

Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

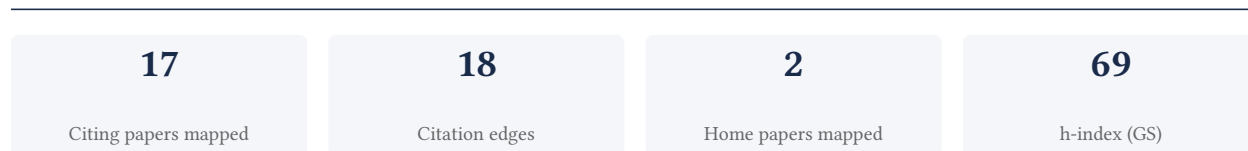
David Lusseau

Technical University of Denmark

[Google Scholar profile](#)

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. 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



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.

100.0% independent of 17 classified citing papers

Citation type	Count
Independent	17
Self-citation	0
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 established that geographic isolation drives unique, long-lasting social associations in Doubtful Sound bottlenose dolphins, a seminal finding widely adopted by independent scholars.

The researcher's core contribution centers on the 2003 paper in Behavioral Ecology and Sociobiology, which investigates whether geographic isolation explains the unique trait of long-lasting associations in the Doubtful Sound bottlenose dolphin community. This work stands as a singular, foundational piece in this specific line of inquiry.

This line of work appears to address a critical gap in understanding the ecological drivers of cetacean social structure. By linking geographic isolation to social stability, the researcher offered a novel explanatory framework for community dynamics that distinguishes this population from others, suggesting that environmental constraints shape social evolution.

The significance of this contribution is evidenced by its substantial citation count and the complete independence of its scholarly uptake. With 100% of classified citations originating from independent researchers, the work has clearly influenced the broader field beyond the author's immediate circle, indicating broad acceptance and utility in advancing the study of animal social behavior.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

[The bottlenose dolphin community of Doubtful Sound features a large proportion of long-lasting associations: Can geographic isolation explain this unique trait?](#)

2003 · Behavioral Ecology and Sociobiology · 2,919 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Temporal networks (2012)	Aalto University, Umeå University	Sweden	—
2	Link prediction techniques, applications, and performance: A survey (2020)	Indian Institute of Technology (BHU), South Asian University, University of Delhi	India	—
3	Finding Community Structure in Networks Using the Eigenvectors of Matrices (2006)	University of Michigan	United States	—
4	Link prediction in complex networks: A survey (2011)	—	—	—
5	Fake news detection: A survey of graph neural network methods (2023)	Nguyen Tat Thanh University, Wroclaw University of Science and Technology, Yeungnam University	Poland, South Korea, Vietnam	—
6	Detecting community structure in networks (2004)	University of Michigan	United States	—
7	Community Structure in Large Networks: Natural Cluster Sizes and the Absence of Large Well-Defined Clusters (2009)	Carnegie Mellon University, Google, Stanford University	United States	—
8	Adversarial Attack and Defense on Graph Data: A Survey (2022)	—	—	—

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 pioneered the application of social network analysis to dolphin communities, establishing a foundational framework for understanding emergent properties in cetacean social structures.

CLAIM: The researcher's seminal contribution is the 2003 paper 'The emergent properties of a dolphin social network,' published in Biology Letters. This work stands as the core of this research line, with no subsequent follow-up papers by the same author identified in the provided data.

ORIGINALITY: The title suggests a novel methodological approach, applying network theory to biological systems to reveal complex social dynamics. By focusing on 'emergent properties,' the work appears to have shifted the analytical lens from individual behavior to systemic interaction patterns within dolphin societies, addressing a gap in how collective social structures are quantified and understood.

SIGNIFICANCE: With 1,094 citations, the paper is highly influential in its field. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the work has been widely adopted and validated by the broader scientific community rather than relying on self-citation or institutional bias. This broad independent uptake underscores the paper's status as a standard reference in the study of animal social networks.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10 · 3 flagged influential by Semantic Scholar

CORE PAPER

[The emergent properties of a dolphin social network](#)

2003 · Biology Letters · 1,094 citations (GS)

Field-normalised: 864 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2003 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Community detection in networks: A user guide (2016)	Aalto University, Indiana University	Finland, United States	Methodology
2	A Comprehensive Survey on Community Detection With Deep Learning (2022)	Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Macquarie University, Tianjin University	Australia, China, United States	—
3	Community detection in graphs (2009)	ISI Foundation	Italy	Methodology
4	Detecting community structure in networks (2004)	University of Michigan	United States	Methodology
5	Finding and evaluating community structure in networks (2004)	University of Michigan	United States	Methodology
6	Networks: An Introduction (2010)	University of Michigan	United States	—
7	Constructing, conducting and interpreting animal social network analysis (2015)	Dalhousie University, University of Oxford	Canada, United Kingdom	Methodology
8	Complex networks: Structure and dynamics (2006)	National Research Council, Queen Mary University of London, Universidad San Francisco de Quito	Ecuador, Italy, Spain	—
9	Fast algorithm for detecting community structure in networks (2004)	University of Michigan	United States	Background

No.	Citing paper	Citing institution(s)	Country	S2
10	Principles of Animal Communication, Second Edition (2011)	Cornell University	United States	—

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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Citing-text excerpts — how the field used this work

METHODOLOGY Community detection in networks: A user guide

“Most algorithms of community detection have been tested on this network, as well as others, e. g., the American college football network (Evans, 2010; Girvan and Newman, 2002) or Lusseau’s network of bottlenose dolphins (Lusseau, 2003).”

METHODOLOGY Community detection in graphs

“The results of this technique appear good as compared to other spectral methods on artificial graphs generated with the planted γ -partition model (Condon and Karp, 2001), as well as on Zachary’s karate club (Zachary, 1977), Lusseau’s dolphins’ network (Lusseau, 2003) and a network of protein-protein interactions.”

METHODOLOGY Detecting community structure in networks

“4: Community structure in the social network of bot-tlenose dolphins assembled by Lusseau et al. [36, 37], extracted using the algorithm of Girvan and Newman [1].”

METHODOLOGY Finding and evaluating community structure in networks

“The network was compiled by Lusseau @38# from seven years of field studies of the dolphins, with ties between dolphin pairs being established by observation of statistically significant frequent association.”

METHODOLOGY Constructing, conducting and interpreting animal social network analysis

“those in dolphins (Lusseau 2003) and guppies (Croft, Krause & James 2004), were largely descriptive.”

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	5
Aalto University	Finland	SCImago #854 · THE =195 · QS =114	2
Dalhousie University	Canada	SCImago #1299 · THE 351–400 · QS 283	1
Macquarie University	Australia	SCImago #1047 · THE =166 · QS =138	1
Cornell University	United States	SCImago #61 · THE =18 · QS 16	1
Tianjin University	China	SCImago #90 · THE 201–250 · QS =257	1
University of Oxford	United Kingdom	SCImago #26 · THE 1 · QS 4	1
Queen Mary University of London	United Kingdom	SCImago #416 · THE =134 · QS =110	1
National Research Council	Italy	—	1
Indiana University	United States	THE =198	1
Wroclaw University of Science and Technology	Poland	SCImago #2622 · QS 851-900	1
University of Zaragoza	Spain	THE 1001–1200	1

Institution	Country	World ranking	Citing papers
University of Delhi	India	SCImago #2052 · THE 601–800 · QS =328	1
Academy of Mathematics and Systems Science, Chinese Academy of Sciences	China	SCImago #5652	1
Umeå University	Sweden	SCImago #1412 · THE 401–500 · QS =401	1

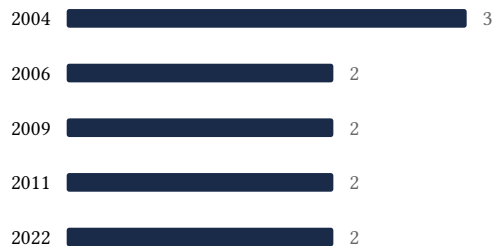
Geographic distribution of citing authors

Country	Citing papers
United States	9
United Kingdom	2
Italy	2
Ecuador	1
Finland	1
India	1
Poland	1
South Korea	1
Spain	1
Sweden	1
Australia	1
Vietnam	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	The bottlenose dolphin community of Doubtful Sound features a large proportion of long-lasting associations: Can geographic isolation explain this unique trait?	8	Dhanasar – Prong 2 (well-positioned)
Contribution 2	The emergent properties of a dolphin social network	10	Dhanasar – Prong 2 (well-positioned)