

Prototypical Strategy for High-Level Citation-Analyses: A Case Study on the Reception of English-Language Journal Articles from Psychology in the German-Speaking Countries

Introduction

The Web of Science (WoS) is frequently used in evaluations of scientific productivity and the international reception of publications (Garfield, 1979). However, citation-analyses done with this database are – among others – sensitive to problems of the limited representation of journal publications, and to name homonymy, i.e. several authors of the same name. A prototypical strategy for high-level citation-analyses considering and omitting both problems is presented. The analyses refer to a case study on the international reception of English-language journal publications from psychology in the German-speaking countries (Austria, Germany, parts of Switzerland), spanning three decades, 1981-2010.

Method:

The strategy was executed in five steps encompassing data gathering, data management (including correction of data defects), and data analyses (shown to the right). The *source database PSYNDEX* includes a total of 28,845 documentations of English-language psychology journal articles from the German-speaking countries for the stated time span. Eight faulty documentations in the database were eliminated (six duplicates and two unidentifiable documents), which led to a total of 28,837 articles. *Matching* to Web of Science documents was possible for 25,747 papers documented in PSYNDEX. This results in a WoS-coverage of English-language journal publications from psychology in the German-speaking countries of 89,3 %. Thus, approximately 10 % of the articles documented in PSYNDEX are unconsidered in the WoS.

Results

- The distributions of the absolute frequencies of citations of articles and of the frequencies of citations per year are strongly skewed to the right and resemble Pareto probability functions (Seglen, 1992).
- Five-year impact factors increase continuously from the 1980's to 2010 (see Fig. 1). This increase is observed for the reception of journal articles in all psychological sub-disciplines. However, the slope is different between the sub-disciplines, being most steeply for neuropsychology and biopsychology.
- Self-citations range between 0% and 100%. The average is 17% with a slight decrease from the 1980's (20%) to 2010 (16%).
- Highest citation frequencies are registered on average for journal publications in clinical psychology and cognitive (experimental) psychology. It must be considered that both sub-disciplines are comparably large research communities, giving authors a greater chance of being cited.
- Highest average citation frequencies are registered for metaanalyses, literature reviews and theoretical studies, less for empirical and experimental studies (interestingly, qualitative and illustrative studies are cited above average), and fewest for methodological studies (see Fig. 2).

Conclusions

The Web of Science-coverage of English-language journal publications from psychological research in the German-speaking countries is relatively satisfying, but certainly not exhaustive. Approximately 10 % of the publications are not included in the WoS. Combined with the fact that the coverage of publications in German language is yet less exhaustive, that can cause a serious selection bias in evaluative applications of citation-analyses concerned with Psychology from the German-speaking countries. Psychological sub-discipline and study type have an influence on citation rates. Sub-disciplines like biopsychology or experimental psychology, which are geared more towards paradigms of the natural sciences tend to have higher citation rates. They also have large communities, thereby further increasing the chance to reach high citation numbers. Self-citations should be generally omitted in citation-analyses because of the large differences between authors and between publication years. Literature reviews and metaanalyses receive – on average – the highest citation numbers, empirical studies less, and methodological studies the lowest.

References

- Garfield, E. (1979). *Citation indexing: Its theory and application in science, technology, and humanities*. New York: Sage.
- Seglen, P. O. (1992). The skewness of science. *Journal of the American Society for Information Science*, 43, 628-638.

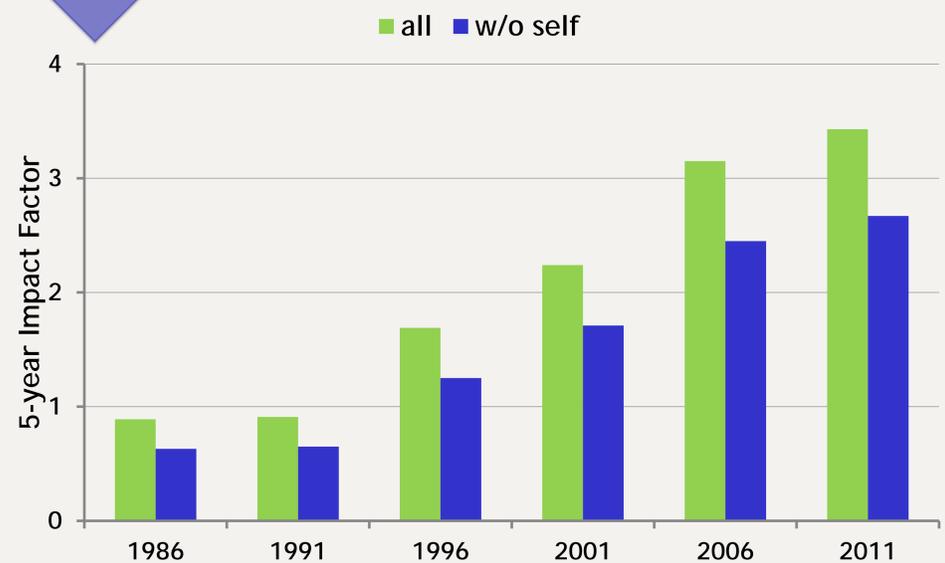
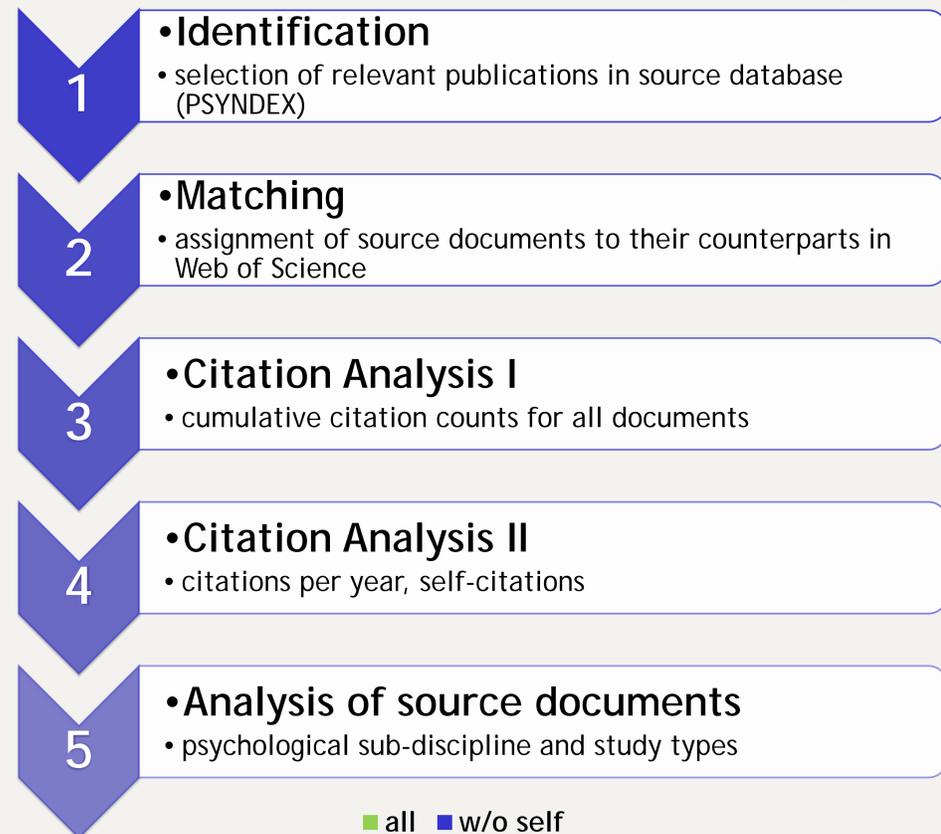


Figure 1.: Five-year impact factor trends for English-language journal articles authored or co-authored by psychology researchers from the German-speaking countries.

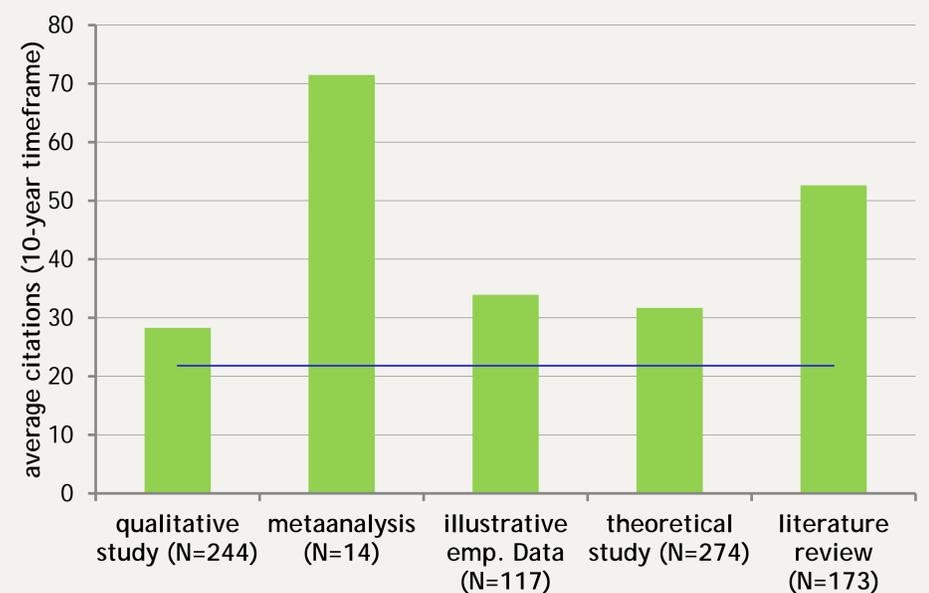


Figure 2.: Comparison of average citation-rates within ten years after publication for different types of articles (selection) and total citation average (horizontal line).

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