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Citations beyond WoS:
A delineation of non-source citations in political science

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From non-source items to non-source citations
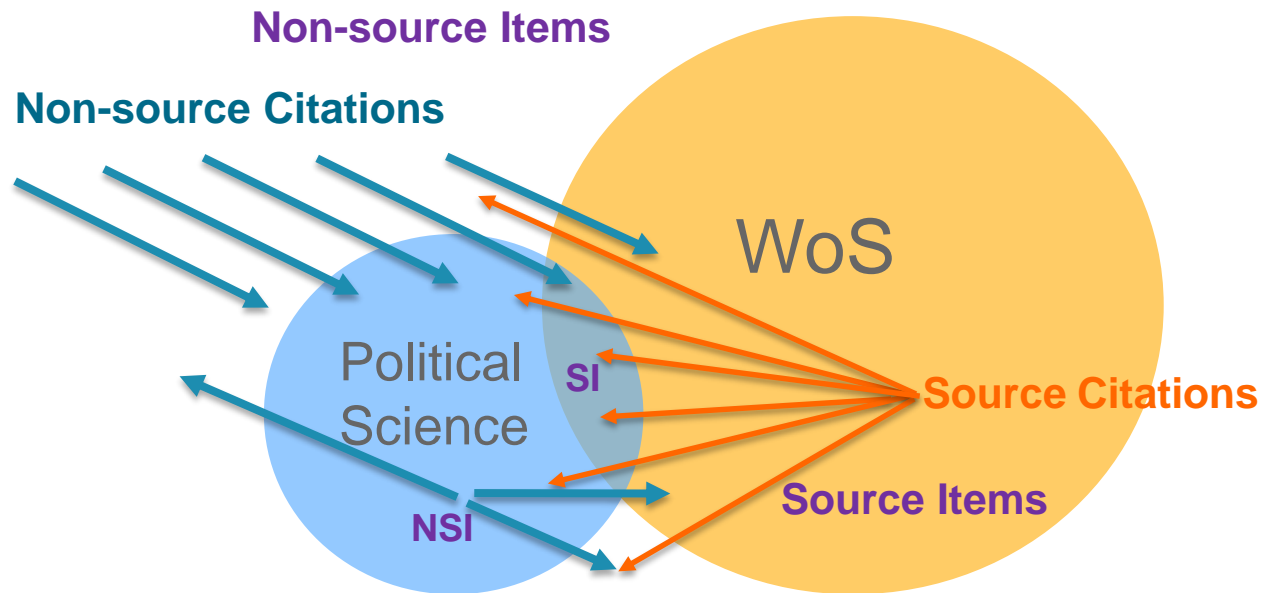
Data collection

- Publication lists from
  - 2 top-ranking institutions in Germany
    - Department of Political Science at Mannheim University
    - Institute of Political Science at University of Münster
  - 33 professors
  - 1,015 publications published from 2003 to 2007

Individual	• researchers' official websites (CVs)
Institutional	• institutional repositories
National	• German Social Science Literature Information System (SOLIS) by GESIS

- Collected publication lists were sent to professors for verification

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Citation collection

- WoS citations (w/o Book Citation Index)
  - References of WoS papers & citations of all publications
    - from the 2012 version of the WoS in-house database of Kompetenzzentrum Bibliometrie
      - citation period: 2003-2011
      - sliding 4-year citation window
      - author self-citations are included (20%)
- BKCI citations
  - were obtained from the WoS web version on 29th of January, 2014
- Google Scholar citations
  - were obtained from Google Scholar on 3rd of September, 2013

# Increase in publications and citations due to inclusion of non-source items

Samples	Field	Time Span	Publications	Citations
2 Australian Univs*	Politics & Policy	1997,1999	+481%	+242%
2 German Univs**	Political Science	2003-2007	+1350%	+150%

40% of German publications are in English

Shares of source items and non-source items in numbers of publications and citations
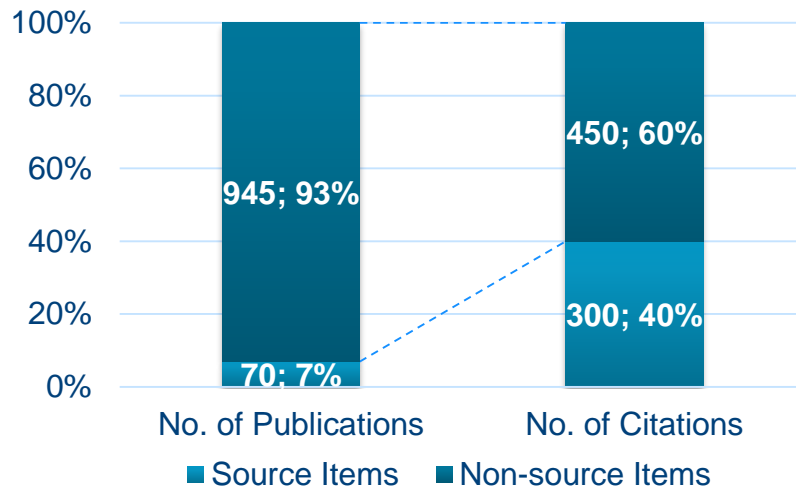
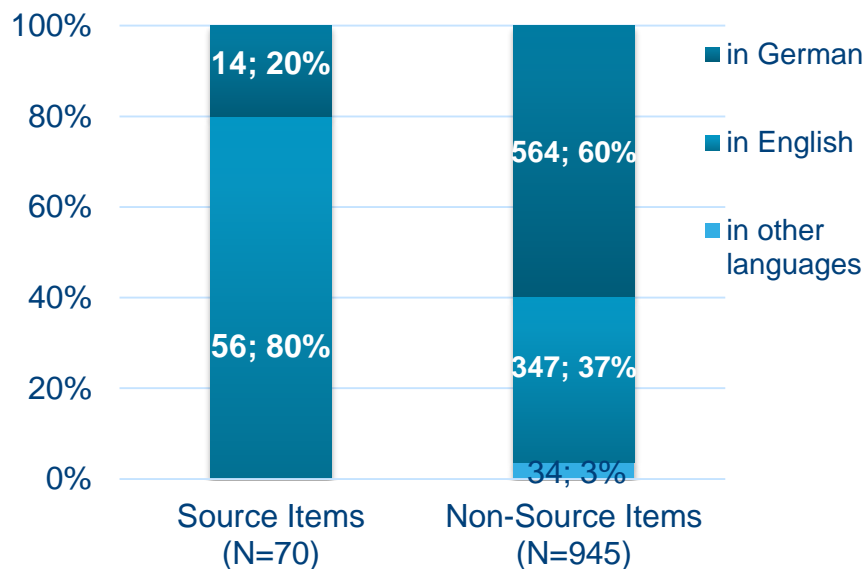**Average citation rates of political science publictaions in Germany**
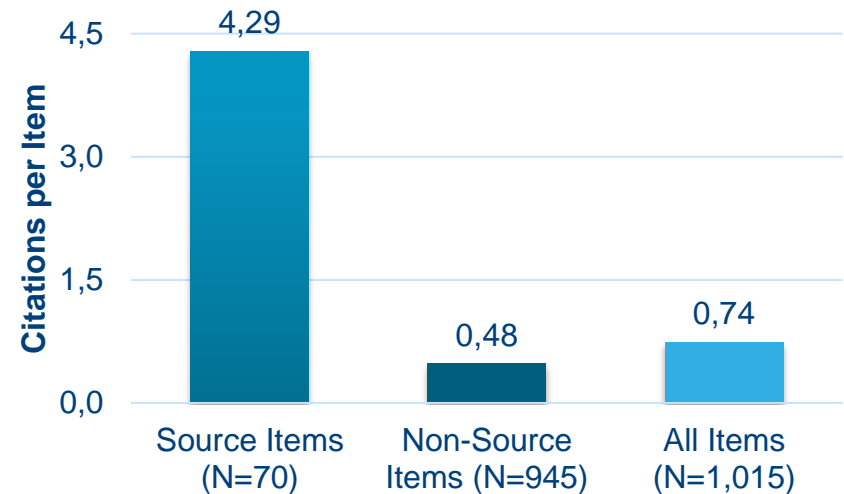
*Butler, L., Visser, M. S. (2006). Extending citation analysis to non-source items. Scientometrics, 66(2), 327-343.
**Chi, P.-S. (2014 Sep). Which role do non-source items play in the social sciences? A case study in political science in Germany. Scientometrics.
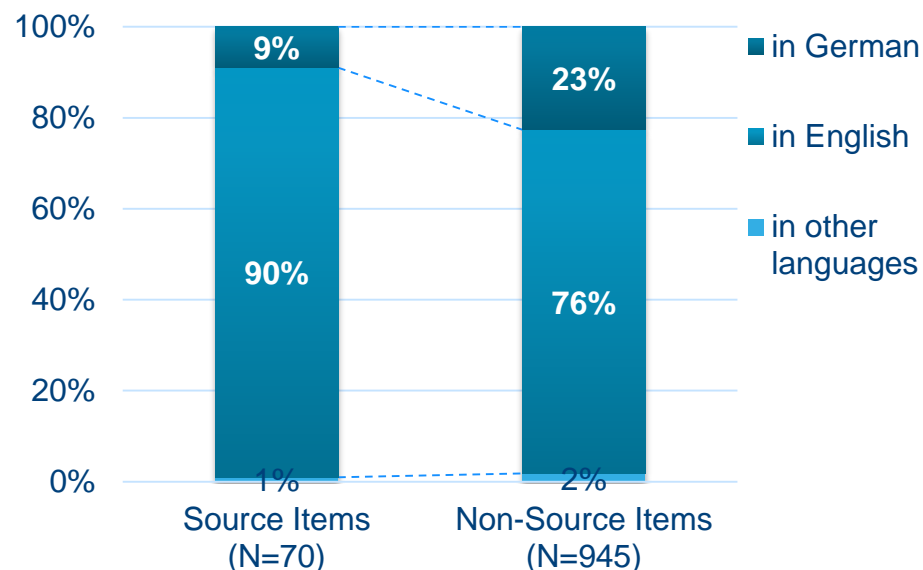
Language

PUBLICATION

CITATION

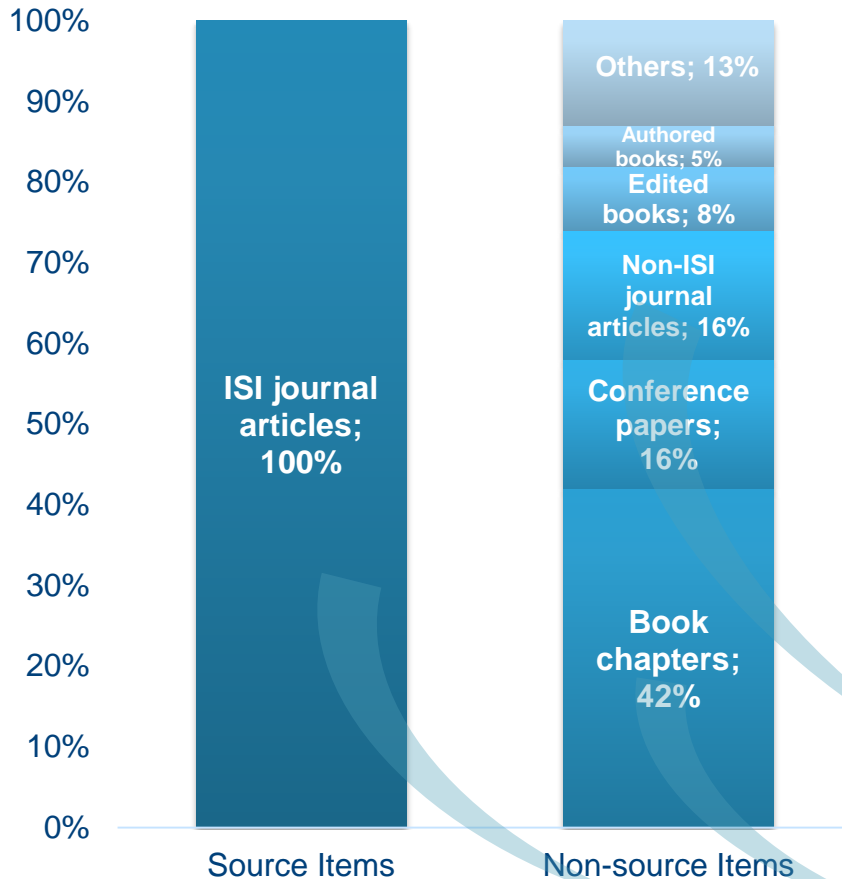**Languages of political science publictaions in Germany**

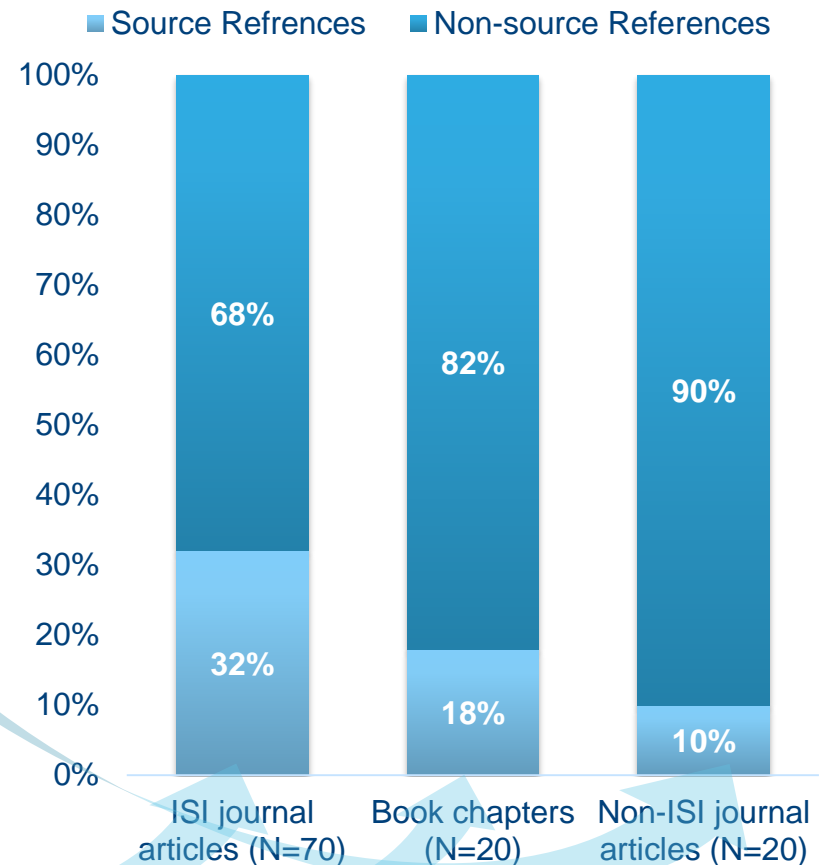**Languages of citations of political science publictaions in Germany**

Non-source items are published in non-English language and cited by papers in non-English more than source items.

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Document Type (1)

PUBLICATION

REFERENCE

Non-source items referred to more non-source references than source items.

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Document Type (2)

Average reference rates of different document types

References per item

50	
40	
30	
20	
10	
0	

ISI journal articles (N=70)   Non-ISI journal articles (N=20)   Book chapters (N=20)

Average citation rates of different document types

Citaions per item

5	
4	
3	
2	
1	
0	

ISI journal articles (N=70)   Non-ISI journal articles (N=20)   Book chapters (N=20)

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Non-source items are published in non-English language and cited by papers in non-English more than source items.

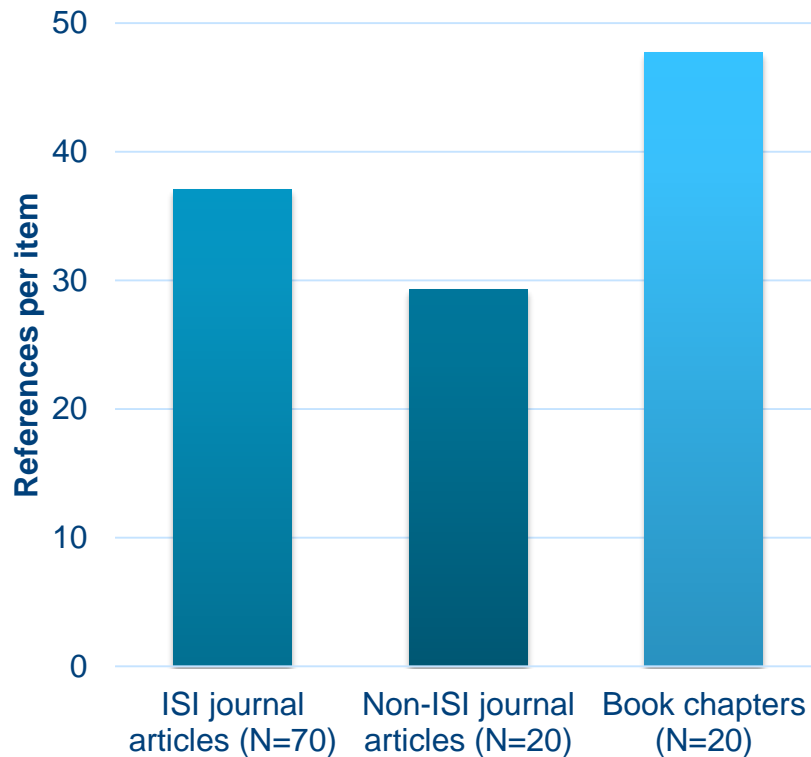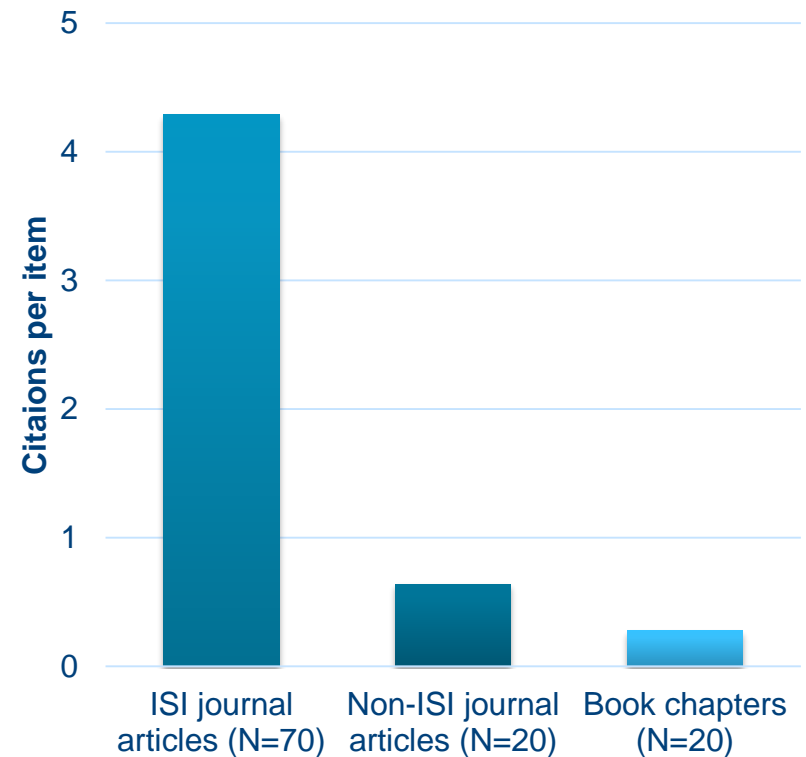Non-source items referred to more non-source references than source items.

Non-source items would be cited by non-source items more than source items, comparing to source items.

WOS

Source Items

Non-source Items

Other sources

Source Citations

Non-source Citations
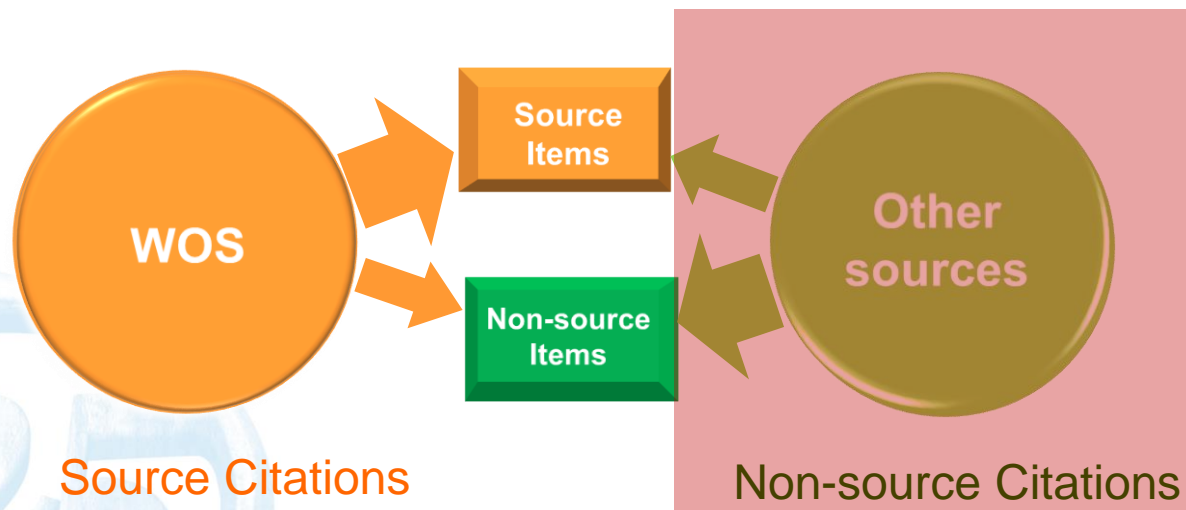
The impact of non-source items is systematically underestimated due to the missing "**non-source citations**" in WoS.

Non-source citations are important but ignored.

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Other citation sources

Average citation rates from different citation sources

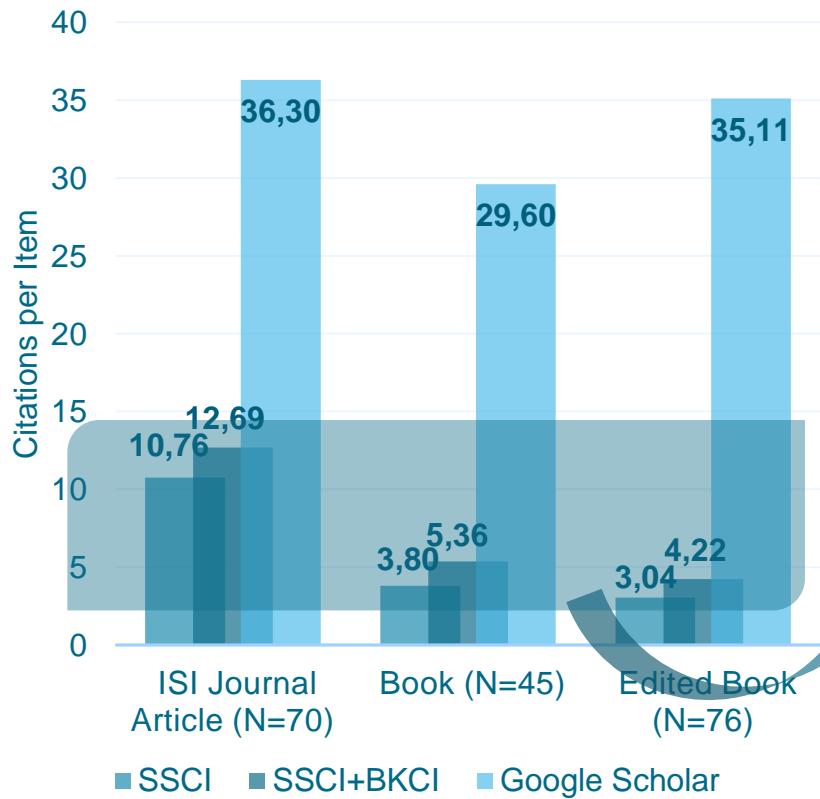|	
Google Scholar	ISI Journal Article (N=70): 36,30
	Book (N=45): 29,60
	Edited Book (N=76): 35,11

Citations per Item

ISI Journal Article (N=70): SSCI 10,76 — SSCI+BKCI 12,69 — Google Scholar 36,30
Book (N=45): SSCI 3,80 — SSCI+BKCI 5,36 — Google Scholar 29,60
Edited Book (N=76): SSCI 3,04 — SSCI+BKCI 4,22 — Google Scholar 35,11

Legend: SSCI — SSCI+BKCI — Google Scholar

Shares of citations from SSCI and BKCI

	SSCI	BKCI
ISI Journal Article (N=70)	85%	15%
Book (N=45)	71%	29%
Edited Book (N=76)	72%	28%

Legend: SSCI — BKCI

*Citations were obtained from the WoS web version on 29th of January, 2014, and Google Scholar on 3rd of September, 2013.
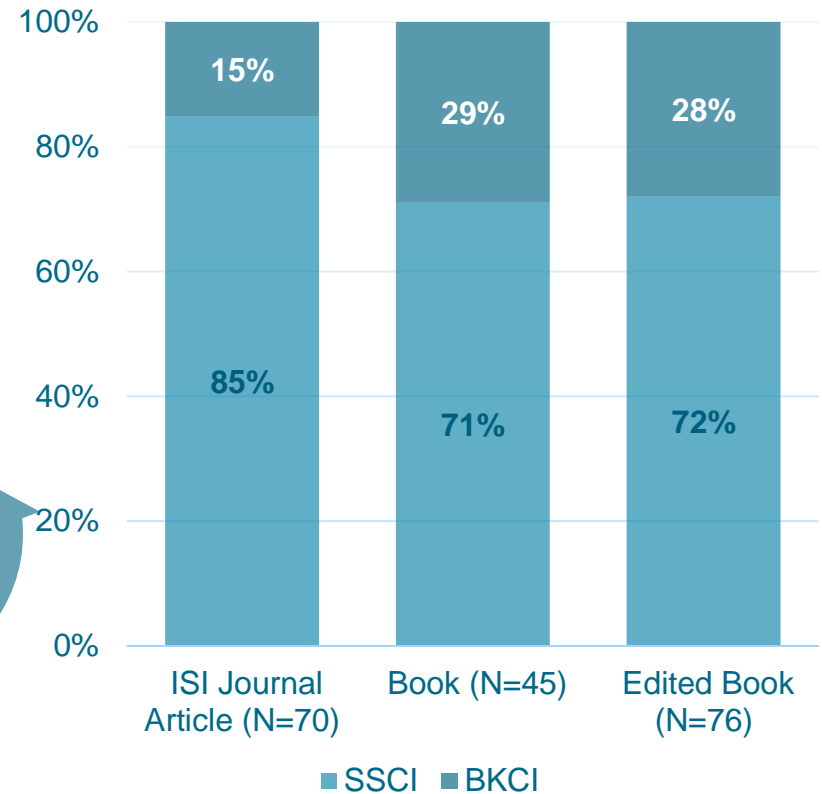
Summary

- The impact of non-source items is systematically underestimated in current studies.

- Other methods to investigate non-source citations are needed.

  - a formula to estimate the comprehensive citations

	Increase in the value of the indicator "number of (estimated) citations" due to the inclusion of non-source items	Contribution of non-source items to the (estimated) citations of all publications
After applied the formula	+396%	80%
Before estimated	+150%	60%

  - more comprehensive citation sources
    - BKCI
    - Google Book
    - Google Scholar

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Thank you very much.

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- $C_{all}^{SI} = C_{SI}^{SI} + C_{NSI}^{SI} = C_{SI}^{SI} + \dfrac{P_{NSI} \cdot C_{SI}^{SI} \cdot R_{NSI}^{SI} \cdot \left(R_{SI}^{NSI} + R_{SI}^{SI}\right)}{P_{SI} \cdot C_{SI}^{NSI} \cdot R_{SI}^{SI} \cdot \left(R_{NSI}^{SI} + R_{NSI}^{NSI}\right)} C_{SI}^{SI}$

- $C_{all}^{NSI} = C_{SI}^{NSI} + C_{NSI}^{NSI} = C_{SI}^{NSI} + \dfrac{P_{NSI} \cdot C_{SI}^{SI} \cdot R_{NSI}^{NSI} \cdot \left(R_{SI}^{NSI} + R_{SI}^{SI}\right)}{P_{SI} \cdot C_{SI}^{NSI} \cdot R_{SI}^{NSI} \cdot \left(R_{NSI}^{NSI} + R_{NSI}^{SI}\right)} C_{SI}^{NSI}$

  - R_{SI}^{SI} = source references cited by source items
  - R_{SI}^{NSI} = non-source references cited by source items
  - R_{NSI}^{SI} = source references cited by non-source items
  - R_{NSI}^{NSI} = non-source references cited by non-source items
  - C_{SI}^{SI} = citations from source items to source items (known as citations from WoS to source items)
  - C_{NSI}^{SI} = citations from non-source items to source items
  - C_{SI}^{NSI} = citations from source items to non-source items (known as citations from WoS to non-source items)
  - C_{NSI}^{NSI} = citations from non-source items to non-source items

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Average citation rates of political science publictaions in Germany