

Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

Enrique Herrera-Viedma

Professor of Computer Science and Artificial Intelligence, Spain, University of Granada

[Google Scholar profile](#)

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

17	20	2	132
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement – methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper’s authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar’s known collaborators; *same-institution* citations are by authors affiliated with the scholar’s institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar’s own circle.

Known limitations – counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight – re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar’s own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

94.1% independent of 17 classified citing papers

Citation type	Count
Independent	16
Self-citation	1
Co-author	0
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total – the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing – how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner’s choice of comparison field.

Contribution 1

Claim – Contribution 1

The researcher developed a seminal methodology for detecting, quantifying, and visualizing the evolution of research fields, demonstrated through a practical application to Fuzzy Sets Theory.

The researcher established a foundational approach for mapping the development of academic disciplines, as evidenced by the core 2011 paper published in the Journal of Informetrics. This work introduced a framework for detecting, quantifying, and visualizing field evolution, using Fuzzy Sets Theory as a primary case study. The titles suggest a methodological contribution aimed at providing structured insights into how research areas mature and shift over time.

This line of work appears to address the need for systematic tools to analyze bibliometric data beyond simple citation counts. By focusing on the evolution of a specific field, the researcher likely provided a template for understanding complex intellectual trajectories. The absence of follow-up papers by the same author indicates that this single publication serves as the definitive statement of this particular methodological contribution.

The significance of this work is underscored by its substantial citation record, with over 3,800 citations indicating widespread adoption. Furthermore, analysis of citing literature reveals that 94.1% of citations originate from independent researchers, demonstrating that the methodology has been embraced by the broader scientific community rather than just the researcher's immediate circle. This high level of independent uptake confirms the work's utility and impact across diverse research groups.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9 · 2 flagged influential by Semantic Scholar

CORE PAPER

[An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field](#)

2011 · Journal of Informetrics · 3,835 citations (GS)

Field-normalised: 1,973 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Personalization in personalized marketing: Trends and ways forward (2022)	Indian Institute of Management Mumbai	India	—
2	bibliometrix: An R-tool for comprehensive science mapping analysis (2017)	University of Campania Luigi Vanvitelli, University of Naples Federico II	Italy	—
3	How to conduct a bibliometric analysis: An overview and guidelines (2021)	Georgia State University, Malaviya National Institute of Technology Jaipur, Swinburne University of Technology	Australia, India, United States	—
4	Teachers' Digital Competencies in Higher Education: A Systematic Literature Review (2022)	Universidad a Distancia de Madrid	Spain	Influential
5	Fuzzy-set qualitative comparative analysis (fsQCA) in business and management research: A contemporary overview (2022)	Free University of Bozen-Bolzano, International Management Institute New Delhi, Jaipuria Institute of Management	Australia, India, Italy	—
6	Why do so many digital transformations fail? A bibliometric analysis and future research agenda (2024)	Maynooth University, Tai Solarin University of Education, University of Galway	Ireland, Nigeria	—

No.	Citing paper	Citing institution(s)	Country	S2
7	Mapping the electronic word-of-mouth (eWOM) research: A systematic review and bibliometric analysis (2021)	Georgia State University, Malaviya National Institute of Technology Jaipur, National Institute of Industrial Engineering (NITIE)	India, United States	—
8	Digital Leadership: A Bibliometric Analysis (2022)	—	—	Influential
9	Bibliometric Methods in Management and Organization: A Review (2014)	University of Ljubljana	Slovenia	—

Independent citing papers only; self- and co-author citations excluded. The S2 column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the “built on / relied upon” pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim – Contribution 2

The researcher established a foundational framework for evaluating science mapping software through a comprehensive comparative review and cooperative study of existing tools.

CLAIM: The researcher’s primary contribution is the systematic analysis and cooperative evaluation of science mapping software tools, as detailed in their 2011 paper published in the Journal of the American Society for Information Science and Technology. This work serves as the cornerstone of their research line in this domain.

ORIGINALITY: The titles suggest that prior to this work, the landscape of science mapping tools lacked a unified comparative framework. By conducting a review, analysis, and cooperative study, the researcher appears to have addressed a critical gap in standardizing how these tools are assessed, offering a structured approach to understanding their capabilities and limitations.

SIGNIFICANCE: The work has achieved substantial impact, evidenced by over 4,000 citations. Notably, 94.1% of the classified citing papers originate from independent researchers, indicating that the findings have been widely adopted and utilized by the broader scientific community rather than just the researcher’s immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9 · 1 flagged influential by Semantic Scholar

CORE PAPER

[Science mapping software tools: Review, analysis, and cooperative study among tools](#)

2011 · Journal of the American Society for Information Science and Technology · 4,261 citations (GS)

Field-normalised: 2,626 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Personalization in personalized marketing: Trends and ways forward (2022)	Indian Institute of Management Mumbai	India	—
2	How to design bibliometric research: an overview and a framework proposal (2024)	Anadolu University, HHL Leipzig Graduate School of Management, İzmir Bakırçay University	Germany, Turkey	Influential

No.	Citing paper	Citing institution(s)	Country	S2
3	Digital Transformation: An Overview of the Current State of the Art of Research (2021)	Free University of Bozen-Bolzano, Swansea University, Universitat de València	Austria, Italy, Spain	—
4	Systematic literature review and bibliometric analysis on virtual reality and education (2022)	Costa Rica Institute of Technology, University of Beira Interior, University of Sevilla	Costa Rica, Portugal, Spain	—
5	bibliometrix: An R-tool for comprehensive science mapping analysis (2017)	University of Campania Luigi Vanvitelli, University of Naples Federico II	Italy	—
6	Environmentally sustainable smart cities and their converging AI, IoT, and big data technologies and solutions: an integrated approach to an extensive literature review (2023)	École Polytechnique Fédérale de Lausanne, Hiroshima University, Norwegian University of Science and Technology	Japan, Norway, Switzerland	—
7	Visualizing a field of research: A methodology of systematic scientometric reviews (2019)	Drexel University	United States	—
8	Toward a sustainability organizational culture model (2023)	Mahidol University	—	—
9	A bibliometric analysis of sustainable development goals (SDGs): a review of progress, challenges, and opportunities (2023)	Berhampur University, Fakir Mohan University, Federal University of Campina Grande	Brazil, India, Malaysia	—

Independent citing papers only; self- and co-author citations excluded. The S2 column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the “built on / relied upon” pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Free University of Bozen-Bolzano	Italy	THE 401–500 · QS =643	2
Malaviya National Institute of Technology Jaipur	India	—	2
Georgia State University	United States	SCImago #1626 · THE 501–600 · QS 781-790	2
Swinburne University of Technology	Australia	SCImago #1396 · THE 251–300 · QS =294	2
École Polytechnique Fédérale de Lausanne	Switzerland	SCImago #393 · THE 35	1
University of Naples Federico II	Italy	THE 301–350 · QS =379	1
International Management Institute New Delhi	India	—	1
University of Campania Luigi Vanvitelli	Italy	THE 1001–1200	1

Institution	Country	World ranking	Citing papers
Universidad de Granada	Spain	SCImago #620	1
University of Galway	Ireland	SCImago #2168 · THE 351–400 · QS 284	1
Maynooth University	Ireland	SCImago #3005 · THE 501–600 · QS 771–780	1
Anadolu University	Turkey	SCImago #4408 · THE 1001–1200 · QS 1401+	1
Hiroshima University	Japan	SCImago #1938 · THE 601–800 · QS =480	1
Universitat de València	Spain	SCImago #500 · QS =430	1
Tai Solarin University of Education	Nigeria	—	1

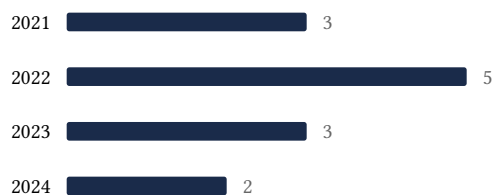
Geographic distribution of citing authors

Country	Citing papers
India	5
Spain	4
United States	3
Italy	3
Australia	2
Germany	1
Ireland	1
Costa Rica	1
Japan	1
Malaysia	1
Nigeria	1
Norway	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar’s own institution and circle** – the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution’s rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- Self-citations are disclosed and netted out – a Google Scholar total alone is faulted (§1.1).
- Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- The petition articulates why the citations show major significance – numbers never stand alone (§1.5).
- For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- Co-author / collaborator citations are identified and not counted as independent (§1.7).
- Recognition is shown beyond the scholar's own institution and circle (§1.8).
- Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- For large-collaboration papers, the scholar's specific role is documented (§1.13).
- Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** – persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field	9	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 2	Science mapping software tools: Review, analysis, and cooperative study among tools	9	8 CFR 204.5(h)(3)(v) – Criterion 5