

Do Science Articles in Wikipedia reflect on state-of-the-art Research?

*Study of Wikipedia-metrics in
articles about Social Sciences*

Olga Zagovora





WIKIPEDIA
The Free Encyclopedia



Gender pay gap

[All](#) [Images](#) [News](#) [Videos](#) [Books](#)

About 11,400,000 results (0,64 seconds)

Scholarly articles for Gender pay gap

- ... ceiling over Europe? Exploring the **gender pay gap**
- ... international differences in the **gender pay gap** - E
- The US **gender pay gap** in the 1990s: Slowing ... - E

The **gender pay gap** is the average difference between a man's and a woman's **wages** or

Gender pay gap - Wikipedia

https://en.wikipedia.org/wiki/Gender_pay_gap



References

Ge
ec.e
The
pract
Wha

Ge
http:
The
Over

1. ^ O'Brien, Sara Ashley (April 14, 2015). "78 cents on the dollar: The facts about the gender wage gap". *CNN Money*. New York. Retrieved May 28, 2015. "7% wage gap between male and female college grads a year after graduation even controlling for college major, occupation, age, geographical region and hours worked."
2. ^ Schwab, Klaus, et al. *The Global Gender Gap Report 2015*. *World Economic Forum*. 2015, pp. 8-9. <http://www3.weforum.org/docs/GGGR2015/cover.pdf>. Accessed 29 Sept. 2016.
3. ^ Weichselbaumer, Doris; Winter-Ebmer, Rudolf (2005). "A Meta-Analysis on the International Gender Wage Gap" (PDF). *Journal of Economic Surveys*. **19** (3): 479–511. doi:10.1111/j.0950-0804.2005.00256.x.
4. ^ Stanley, T. D.; Jarrell, Stephen B. (1998). "Gender Wage Discrimination Bias? A Meta-Regression Analysis". *The Journal of Human Resources*. **33** (4): 962. doi:10.2307/146404. JSTOR 146404.
5. ^ Manning, Alan (2006). "The gender pay gap" (PDF). *CentrePiece*. Centre for Economic Performance. **11** (1): 13–16.
6. ^ Woolcock, Nicola. *Women will earn the same as men – if they wait 150 years*. *The Sunday Times*, July 28, 2006.
7. ^ Goodley, Simon (2011-08-31). "Women executives could wait 98 years for equal pay, says report". *The Guardian*. London. Retrieved August 31, 2011. "While the salaries of female executives are increasing faster than those of their male counterparts, it will take until 2109 to close the gap if pay grows at current rates, the Chartered Management Institute reveals."

Gender pay gap

From Wikipedia, the free encyclopedia

The **gender pay gap** is the average difference between a man's and a woman's **wages** or **salaries**.

There are two distinct numbers regarding the pay gap: *unadjusted* versus *adjusted* pay gap which takes into account differences in hours worked, occupations chosen, education and job experience.

For example, someone who takes time off (e.g. maternity leave) will likely not earn as much as someone who does not take time off from work. Factors like this contribute to lower yearly earnings for women, but when all external factors have been adjusted for, there still exists a gender pay gap in many situations (between 4.8% and 7.1% according to one study). *Unadjusted* pay gaps are much higher. In the United States, for example the unadjusted *average* female's annual salary has commonly been cited as being 78% of the *average* male salary.^[1]

The World Economic Forum provides recent data from 2015 that evaluates the gender pay gap in 145 countries. Their evaluations take into account economic participation and opportunity, educational attainment, health and survival, and political empowerment scores.^[2]

Contents [\[show\]](#)

Over time

A wide-ranging *meta-analysis* by Doris Weichselbaumer and Rudolf Winter-Ebmer (2005) of more than 260 published adjusted pay gap studies for over 60 countries has found that, from the 1960s to the 1990s, raw wage differentials worldwide have fallen substantially from around 65 to 30%. The bulk of this decline, however, was due to

the unexplained component of and Winter-Ebmer found that s, implying a slow level of

ap" *CNN Money*. New York. ation even controlling for

3. r Wage Gap" (PDF). *Journal*

analysis". *The Journal of* ance. **11** (1): 13–16. s, July 28, 2006.

" *The Guardian*. London. e of their male counterparts, it e reveals."



Main Steps: 1. Get set of articles about social sciences

1. get start point links from Template Social Sciences
 - add links to a list of pages
2. go to each page and find all templates
 - Filter templates
3. Get links from each template
 - add links to the list of pages

V · T · E		Social sciences	[hide]
Primary		Anthropology (archaeology · culture) · Economics (microeconomics · macroeconomics) · Geography (human · integrative) · Law (jurisprudence · legal systems) · Political science · Public administration · Psychology (abnormal · biological · personality · social) · Sociology (internet · rural · urban)	
	Interdisciplinary	Anthrozoology · Area studies · Business · Cognitive science · Communication · Community studies · Cultural studies · Education · Environmental (social) · Food studies · Gender studies · History of technology · Human ecology · International studies · Media studies (economics · history · psychology) (land use · regional · urban) · Political economy · Public health · Science and technology studies · Social work	

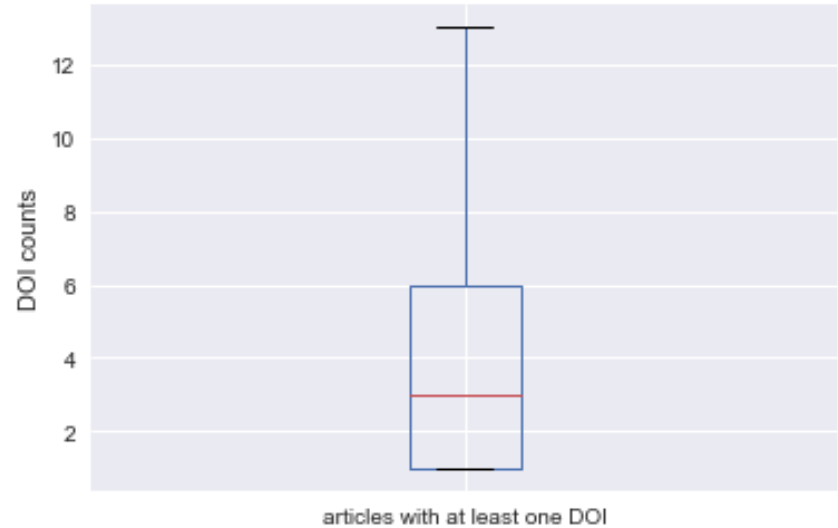
Data: 2698 articles

Anthropology
Outline · History
Types [hide]
Archaeological · Biological · Cultural · Linguistic · Social
Archaeological [hide]
Aerial · Aviation · Battlefield · Biblical · Bioarchaeological · Environmental · Ethnoarchaeological · Feminist · Forensic · Maritime · Paleoethnobotanical · Zooarchaeological
Biological [hide]
Anthrozoological · Biocultural · Evolutionary · Forensic · Molecular · Neurological · Nutritional · Palaeoanthropological · Primatological
Social · Cultural [hide]
Applied · Art · Cognitive · Cyborg · Development · Digital · Ecological · Environmental · Economic · Political economy · Historical · Feminist · Kinship · Legal · Media · Medical · Museums · Musical · Political · Psychological · Public · Religion · Symbolic · Transpersonal · Urban · Visual
Linguistic [hide]
Anthropological · Descriptive · Ethnological · Ethnopoetical · Historical · Semiotic · Sociological
Research framework [hide]
Anthropometry · Ethnography (online) · Ethnology · Cross-cultural comparison · Participant observation · Holism · Reflexivity · Thick description · Cultural relativism · Ethnocentrism · Emic and etc
Key concepts [hide]
Culture · Development · Ethnicity · Evolution (sociocultural) · Gender · Kinship and descent · Meme · Prehistory · Race · Society · Value · Colonialism / Postcolonialism
Key theories [hide]
Actor-network theory · Alliance theory · Cross-cultural studies · Cultural materialism · Culture theory · Diffusionism · Feminism · Historical particularism · Boasian anthropology · Functionalism · Interpretive · Performance studies · Political economy · Practice theory · Structuralism · Post-structuralism · Systems theory
Lists [hide]
Anthropologists by nationality · Anthropology by year · Bibliography · Journals · List of indigenous peoples · Organizations

Main Steps: 2. Mine references and DOIs



- 6739 DOI
- 968 articles with at least one DOI



Article name	DOI counts	ISBN counts	<Ref> counts
Ecology	193	38	574
Hinduism	7	201	432
Evolution	247	2	389

Main Steps: 3a. Important articles in the field

- WoS highly cited papers
 - 1% of the most cited articles in the year
 - published during last 10 years
 - Field: Social Sciences (7679 articles with DOI), Economics (2194 articles with DOI)

- Altmetric.com articles with the highest altmetric score

- Most cited papers from Scopus
 - published during last 10 years
 - first 2000 articles sorted by citation counts
 - Field: Social Sciences and Economics



Main Steps: 3b. Compare set of highly cited articles in the field and *metrics



Wikipedia citations

- Scopus: overlap of 11 papers
- WoS Social Sc.: overlap of 54 papers
- WoS Economics: overlap of 9 papers
- Altmetric.com: overlap of 57 papers
- Is the “overlap of papers” drawn randomly from highly cited papers?
 - calculate sum of ranks
 - Simulation:
 - 10 000 random flips of labels (paper is cited in Wikipedia or not) in WoS/Scopus/Altmetric s
 - compute sum of ranks for new labeled as „cited in Wikipedia“

Wikipedia citations that are in WoS, Social Sciences



Article name	Citation counts	rank	Is cited in Wikipedia?
QUALITATIVE DATA ANALYSIS FOR HEALTH SERVICES ...	556	39	Yes
MECHANISMS LINKING SOCIAL TIES AND SUPPORT TO ...	380	111.5	Yes
HUMANS HAVE EVOLVED SPECIALIZED SKILLS OF SOCI...	315	175	Yes
EARLY HUMAN USE OF MARINE RESOURCES AND PIGMEN...	312	177	Yes
...

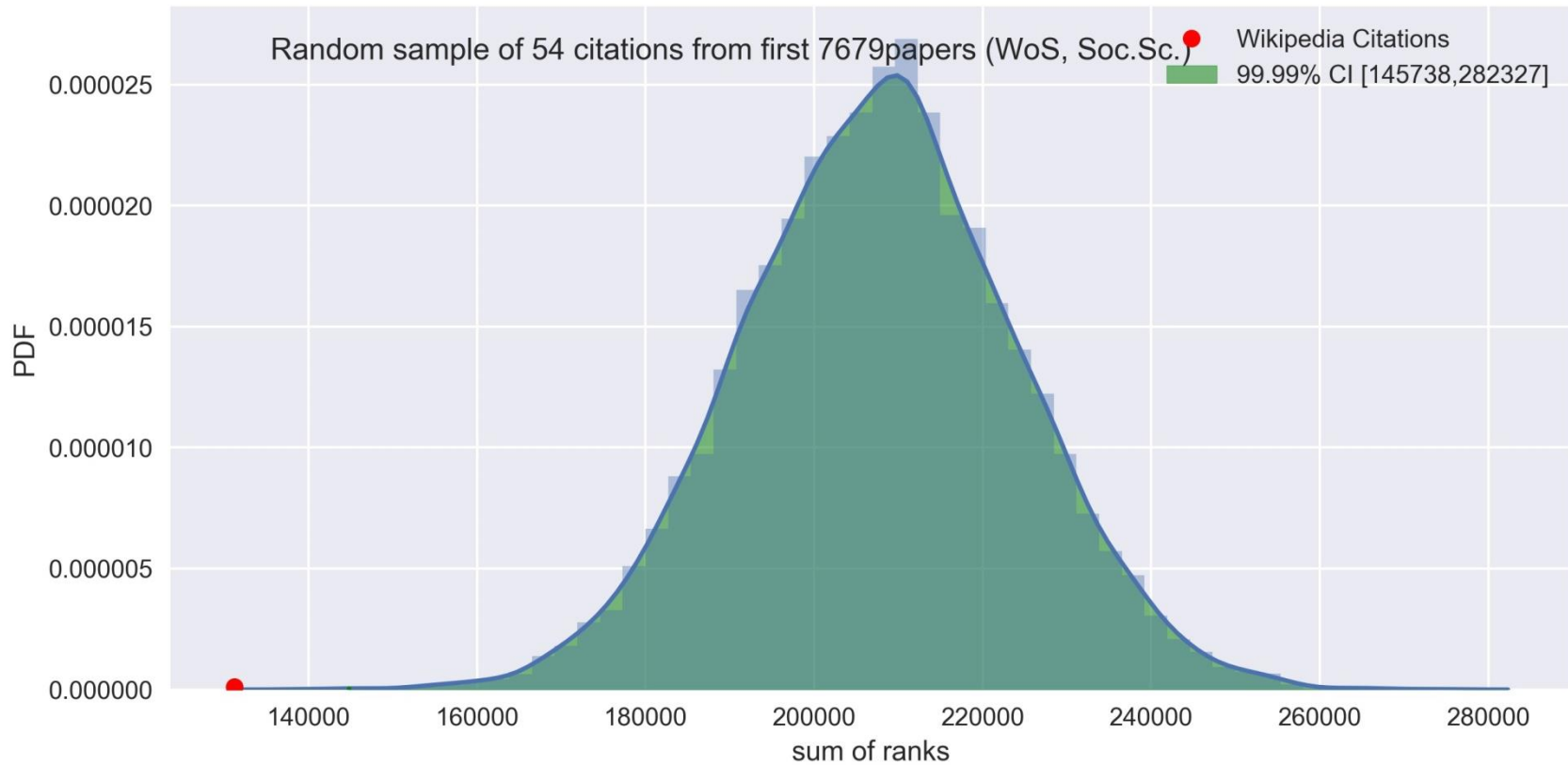
Simulation 1: WoS, Social Sciences



Article name	Citation counts	rank	Is cited in Wikipedia?
QUALITATIVE DATA ANALYSIS FOR HEALTH SERVICES ...	556	39	No
...
ARTICLE1 name	420	65	Yes
ARTICLE2 name	417	66	Yes
...
MECHANISMS LINKING SOCIAL TIES AND SUPPORT TO ...	380	111.5	No
...
HUMANS HAVE EVOLVED SPECIALIZED SKILLS OF SOCI...	315	175	...
ARTICLE3 name	314	176	Yes
EARLY HUMAN USE OF MARINE RESOURCES AND PIGMEN...	312	177	No
ARTICLE4 name	210	198	Yes
...

Repeat 10 000 times

Simulations: WoS, Social Sciences



Findings and Future Work

- Wikipedia citations tend to have higher
 - number of citations
 - from Web of Science DB
 - for most data chunks of Scopus
 - altmetric score
- Overlap of articles from Wikipedia and highly cited set is very small
- probability of getting exactly x citations from set of highly cited papers was omitted
- only papers with DOI were considered in all datasets
- only social science and economics were studied

-MEasuring The Reliability and perceptions of Indicators for interactions with sCientific productsS

- Objective:
 - develop a deeper understanding of *metrics (aka altmetrics / social media metrics), in terms of their general significance and their perception amongst stakeholders.
- Key considerations:
 - will include the quality of *metrics' underlying data (in terms of validity and reliability),
 - their ability to adequately assess scientific outputs against the background of disciplinary specificities.

Facts

Status: active

Project duration: 2017-01-01 - 2018-12-31

Key words

Electronic Publishing

Open Access

Metrics

Funding

Funding duration 2017-01-01 – 2019-12-31

German Research Foundation (DFG)

<https://metrics-project.net/>

- Thank you / Vielen Dank!
 - Olga.Zagovora@gesis.org
 - Web: metrics-project.net
 - Email: metrics-project@sub.uni-goettingen.de
 - Twitter @metrics_project
 - Facebook @metricsproject



References

1. H. Aaron and Dario Taraborelli, “Scholarly article citations in Wikipedia.” 05-Jan-2017. <https://doi.org/10.6084/M9.FIGSHARE.1299540.V9>
2. K. Kousha and M. Thelwall, “Are wikipedia citations important evidence of the impact of scholarly articles and books?,” *Journal of the Association for Information Science and Technology*, vol. 68, no. 3, pp. 762–779, Mar. 2017. <https://doi.org/10.1002/asi.23694>
3. E. C. McKiernan et al., “How open science helps researchers succeed,” *eLife*, vol. 5, pp. 372–382, Jul. 2016. <https://doi.org/10.7554/eLife.16800>
4. Mike Thelwall and Kayvan Kousha, “What do Wikipedia Citation Counts Mean? – The Altmetrics Conference – September 28-29, 2016,” 3:AM Bucharest, Blog. <http://altmetricsconference.com/what-do-wikipedia-citation-counts-mean/>
5. F. A. Nielsen, “Scientific citations in Wikipedia,” *First Monday*, vol. 12, no. 8, Aug. 2007. <https://doi.org/10.5210/fm.v12i8.1997>
6. J. Priem, H. A. Piwowar, and B. M. Hemminger, “Altmetrics in the wild: Using social media to explore scholarly impact,” *arXiv:1203.4745 [cs]*, Mar. 2012. <http://arxiv.org/abs/1203.4745>
7. X. Shuai, Z. Jiang, X. Liu, and J. Bollen, “A comparative study of academic and Wikipedia ranking,” 2013, p. 25. <https://doi.org/10.1145/2467696.2467746>
8. “Real-time Stream of DOIs being cited in Wikipedia – Crossref Blog.” <http://blog.crossref.org/2015/03/real-time-stream-of-dois-being-cited-in->