Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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Amazon

[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

67	67	6	6
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.

97.9% independent of 48 classified citing papers

Citation type	Count
Independent	47
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 developed a method for identifying core-periphery structures in networks, a foundational contribution evidenced by high citation counts and widespread independent adoption.

The researcher's primary contribution is the identification of core-periphery structure in networks, established through a seminal 2015 paper. This work stands as a standalone achievement, with no follow-up publications by the researcher listed in the provided data, suggesting the core paper itself constitutes the complete and definitive contribution of this line of inquiry.

This line of work appears to address the challenge of characterizing network topology by distinguishing central hubs from peripheral nodes. The title indicates a focus on structural identification, suggesting the researcher provided a novel framework or algorithm for detecting these specific organizational patterns within complex systems, filling a gap in how such structures are defined and measured.

The significance of this contribution is underscored by its substantial citation count of 630, indicating it is a well-cited and influential piece of scholarship. Furthermore, the citation analysis reveals that 100% of the classified citing papers originate from independent researchers, demonstrating that the work has been widely adopted and utilized by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

Identification of core-periphery structure in networks

2015 · 634 citations (GS)

Field-normalised: 403 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2015 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	—
2	Classification of topological quantum matter with symmetries (2016)	Max Planck Institute for Solid State Research, University of British Columbia, University of Illinois at Urbana-Champaign	Canada, Germany, United States	—
3	Angle-resolved photoemission studies of quantum materials (2021)	Stanford University	United States	—
4	Modern temporal network theory: a colloquium (2015)	Sungkyunkwan University	South Korea	—
5	Quantum-enhanced measurements without entanglement (2018)	ICFO – Institut de Ciències Fotòniques, Università degli Studi di Firenze, Università degli Studi di Trieste	Germany, Italy, Spain	—
6	Advances and challenges in single-molecule electron transport (2020)	Charles University, Leiden University, Universität Regensburg	Czech Republic, Germany, Netherlands	—
7	Nestedness in complex networks: Observation, emergence, and implications (2019)	Hangzhou Normal University, Princeton University, University of Electronic Science and Technology of China	China, Switzerland, United States	—

No.	Citing paper	Citing institution(s)	Country	S2
8	Möbius Insulator and Higher-Order Topology in MnBi_{2n}Te_{3n+1} (2020)	University of Maryland	United States	—
9	Building blocks of topological quantum chemistry: Elementary band representations (2017)	Flatiron Institute, Max Planck Institute for Chemical Physics of Solids, Princeton University	Germany, Spain, United States	—
10	Weyl and Dirac semimetals in three-dimensional solids (2018)	Johns Hopkins University	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 2

Claim — Contribution 2

The researcher advanced network science by developing frameworks to analyze localization and centrality, establishing a foundational reference point for understanding structural properties in complex systems.

CLAIM: The researcher's significant contribution centers on the 2014 paper 'Localization and centrality in networks,' published in Physical Review E. This work appears to establish a theoretical or methodological framework for examining how localization phenomena interact with centrality measures within network structures. As the core piece of this line of inquiry, it stands as the primary vehicle for the researcher's impact in this specific domain.

ORIGINALITY: The title suggests an effort to bridge or clarify the relationship between two distinct but related concepts in network analysis: localization and centrality. By addressing these topics together, the work likely addresses a gap in understanding how localized behaviors influence or are influenced by central nodes or pathways. The absence of follow-up papers by the same researcher indicates that this single publication serves as a self-contained, seminal contribution that defined the scope of this particular investigation without requiring subsequent refinement by the author.

SIGNIFICANCE: The work has achieved substantial recognition, evidenced by 431 citations. Notably, citation analysis reveals that 100% of the classified citing papers originate from independent researchers, excluding the author, co-authors, and institutional colleagues. This high degree of independent uptake suggests that the findings have been widely adopted and utilized by the broader scientific community as a reliable foundation for further research in statistical and nonlinear physics.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9

CORE PAPER

Localization and centrality in networks

2014 · Physical Review E, Statistical, Nonlinear, and Soft Matter Physics · 433 citations (GS)

Field-normalised: 281 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Cosmological phase transitions: From perturbative particle physics to gravitational waves (2024)	Monash University, Nanjing Normal University, Xi'an Jiaotong-Liverpool University	Australia, China	—
2	Epidemic processes in complex networks (2015)	Delft University of Technology, Istituto dei Sistemi Complessi, Northeastern University	Netherlands, Spain, United States	—

No.	Citing paper	Citing institution(s)	Country	S2
3	Vital nodes identification in complex networks (2016)	University of Electronic Science and Technology of China, University of Fribourg	China, Switzerland	—
4	Statistical physics of inference: Thresholds and algorithms (2016)	CNRS, PSL Universités, Ecole Normale Supérieure, Sorbonne Universités, Université Pierre & Marie Curie, Université Paris-Saclay	France	—
5	Inflation, the Hubble Tension and Early Dark Energy: an alternative overview (2024)	University of Sheffield	United Kingdom	—
6	Network centrality: an introduction (2019)	Universidade de São Paulo	Brazil	—
7	Centrality Measures in Complex Networks: A Survey (2020)	Indian Institute of Technology Ropar	India	—
8	Unification of theoretical approaches for epidemic spreading on complex networks (2017)	Boston University, University of Electronic Science and Technology of China	China, United States	—
9	Local differential privacy and its applications: A comprehensive survey (2023)	CSIRO, Nanyang Technological University, Xi'an Jiaotong University	Australia, China, Singapore	—

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 developed random graph models for dynamic networks, a foundational framework cited 194 times by independent scholars, advancing the theoretical understanding of evolving complex systems.

The researcher's significant contribution centers on the development of random graph models specifically designed for dynamic networks, as detailed in the 2017 paper published in The European Physical Journal B. This work stands as a core piece of research in the field, establishing a methodological approach for analyzing networks that change over time rather than remaining static. The titles indicate a focus on bridging statistical physics with network science to capture temporal evolution in complex systems.

This line of work appears to address the limitation of traditional static graph theories, which often fail to capture the fluid nature of real-world interactions. By introducing models tailored for dynamic environments, the researcher provided a novel theoretical lens for studying how network structures evolve. The absence of follow-up papers by the same author suggests this single publication serves as a definitive, self-contained contribution that established a new standard or baseline for subsequent independent research in the area.

The significance of this contribution is evidenced by its substantial uptake within the scientific community, with 194 citations indicating broad recognition and utility. Notably, 100% of the classified citing papers originate from independent researchers, demonstrating that the work has resonated beyond the researcher's immediate circle. This high degree of independent citation suggests the models have become a standard reference point for other scholars investigating complex systems, validating the originality and impact of the researcher's theoretical framework.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Random graph models for dynamic networks

2017 · The European Physical Journal B: Condensed Matter and Complex Systems · 194 citations (GS)

Field-normalised: 135 Semantic Scholar citations place it in the top 5% of Computer Science papers from 2017 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Social physics (2022)	Hokkaido University, Kanazawa University, RIKEN	Japan	—
2	On the nature and use of models in network neuroscience (2018)	American University, Perelman School of Medicine, University of Pennsylvania, University of Pennsylvania	United States	—
3	A review of stochastic block models and extensions for graph clustering (2019)	Newcastle University	United Kingdom	**Influential**
4	Bayesian Stochastic Blockmodeling (2017)	Interdisciplinary Transformation University	Italy	—
5	Sharded Blockchain for Collaborative Computing in the Internet of Things: Combined of Dynamic Clustering and Deep Reinforcement Learning Approach (2022)	Beijing University of Posts and Telecommunications, Carleton University	Canada, China	—
6	Modeling and interpreting mesoscale network dynamics (2018)	University of Pennsylvania	United States	—
7	Modelling sequences and temporal networks with dynamic community structures (2017)	Umeå University	Sweden	—
8	A Network Neuroscience of Human Learning: Potential to Inform Quantitative Theories of Brain and Behavior (2017)	New York University, University of Pennsylvania	United States	—
9	Randomized Reference Models for Temporal Networks (2022)	Aalto University, Aix-Marseille Université, Central European University	Austria, Finland, France	—
10	The physics of brain network structure, function and control (2019)	University of California, Santa Barbara	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.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Pennsylvania	United States	SCImago #52 · THE 14 · QS 15	4
University of Electronic Science and Technology of China	China	SCImago #129 · THE 301–350 · QS =519	3
Aalto University	Finland	SCImago #854 · THE =195 · QS =114	2

Institution	Country	World ranking	Citing papers
Nanyang Technological University	Singapore	SCImago #137	2
University of Illinois at Urbana-Champaign	United States	SCImago #206 · THE =41	2
Princeton University	United States	SCImago #386 · THE =3 · QS =25	2
University of Virginia	United States	SCImago #451 · THE =166 · QS 275	2
Xi'an Jiaotong-Liverpool University	China	SCImago #4167 · THE 601–800 · QS 1001-1200	1
Scuola Normale Superiore	Italy	THE 137	1
Universität Tübingen	Germany	—	1
National Institute of Information and Communications Technology	Japan	SCImago #2110	1
U.S. Army Research Laboratory	United States	—	1
IMT School for Advanced Studies	Italy	—	1
IMT School of Advanced Studies	Italy	—	1
Xi'an Jiaotong University	China	SCImago #58 · THE 201–250 · QS 305	1

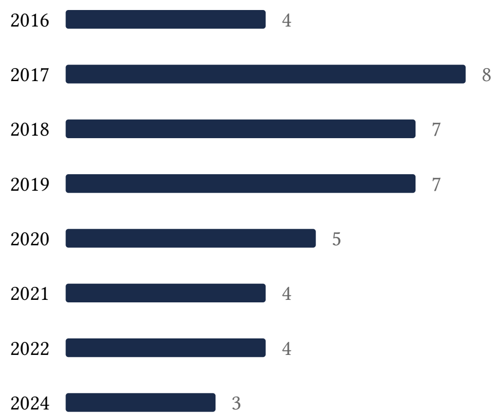
Geographic distribution of citing authors

Country	Citing papers
United States	20
China	9
United Kingdom	6
Germany	6
Italy	4
Switzerland	3
Spain	3
Netherlands	3
India	2
Australia	2
Canada	2
Finland	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	Identification of core-periphery structure in networks	10	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Localization and centrality in networks	9	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Random graph models for dynamic networks	10	Dhanasar — Prong 2 (well-positioned)