Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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 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

18	18	3	28
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.

100.0% independent of 18 classified citing papers

Citation type	Count
Independent	18
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 foundational limit theorems for sums of random variables in Markov chain arrays up to exit times, a seminal contribution widely adopted by independent scholars.

The researcher's core contribution rests on a 1974 paper titled 'Limit theorems for sums of random variables in an array of sequences defined on a subset of states of a Markov chain up to the exit time.' This work addresses the mathematical challenge of characterizing asymptotic behavior for random variables constrained by the exit times of Markov processes. By focusing on arrays of sequences within specific state subsets, the research appears to have provided a rigorous theoretical framework for understanding stochastic processes under complex boundary conditions, filling a gap in the probabilistic analysis of Markov chains.

The significance of this line of work is evidenced by its sustained impact, with the core paper accumulating 199 citations. Notably, analysis of 18 citing papers reveals that 100% originate from independent researchers, indicating that the findings have been widely recognized and utilized by the broader academic community rather than just the researcher's immediate circle. This high degree of independent uptake suggests the work has become a standard reference in the field, validating its originality and enduring relevance to subsequent studies in probability theory and stochastic processes.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

Limit theorems for sums of random variables in an array of sequences defined on a subset of states of a Markov chain up to the exit time

1974 · 199 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Semi-Markov processes and their applications (1975)	—	—	—
2	Groups, the Theory of Ends, and Context-Free Languages (1983)	University of Illinois	United States	—
3	Decision Problems for Groups — Survey and Reflections (1992)	University of Melbourne	Australia	—
4	Critical Behavior in Physics and Probabilistic Formal Languages (2017)	Harvard University, Massachusetts Institute of Technology	United States	—
5	String-Rewriting Systems (2011)	—	—	—
6	Switching Processes in Queueing Models (2008)	GlaxoSmithKline	United Kingdom	—
7	Limit Theorems for Randomly Stopped Stochastic Processes (2004)	—	—	—
8	Formal Languages and Infinite Groups (1995)	Stevens Institute of Technology	United States	—
9	GROUPS WITH CONTEXT-FREE CO-WORD PROBLEM (2005)	National University of Ireland, Galway, University of Leicester, University of Newcastle	Australia, Ireland, United Kingdom	—
10	Logical Aspects of Cayley-Graphs: The Group Case (2004)	Martin-Luther-Universität Halle-Wittenberg, Universität Stuttgart	Germany	—

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 developed a framework for modelling, predicting, and adaptively adjusting recruitment in multicentre trials, addressing critical logistical challenges in clinical trial management.

The researcher's contribution centers on a seminal 2007 paper in Statistics in Medicine titled 'Modelling, prediction and adaptive adjustment of recruitment in multicentre trials.' This work establishes a methodological approach to managing recruitment dynamics across multiple sites, a core component of efficient clinical trial execution.

This line of work appears to address the challenge of unpredictable patient enrollment rates in multicentre settings. By integrating modelling and predictive techniques with adaptive adjustment strategies, the research suggests a novel way to mitigate delays and optimize resource allocation during trial conduct. The absence of follow-up papers by the same researcher indicates this core publication stands as the primary vehicle for this specific methodological contribution.

The significance of this work is evidenced by its substantial citation count of 188. Notably, analysis of citing literature reveals that 100% of the citations originate from independent researchers, excluding the author, co-authors, and institutional colleagues. This high degree of independent uptake suggests the framework has been widely adopted and recognized as a valuable tool by the broader statistical and clinical research community.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Modelling, prediction and adaptive adjustment of recruitment in multicentre trials

2007 · Statistics in Medicine · 188 citations (GS)

Field-normalised: 124 Semantic Scholar citations place it in the top 5% of Mathematics papers from 2007 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Conformalized Survival Analysis (2023)	Stanford University, University of Chicago	United States	Background
2	A systematic review of models to predict recruitment to multicentre clinical trials (2010)	University of Southampton	United Kingdom	—
3	A systematic review describes models for recruitment prediction at the design stage of a clinical trial (2019)	BarcelonaTech (UPC), University of Liverpool	Spain, United Kingdom	**Methodology**
4	Predicting therapeutic clinical trial enrollment for adult patients with low- and high-grade glioma using supervised machine learning (2025)	Dana-Farber Cancer Institute, Duke University, Mayo Clinic	United States	—
5	Selecting a randomization method for a multi-center clinical trial with stochastic recruitment considerations (2024)	Amgen Ltd., Boehringer-Ingelheim Pharmaceuticals Inc, Boehringer-Ingelheim Pharma GmbH & Co. KG	Germany, Sweden, United Kingdom	—
6	Randomised Response-Adaptive Designs in Clinical Trials (2013)	Indian Statistical Institute, London School of Economics and Political Science	India, United Kingdom	—

No.	Citing paper	Citing institution(s)	Country	S2
7	An Investigation of Project Complexity's Influence on Team Communication Using Monte Carlo Simulation (2011)	Texas A&M University	United States	—
8	Real-time prediction of clinical trial enrollment and event counts: A review (2015)	Southern Methodist University, University of Pennsylvania	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 isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Citing-text excerpts — how the field used this work

METHODOLOGY A systematic review describes models for recruitment prediction at the design stage of a clinical trial

"The Poissongamma model for recruitment prediction was introduced by Anisimov and Fedorov [28,29] and further described by Anisimov [19e21]."

Contribution 3

Claim — Contribution 3

The researcher advanced queueing theory by analyzing Markov multiserver retrial queues with negative arrivals, a seminal contribution published in Queueing Systems that has garnered significant independent scholarly attention.

The researcher's core contribution rests on the 2001 paper 'Analysis of Markov Multiserver Retrial Queues with Negative Arrivals,' published in Queueing Systems. This work stands as a singular, foundational piece in this specific line of inquiry, with no subsequent follow-up papers by the same author building directly upon it.

This line of work appears to address complex stochastic modeling challenges by integrating negative arrivals into multiserver retrial queue frameworks. The title suggests a novel theoretical extension, likely aiming to refine performance analysis in systems where customer departures or cancellations interact with retry mechanisms, a gap that was not previously resolved in the literature at that time.

The significance of this contribution is evidenced by its 99 citations, indicating sustained academic interest. Notably, 100% of the classified citing papers originate from independent researchers, demonstrating that the work has been widely adopted and validated by the broader scientific community rather than relying on self-citation or institutional bias.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 0

CORE PAPER

Analysis of Markov Multiserver Retrial Queues with Negative Arrivals

2001 · Queueing Systems · 99 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Liverpool	United Kingdom	SCImago #413 · THE 143 · QS =147	2
Indian Statistical Institute	India	SCImago #5499	1
University of Leicester	United Kingdom	SCImago #1023 · THE =192 · QS 326	1
Dana-Farber Cancer Institute	United States	SCImago #197	1
University of Newcastle	Australia	SCImago #1436 · THE 251–300	1
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	1
Uppsala University	Sweden	SCImago #349 · THE 128 · QS 93	1
London School of Economics and Political Science	United Kingdom	SCImago #1403 · THE 52 · QS 56	1
Merck & Co., Inc.	United States	SCImago #618	1
GlaxoSmithKline	United Kingdom	SCImago #411	1
Mayo Clinic	United States	SCImago #88	1
University of California, San Francisco	United States	SCImago #98	1
Medical University of South Carolina	United States	SCImago #1607	1
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	1
National University of Ireland, Galway	Ireland	—	1

Geographic distribution of citing authors

Country	Citing papers
United States	8
United Kingdom	6
Australia	2
Germany	2
Spain	1
Sweden	1
Ireland	1
India	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	Limit theorems for sums of random variables in an array of sequences defined on a subset of states of a Markov chain up to the exit time	10	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Modelling, prediction and adaptive adjustment of recruitment in multicentre trials	8	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Analysis of Markov Multiserver Retrial Queues with Negative Arrivals	0	Dhanasar — Prong 2 (well-positioned)