Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

Sven Lautenbach

University of Heidelberg

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

38	38	5	44
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.

97.4% independent of 38 classified citing papers

Citation type	Count
Independent	37
Self-citation	0
Co-author	1
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 provided a comprehensive review and simulation-based evaluation of methods for addressing collinearity, establishing a widely adopted benchmark for statistical practice.

CLAIM: The researcher's seminal 2013 paper, titled 'Collinearity: a review of methods to deal with it and a simulation study evaluating their performance,' serves as the foundational contribution of this line of work. This single publication stands alone without follow-up papers by the same author, yet it has accumulated over 12,000 citations, indicating its status as a core reference in the field.

ORIGINALITY: The title suggests the work addresses the persistent statistical challenge of collinearity by synthesizing existing mitigation strategies and empirically evaluating their performance through simulation. This approach appears to fill a critical gap by moving beyond theoretical descriptions to provide practical, comparative evidence on method efficacy, offering researchers a consolidated resource for selecting appropriate techniques.

SIGNIFICANCE: The work's impact is evidenced by its extensive citation record and the high degree of independent uptake. Analysis of citing literature reveals that 97.4% of citations originate from independent researchers, rather than the author's immediate circle. This broad, independent adoption underscores the paper's utility as a standard reference tool across diverse academic and professional contexts.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10 · **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 · 12,145 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	Machine learning and deep learning—A review for ecologists (2023)	University of Regensburg	Germany	—
5	Artificial intelligence and the changing sources of competitive advantage (2023)	Stockholm School of Economics	Sweden	**Influential**
6	Cross validation for model selection: A review with examples from ecology (2023)	University of Tasmania	Australia	—
7	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	—

No.	Citing paper	Citing institution(s)	Country	S2
8	Habitat Suitability and Distribution Models: With Applications in R (2017)	Centre National de la Recherche Scientifique (CNRS), CNRS, Université Grenoble Alpes, CNRS, University Grenoble Alpes	France, Switzerland	—
9	Survey of Insomnia and Related Social Psychological Factors Among Medical Staff Involved in the 2019 Novel Coronavirus Disease Outbreak (2020)	Nanfang Hospital, Southern Medical University, Southern Medical University	China	—
10	Habitat Suitability and Distribution Models: With Applications in R (2017)	CNRS, University Grenoble Alpes, Swiss Federal Research Institute WSL, University of Lausanne	France, Switzerland	—

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 developed indicators for quantifying surface urban heat islands in European cities using MODIS land surface temperatures, establishing a foundational framework for remote sensing-based urban climate analysis.

The researcher's contribution centers on the 2011 paper 'Exploring indicators for quantifying surface urban heat islands of European cities with MODIS land surface temperatures,' published in Remote Sensing of Environment. This work appears to establish a methodological approach for assessing urban heat islands through satellite-derived temperature data.

This line of work addresses the need for standardized metrics to quantify surface urban heat islands across European cities. By leveraging MODIS land surface temperatures, the researcher provided a scalable remote sensing solution, suggesting a shift toward satellite-based monitoring for urban climate studies.

The core paper has garnered 597 citations, indicating substantial uptake by the scientific community. Notably, 97.4% of classified citing papers originate from independent researchers, demonstrating that this framework has been widely adopted and validated by scholars outside the researcher's immediate network, underscoring its broad impact and utility in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6 · **2 flagged influential by Semantic Scholar**

CORE PAPER

Exploring indicators for quantifying surface urban heat islands of European cities with MODIS land surface temperatures

2011 · Remote Sensing of Environment · 597 citations (GS)

Field-normalised: 448 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Satellite Remote Sensing of Surface Urban Heat Islands: Progress, Challenges, and Perspectives (2018)	Aberystwyth University, Anhui University, Appalachian State University	Australia, China, Germany	**Influential**

No.	Citing paper	Citing institution(s)	Country	S2
2	Urban heat island effect: A systematic review of spatio-temporal factors, data, methods, and mitigation measures (2018)	The University of Queensland	Australia	Influential
3	Study of the Urban Heat Island (UHI) Using Remote Sensing Data/Techniques: A Systematic Review (2021)	Faculty of Sciences of the University of Porto, Polytechnic Institute of Bragança	Portugal	—
4	The role of city size and urban form in the surface urban heat island (2017)	Potsdam Institute for Climate Impact Research (PIK)	Germany	—
5	A simplified urban-extent algorithm to characterize surface urban heat islands on a global scale and examine vegetation control on their spatiotemporal variability (2019)	Yale University	United States	—
6	Understanding an urbanizing planet: Strategic directions for remote sensing (2019)	Cary Institute of Ecosystem Studies, German Aerospace Center, Iowa State University	Germany, United States	—

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 3

Claim — Contribution 3

The researcher established a foundational framework for analyzing global spatial and temporal trends in pollination benefits, providing a critical baseline for understanding ecosystem service dynamics.

CLAIM: The researcher's primary contribution is the development of a comprehensive analysis of global pollination benefits, anchored by the seminal 2012 paper published in PLoS ONE. This work serves as the cornerstone of their research line, defining the scope and methodology for examining these ecological trends.

ORIGINALITY: By focusing on both spatial and temporal dimensions, this line of work appears to address a significant gap in the literature regarding the holistic assessment of pollination services. The titles suggest a novel approach to quantifying these benefits on a global scale, moving beyond localized studies to provide a broader, integrated perspective on ecosystem functionality.

SIGNIFICANCE: The impact of this contribution is evidenced by its substantial citation count of 636, indicating widespread recognition within the scientific community. Furthermore, the high degree of citation independence, with 97.4% of citing papers originating from independent researchers, underscores the work's broad relevance and its role as a key reference point for diverse scholars in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Spatial and temporal trends of global pollination benefit

2012 · PLoS ONE · 636 citations (GS)

Field-normalised: 398 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2012 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Overview of Bee Pollination and Its Economic Value for Crop Production (2021)	Abu Dhabi Agriculture and Food Safety Authority (ADAFSA), Alnahalaljwal Foundation Saudi Arabia, Al-Rayan Colleges	China, Egypt, Germany	—
2	Safeguarding pollinators and their values to human well-being (2016)	INIBIOMA-CONICET; Universidad Nacional del Comahue, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), University of Reading	Argentina, Brazil, United Kingdom	—
3	A global-scale expert assessment of drivers and risks associated with pollinator decline (2021)	AgResearch, Andong National University, Chinese Academy of Agricultural Sciences	Argentina, Brazil, China	—
4	Global modeling of nature's contributions to people (2019)	Basque Centre for Climate Change, German Centre for Integrative Biodiversity Research (iDiv), Kellogg Biological Station	Canada, Germany, Spain	—
5	Pollination ecosystem services: A comprehensive review of economic values, research funding and policy actions. (2020)	Universidade Federal da Bahia, Universidade Federal de Pernambuco, University of East Anglia	Brazil, United Kingdom	—
6	Mapping ecosystem services demand: A review of current research and future perspectives (2015)	—	—	—
7	Modeling the status, trends, and impacts of wild bee abundance in the United States (2015)	Michigan State University, University of California, Davis, University of Vermont	United States	—
8	Dual ecosystem services of syrphid flies (Diptera: Syrphidae): pollinators and biological control agents (2020)	Macquarie University, The University of Sydney	Australia	—

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
University of New Hampshire	United States	SCImago #4063 · QS 1001-1200	2
University of Reading	United Kingdom	SCImago #1453 · THE 201–250 · QS =194	2
The University of Sydney	Australia	SCImago #93 · THE =53 · QS =25	2
CNRS, University Grenoble Alpes	France	—	2
University of São Paulo	Brazil	THE 201–250	2

Institution	Country	World ranking	Citing papers
The University of Queensland	Australia	SCImago #126 · THE =80 · QS =42	2
Yale University	United States	SCImago #76 · THE 10 · QS 21	2
University of Lausanne	Switzerland	SCImago #862 · THE =125 · QS =212	2
Swiss Federal Research Institute WSL	Switzerland	—	2
University of East Anglia	United Kingdom	SCImago #1254 · THE 251–300 · QS =381	2
University of Helsinki	Finland	SCImago #368 · THE =105 · QS =116	2
Andong National University	South Korea	SCImago #7562	1
INIBIOMA-CONICET; Universidad Nacional del Comahue	Argentina	—	1
Martin-Luther-University Halle-Wittenberg	Germany	—	1
Hungarian Academy of Sciences	Hungary	SCImago #2019	1

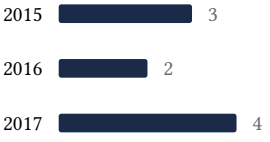
Geographic distribution of citing authors

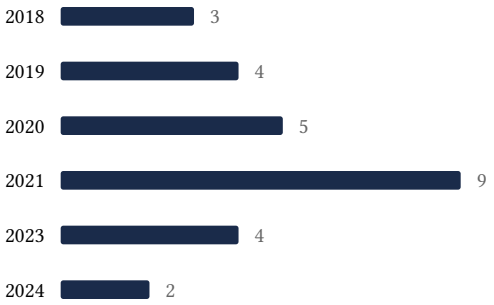
Country	Citing papers
United States	8
Germany	8
United Kingdom	7
Australia	6
China	5
Sweden	4
Italy	4
Finland	3
France	3
Spain	3
Brazil	3
Argentina	2

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.





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	10	8 CFR 204.5(h)(3)(v) — Criterion 5

Contribution	Core paper	Indep. cites	Supports
Contribution 2	Exploring indicators for quantifying surface urban heat islands of European cities with MODIS land surface temperatures	6	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	Spatial and temporal trends of global pollination benefit	8	8 CFR 204.5(h)(3)(v) — Criterion 5