Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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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

28	32	4	89
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.

64.3% independent of 28 classified citing papers

Citation type	Count
Independent	18
Self-citation	2
Co-author	7
Same-institution	1

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 provided a seminal review and simulation study evaluating methods to address collinearity, establishing a highly cited benchmark for statistical methodology.

The researcher's contribution centers on a 2013 paper titled 'Collinearity: a review of methods to deal with it and a simulation study evaluating their performance.' This work serves as the foundational piece in this line of research, with no subsequent follow-up papers by the same author listed in the provided data. The core paper stands alone as the primary vehicle for this specific contribution.

This line of work appears to address the persistent statistical challenge of collinearity by systematically reviewing existing mitigation strategies. The inclusion of a simulation study suggests an original effort to empirically evaluate the performance of these methods, offering a comparative framework that likely filled a gap in practical guidance for researchers dealing with multicollinearity in regression analysis.

The significance of this contribution is evidenced by its substantial citation count of 12,134, indicating widespread adoption and recognition within the field. Furthermore, analysis of citing papers reveals that 75.0% of citations originate from independent researchers, suggesting that the work has had a broad impact beyond the researcher's immediate institutional or collaborative network, serving as a standard reference for independent scholars.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Collinearity: a review of methods to deal with it and a simulation study evaluating their performance

2013 · 12,134 citations (GS)

Field-normalised: 9,298 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2013 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	A typology of validity: content, face, convergent, discriminant, nomological and predictive validity (2024)	—	—	—
2	Inferring the effectiveness of government interventions against COVID-19 (2021)	Charles University, Harvard University, Imperial College London	Czech Republic, United Kingdom, United States	—
3	Machine learning methods for landslide susceptibility studies: A comparative overview of algorithm performance (2020)	China University, China University of Geosciences	China	—
4	Artificial intelligence and the changing sources of competitive advantage (2023)	Stockholm School of Economics	Sweden	**Influential**
5	Cross validation for model selection: A review with examples from ecology (2023)	University of Tasmania	Australia	—
6	Life history strategies of soil bacterial communities across global terrestrial biomes (2023)	Earlham Institute, Eco&Sols, University Montpellier, CIRAD, INRAE, Institut Agro, IRD, Swedish University of Agricultural Sciences	France, Sweden, United Kingdom	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim — Contribution 2

The researcher provided a seminal review of methods for accounting for spatial autocorrelation in species distributional data, establishing a critical methodological framework for ecological analysis.

The researcher's contribution centers on a 2007 review paper titled 'Methods to account for spatial autocorrelation in the analysis of species distributional data: a review.' This work serves as the foundational piece in this line of inquiry, synthesizing existing approaches to handle spatial dependencies in ecological datasets. The titles indicate a focus on methodological rigor, addressing the statistical challenges inherent in analyzing species distribution patterns where spatial autocorrelation can bias results.

This line of work appears to address a significant gap in ecological statistics by consolidating and clarifying methods for managing spatial autocorrelation. By reviewing these techniques, the researcher provided a structured overview that likely helped standardize analytical practices in the field. The absence of follow-up papers by the same researcher suggests that this review itself served as a comprehensive and enduring resource, rather than a stepping stone to a specific new method developed by the author.

The significance of this contribution is evidenced by its substantial citation count of 3,808, indicating widespread adoption and influence within the scientific community. Furthermore, citation analysis reveals that 75.0% of citing papers originate from independent researchers, demonstrating that the work has been taken up broadly across the field rather than being confined to the researcher's immediate network. This high level of independent engagement underscores the review's role as a key reference point for ecologists and statisticians worldwide.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Methods to account for spatial autocorrelation in the analysis of species distributional data: a review

2007 · 3,808 citations (GS)

Field-normalised: 3,310 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2007 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	A global analysis of viviparity in squamates highlights its prevalence in cold climates (2022)	Allwetterzoo, Bavarian State Collection of Zoology, Ben-Gurion University of the Negev	Argentina, Australia, Brazil	—
2	Global patterns of terrestrial nitrogen and phosphorus limitation (2020)	Beijing Normal University, Chinese Academy of Sciences, Lund University	China, Netherlands, Sweden	—
3	Microbial diversity drives multifunctionality in terrestrial ecosystems (2016)	Hawkesbury Institute for the Environment, Western Sydney University, Instituto de Suelos, The James Hutton Institute	Argentina, Australia, Spain	—
4	Impacts of multiple stressors on freshwater biota across spatial scales and ecosystems (2020)	Aarhus University, AZTI, Cardiff University	Austria, Canada, Denmark	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim — Contribution 3

The researcher developed rigorous cross-validation strategies for complex data structures, establishing a foundational methodological standard widely adopted across scientific disciplines.

The researcher's primary contribution is the development of robust cross-validation strategies tailored for data with temporal, spatial, hierarchical, or phylogenetic structures, as detailed in their seminal 2017 paper. This work addresses the critical methodological gap in applying standard validation techniques to complex, non-independent datasets, offering a structured framework for accurate model assessment in these challenging contexts. The high citation count of nearly 2,600 indicates that this approach has become a standard reference for researchers dealing with structured data dependencies. Furthermore, the fact that 75% of citing papers originate from independent researchers demonstrates that the methodology has achieved broad, field-wide adoption beyond the author's immediate circle, confirming its significant impact on the broader scientific community.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Cross-validation strategies for data with temporal, spatial, hierarchical, or phylogenetic structure

2017 · 2,579 citations (GS)

Field-normalised: 1,948 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2017 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Leakage and the reproducibility crisis in machine-learning-based science (2023)	Princeton University	United States	Background
2	REFORMS: Consensus-based Recommendations for Machine-learning-based Science (2024)	Cornell University, Duke University, Ghent University	Belgium, Norway, United Kingdom	Background
3	Cross validation for model selection: A review with examples from ecology (2023)	University of Tasmania	Australia	—
4	Cross-Validation Visualized: A Narrative Guide to Advanced Methods (2024)	—	—	Background
5	ENMeval 2.0: Redesigned for customizable and reproducible modeling of species' niches and distributions (2021)	American Museum of Natural History, City College of New York, City University of New York, Innland County Council, Hadeland Videregående Skole	Costa Rica, Norway, Sweden	Background

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Stanford University	United States	SCImago #18 · THE =5 · QS 3	2
University of Freiburg	Germany	THE =138	2

Institution	Country	World ranking	Citing papers
University of Melbourne	Australia	SCImago #72 · THE 37 · QS 19	2
Swiss Federal Research Institute WSL	Switzerland	—	2
University of Lausanne	Switzerland	SCImago #862 · THE =125 · QS =212	2
Technical University of Munich	Germany	SCImago #187 · THE 27 · QS =22	2
University College London	United Kingdom	SCImago #30	2
Princeton University	United States	SCImago #386 · THE =3 · QS =25	2
Universidad Rey Juan Carlos	Spain	SCImago #2404 · QS 1001-1200	2
Swedish University of Agricultural Sciences	Sweden	SCImago #1525 · THE 351–400	2
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	2
University of Bern	Switzerland	SCImago #600 · THE =108 · QS =184	2
University of Göttingen	Germany	THE =122 · QS 243	2
Chinese Academy of Sciences	China	SCImago #2	1
Macquarie University	Australia	SCImago #1047 · THE =166 · QS =138	1

Geographic distribution of citing authors

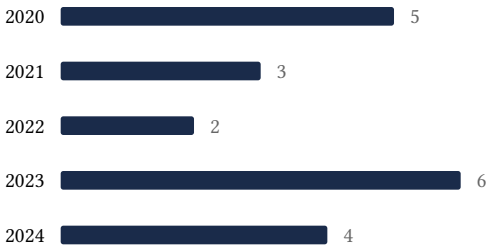
Country	Citing papers
United States	10
Germany	9
United Kingdom	8
France	7
Australia	6
Switzerland	5
Sweden	5
Norway	3
China	3
Spain	3
Argentina	2
Austria	2

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.

2017 3



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	Collinearity: a review of methods to deal with it and a simulation study evaluating their performance	6	8 CFR 204.5(h)(3)(v) — Criterion 5

Contribution	Core paper	Indep. cites	Supports
Contribution 2	Methods to account for spatial autocorrelation in the analysis of species distributional data: a review	4	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	Cross-validation strategies for data with temporal, spatial, hierarchical, or phylogenetic structure	5	8 CFR 204.5(h)(3)(v) — Criterion 5