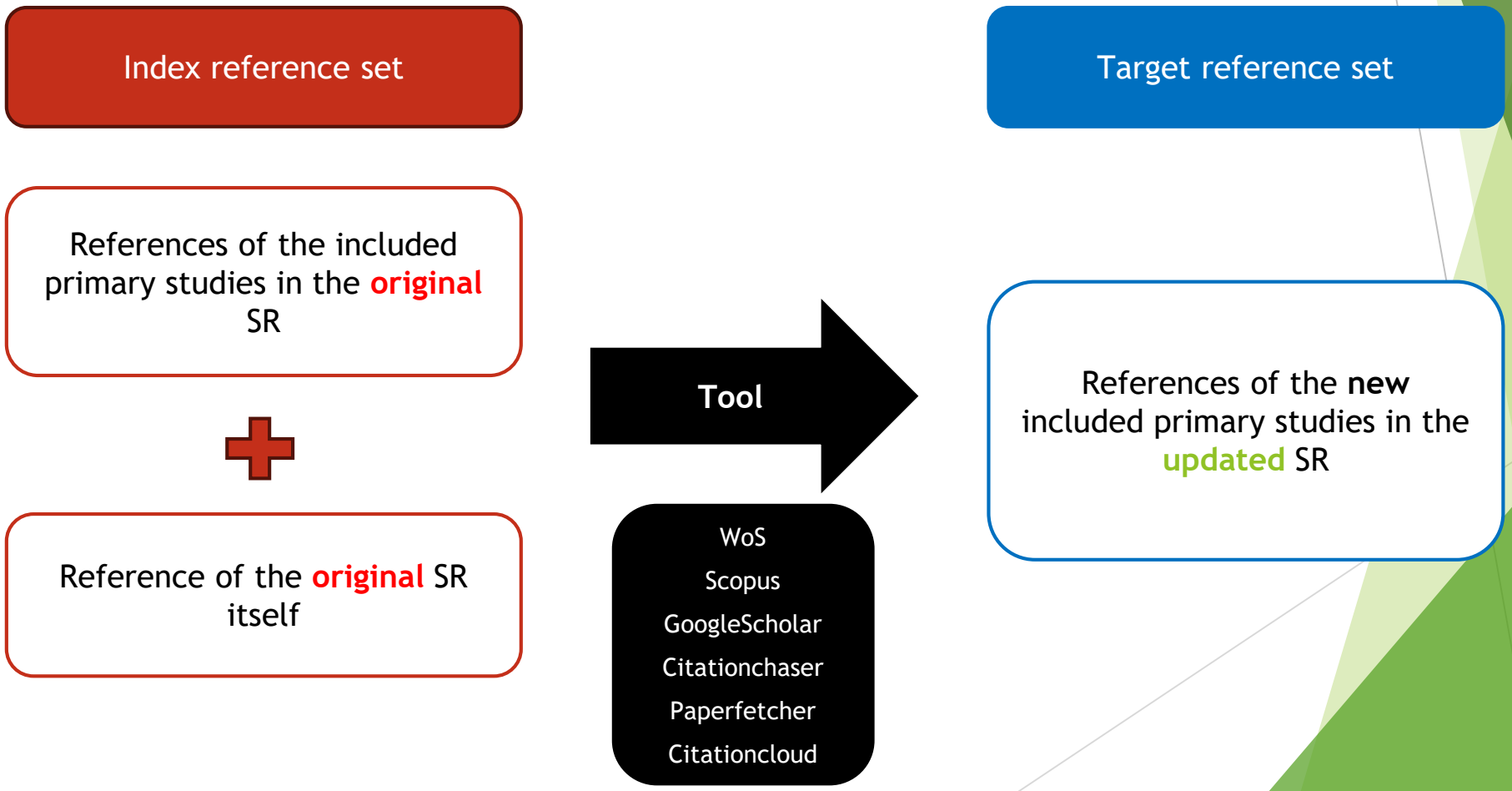
‘Original’ version: First version of the SR within the Cochrane Database of Systematic Reviews.

‘Updated’ version: Most recent version of the same SR.

The **‘original’** SR must have included at least one primary study.

The **‘updated’** SR must have included at least one additional new primary study in respect to the **‘original’** version

Methods


Index reference set
References of the included primary studies in the original SR
Reference of the original SR itself
Tool
WoS
Scopus
GoogleScholar
Citationchaser
Paperfetcher
Citationcloud
Target reference set
References of the new included primary studies in the updated SR

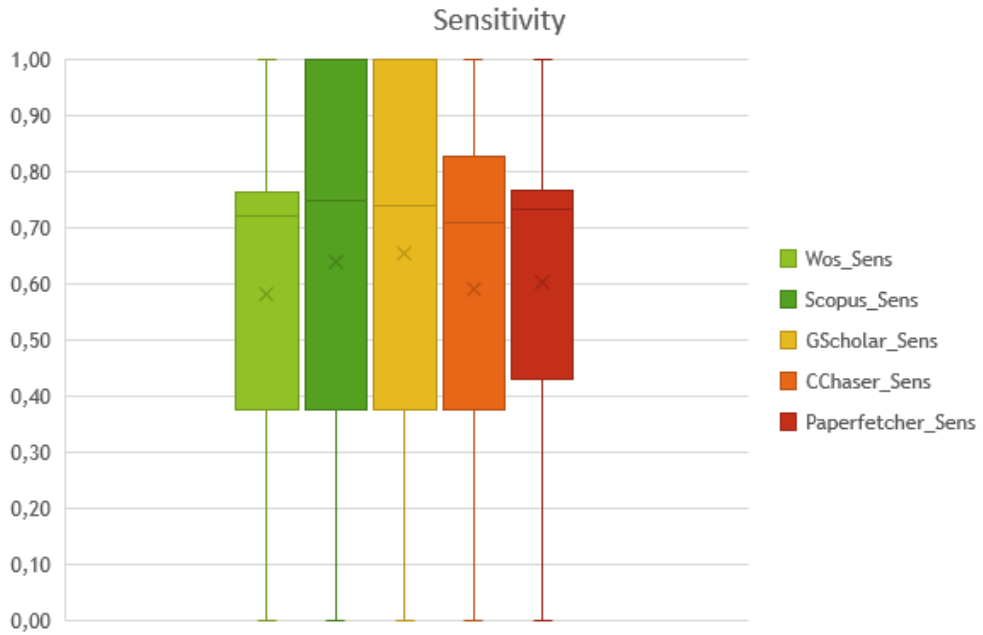
Results

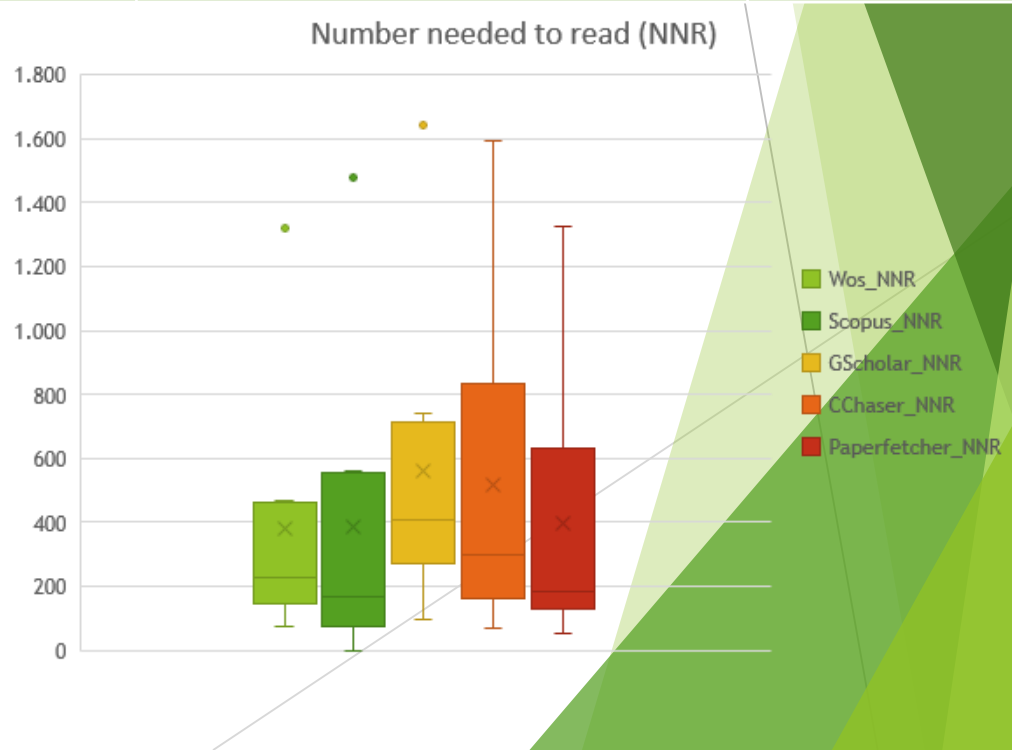
So far, 10 pairs of SRs analysed.

Median index reference set: 7 (range: 3 - 13)

Median target reference set: 4 (range: 1 - 11)

Tool	Mean sensitivity (95% CI)	Mean precision (95% CI)	Mean NNR (95% CI)
WoS	0.58 (0.34 - 0.82)	0.0041 (0.0011 - 0.0072)	382 (44.7 - 719)
Scopus	0.64 (0.37 - 0.91)	0.0046 (0.0007 - 0.0084)	423 (32.8 - 812)
Google Scholar	0.66 (0.38 - 0.93)	0.0026 (0.0005 - 0.0047)	563 (158.2 - 967)
Citationchaser	0.59 (0.35 - 0.84)	0.0037 (0.0006 - 0.0067)	516 (84.9 - 947)
Paperfetcher	0.60 (0.36 - 0.84)	0.0048 (0.0008 - 0.0087)	399 (39.1 - 759)





Discussion

- Google Scholar showed the best sensitivity, but the highest NNR.
- WoS showed the lowest NNR, although it had 8% less sensitivity than Google Scholar.
- Scopus seems to have the better balance among sensitivity and precision.
- Limitation: Analysis may be influenced by reviews with one or few new primary studies in the **updated** SRs.
- There is no citation tool with a better performance over the rest.
  Forward citation search could not be used as a stand alone method to update SR.

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Thank you

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