DO POPULAR RESEARCH TOPICS ATTRACT THE MOST SOCIAL ATTENTION?

A first proposal based on OpenAlex and Wikipedia

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doi: 10.5281/zenodo.8390283

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CWTS Meaningful metrics

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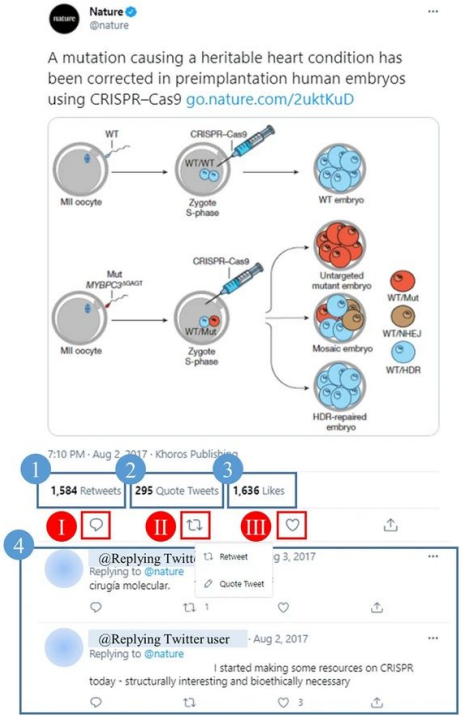
STI ENID 2023

1. INTRODUCTION



Twitter Engagement Functionalities:

I **Reply:** Make a response to a tweet by clicking or tapping the icon.

II **Retweet:** Share a tweet by choosing the "Retweet" option after clicking or tapping the icon.

Quote Tweet: Share a tweet with own comment added by choosing the "Quote Tweet" option after clicking or tapping the icon.

III **Like:** Show appreciation for a tweet by clicking or tapping the icon.

User Engagement Metrics:

1 **Retweets**: times a tweet has been retweeted.

2 **Quote Tweets (Quotes)**: times a tweet has been quoted (i.e., retweeted with comment).

3 **Likes**: times a tweet has been liked.

4 **Replies**: times a tweet has been replied. Detailed content of replies are visible at the bottom of the tweet, while the total number of replies received is accessible with the Twitter API.

Altmetrics has expanded from just counting mentions to encompassing broader social interactions

Twitter showcases the depth of **science-social engagement**

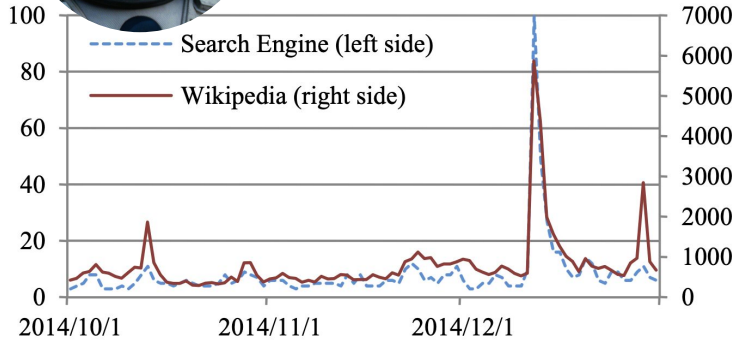
Fang, Z., Costas, R., & Wouters, P. (2022). User engagement with scholarly tweets of scientific papers: A large-scale and cross-disciplinary analysis. *Scientometrics*, 127(8), 4523-4546. https://doi.org/10.1007/s11192-022-04468-6

1. INTRODUCTION

Wikipedia offers diverse **metrics** capturing global interactions

N. of articles → / Wiki Metrics ↓	All articles	Featured articles	Featured lists	A	Good	B	C	List	Start	Stub
	6,328,134	5945	3816	958	34,004	109,019	394,065	253,066	1,818,356	3,079,778
Editors	48.38	516.93	179.13	176.80	275.71	297.62	165.36	56.27	63.13	22.85
Edits	101.92	1491.35	593.61	564.91	724.13	705.41	369.89	159.80	129.52	40.23
Linked	80.53	725.25	175.84	202.01	330.18	417.00	234.08	107.34	93.03	55.70
Links	87.77	329.68	270.16	236.56	224.88	233.87	164.23	174.78	101.28	69.90
Age	9.59	14.33	11.52	12.74	12.06	12.47	10.92	9.13	10.45	9.20
Length	7844.68	61,248	51,549	43,329	39,444	35,009	21,676	18,202	10,033	3748
Talkers	5.38	66.17	16.62	27.90	29.64	28.16	15.03	4.98	6.56	3.64
Talks	9.19	258.40	42.36	92.21	88.56	88.35	35.32	9.07	9.69	4.32
Views	3345.07	64,801	26,685	16,011	29,229	30,359	15,829	3777	4094	710
References	4.6	53.95	55.49	31.76	38.87	26.51	15.40	9.20	5.79	1.84
Pub. Ref.	0.59	14.27	2.34	8.51	5.83	4.77	2.37	0.53	0.69	0.22
URLs	10.33	58.03	67.32	33.32	46.10	40.31	25.95	22.82	12.90	6.09

Arroyo-Machado, W., Torres-Salinas, D., & Costas, R. (2022). Wikinformetrics: Construction and description of an open Wikipedia knowledge graph data set for informetric purposes. *Quantitative Science Studies*, 3(4), 931-952. https://doi.org/10.1162/qss_a_00226



Page views correlate with societal phenomena

Yoshida, M., Arase, Y., Tsunoda, T., & Yamamoto, M. (2015). Wikipedia page view reflects web search trend. *Proceedings of the ACM Web Science Conference*, 1-2. https://doi.org/10.1145/2786451.2786495

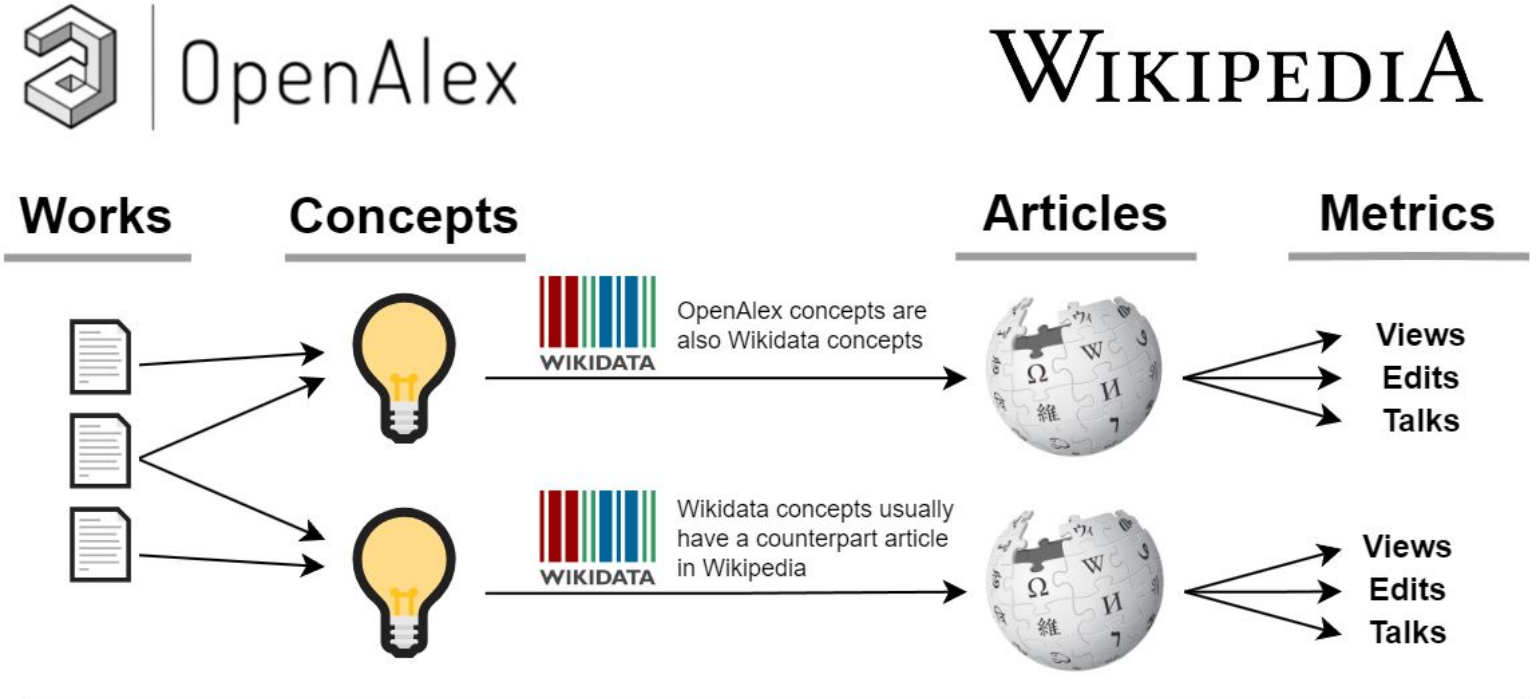
1. OBJECTIVES

This study assesses the alignment of prominent academic research topics with their social attention. **Scholarly outputs** counts and **Wikipedia page views** are used as a proxy for academic interest and social attention, respectively.

Specific objectives

1. Determine the correlation between scholarly outputs and Wikipedia page views for research subjects.
2. Investigate potential disparities in attention from the two metrics for primary and expansive research areas

2. METHODOLOGY



2. METHODOLOGY

	Number of concepts	%	English Wikipedia articles
Level 0	19	0,03%	19
Level 1	284	0,44%	271
Level 2	21,460	32,98%	21,090
Level 3	24,768	38,06%	24,372
Level 4	12,406	19,06%	12,196
Level 5	6136	9,43%	5985
Total	**65,073**	**100%**	**63,933**

Wikipedia Knowledge Graph dataset
doi:10.5281/zenodo.6346900

Data

Metadata for English Wikipedia articles, including 3-month page views for 2021

Methods

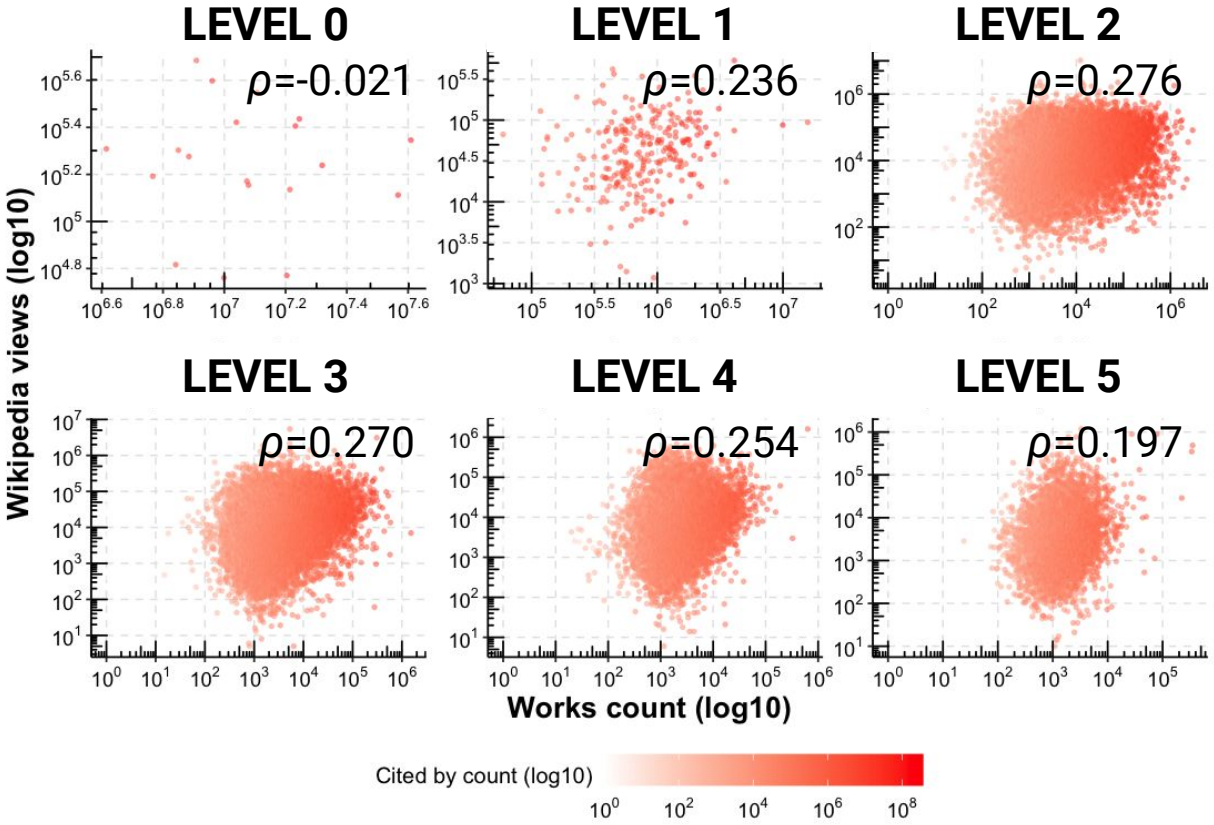
Spearman correlation was calculated to assess the existence of such relationships

3. **RESULTS//** Correlations analyses

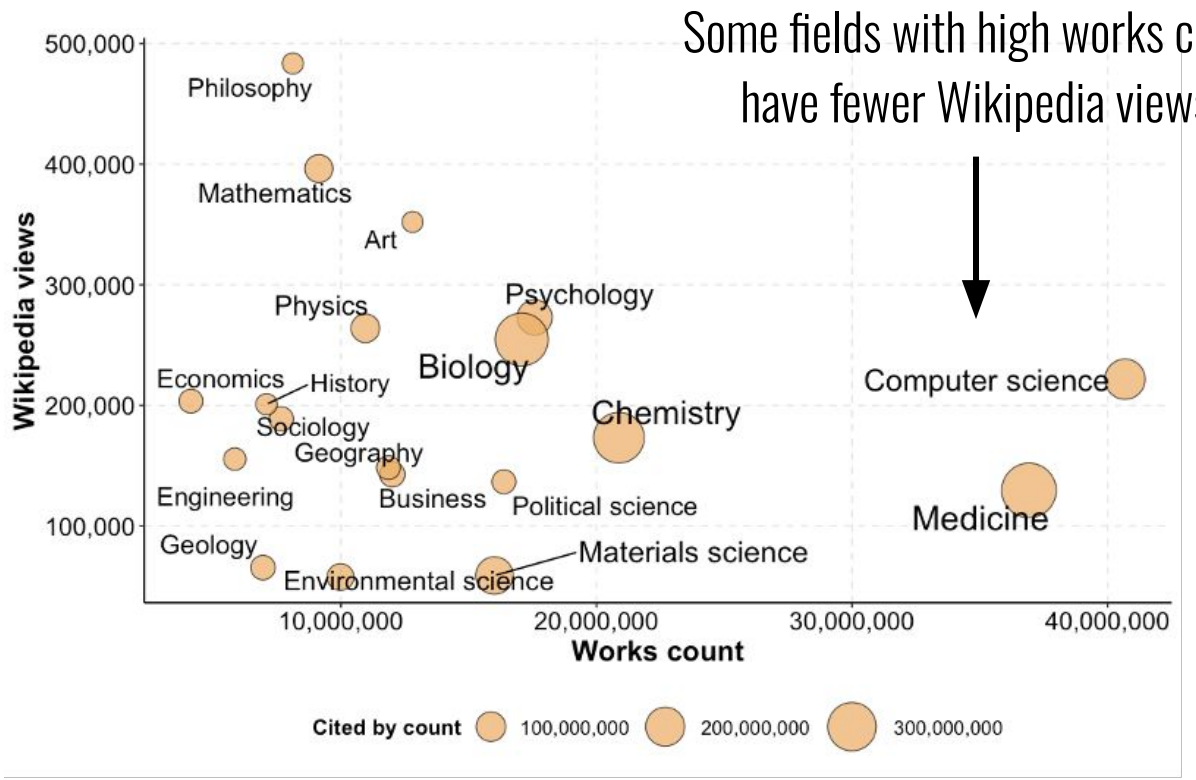
No clear correlation

between publication volume and Wikipedia attention

High scientific interest does not equate to high Wikipedia engagement



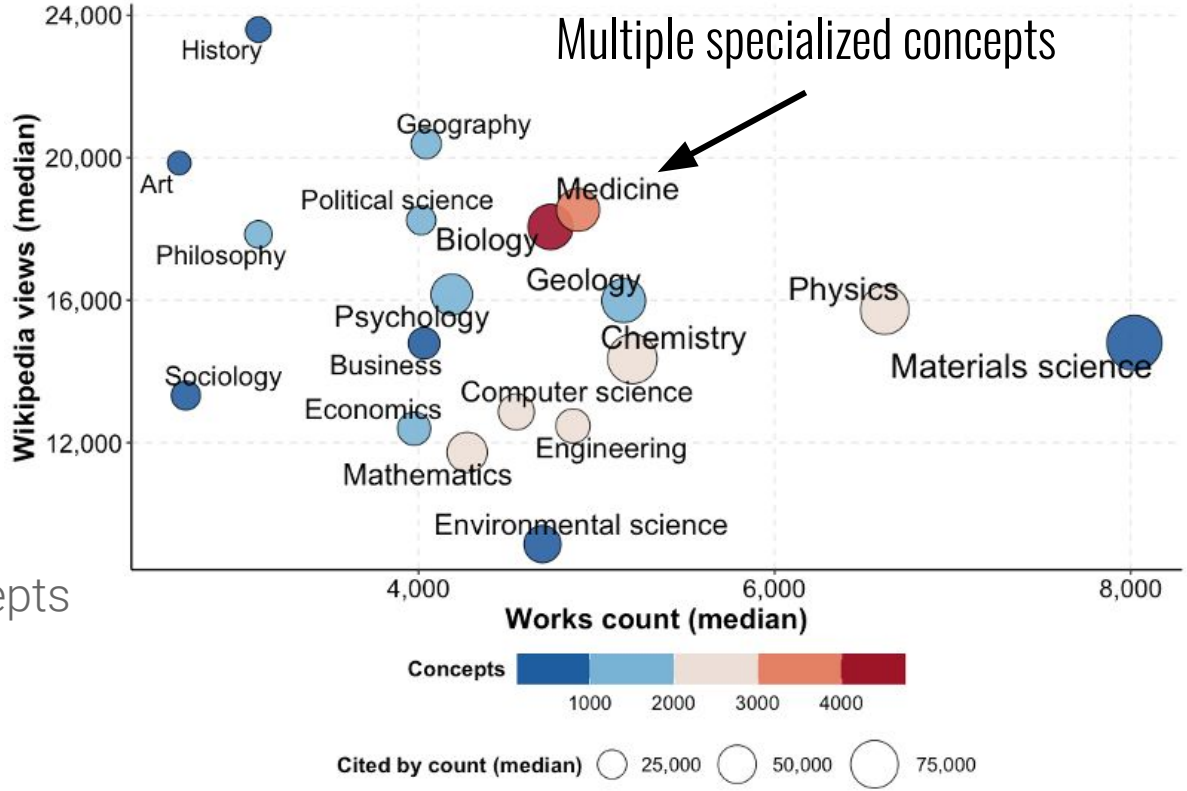
3. **RESULTS//** Analysis of major research topics



Clear **disparities** between scholarly outputs and Wikipedia engagement for major concepts

Methodology is restrictive in comparing vast scientific fields to single Wikipedia articles

3. **RESULTS//** Analysis of major research topics



Aggregated analysis integrates sub-level concepts for more detailed insight

4. DISCUSSION

1. **Research is preliminary with recognized limitations**
2. Discrepancy observed in Wikipedia attention and scholarly outputs, especially in humanities and social sciences
3. Further research:
    a. synchronizing data timelines
    b. diversifying data sources (e.g., all languages)
    c. refining statistical methods

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