



Universiteit
Leiden
The Netherlands

Research Profiling of Gender Studies based on the Scientometric Indicators

Yun, B.; Lee, J.Y.; Yun, J.; Ahn, S.

Citation

Yun, B., Lee, J. Y., Yun, J., & Ahn, S. (2018). Research Profiling of Gender Studies based on the Scientometric Indicators. *Sti 2018 Conference Proceedings*, 703-706. Retrieved from <https://hdl.handle.net/1887/65350>

Version: Not Applicable (or Unknown)

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/65350>

Note: To cite this publication please use the final published version (if applicable).



STI 2018 Leiden

*23rd International Conference on Science and Technology Indicators
"Science, Technology and Innovation Indicators in Transition"*

STI 2018 Conference Proceedings

Proceedings of the 23rd International Conference on Science and Technology Indicators

All papers published in this conference proceedings have been peer reviewed through a peer review process administered by the proceedings Editors. Reviews were conducted by expert referees to the professional and scientific standards expected of a conference proceedings.

Chair of the Conference

Paul Wouters

Scientific Editors

Rodrigo Costas
Thomas Franssen
Alfredo Yegros-Yegros

Layout

Andrea Reyes Elizondo
Suze van der Luijt-Jansen

The articles of this collection can be accessed at <https://hdl.handle.net/1887/64521>

ISBN: 978-90-9031204-0

© of the text: the authors

© 2018 Centre for Science and Technology Studies (CWTS), Leiden University, The Netherlands



This ARTICLE is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

Research Profiling of Gender Studies based on the Scientometric Indicators¹

Bitnari Yun*, June Young Lee*, Jinhyuk Yun* and Sejung Ahn**†

*kisti0746@kisti.re.kr; road2you@kisti.re.kr; jinhyuk.yun@kisti.re.kr; sjahn@kisti.re.kr;

Future Technology Analysis Center, Korea Institute of Science and Technology Information, 66 Hoegiro, Dongdaemun-gu, Seoul, 02456 (Korea)

Introduction

The application of scientometric indicators is crucial to both research evaluation and the advance of science itself also (Chen & Song, 2017). Since indicators provide objective and comparable figures for research publications, individual researchers, and specific research units, they are considered as key elements that are used not only in research assessment but also in the decision making process regarding promotions or funding (Durieux & Gavenois, 2010). Indeed, the development and application of scientometric indicators have been performed by various institutes, universities and relevant companies (Leydesdorff & Milojevič, 2015).

In keeping with these trends, Korea Institute of Science and Technology Information(KISTI) developed the 'Insightful Integrated Indicators-Metrics(i*Metrics)' to calculate scientometric indicators for journal papers analysis. It is distinguished from other systems in that it aims at large-scale data processing with comprehensive data coverage and various normalized indicators. We can create profiles by country or discipline by using i*Metrics. In this study, we investigate the research trend and characteristics by country in the field of gender studies using journal papers published from 1999 to 2016 by KISTI i*Metrics system with selected indicators.

Data and methods

In this study, we used the SCOPUS Database developed at KISTI from the SCOPUS XML Custom Data provided by Elsevier. For investigating the characteristics of gender studies, we created the dataset using ASJC codes classification system of SCOPUS for the 'gender studies'.

The top 10 countries were selected based on the number of publications, and South Korea was added for comparison. Thus, we analyzed 29,219 research publications with document type of article, conference page, and review, which were published from 1999 to 2016 for 11 countries.

The indicators which are contained in i*Metrics are classified by four categories. We selected 11 indicators among the whole of 46 indicators in the research publication analysis module to identify the research achievements of gender studies by country. First, Number of Publication(NP), Activity Index(AI), and Compound Annual Growth Rate(CAGR) were selected to measure productivity. Second, Times Cited(TC), Citations per Paper(CPP),

¹ This work was supported by Korea Institute of Science and Technology Information (S.A) and the National Research Foundation of Korea Grant funded by the Korean Government through Grant No. NRF-2017R1E1A1A03070975 (S.A.).

†Corresponding Author : sjahn@kisti.re.kr

Attractivity Index(AAI), Mean Normalized Citation Score(MNCS), and Excellent Journal Rate(EJR) were chosen to measure influence and excellence. Third, Paper Collaboration Size(PCS) was selected to present collaboration. Lastly, Diffusion Rate to Others(DRO), and Absorption Rate from Others(ARO) were picked to show technological progress and diffusion.

Results & Discussion

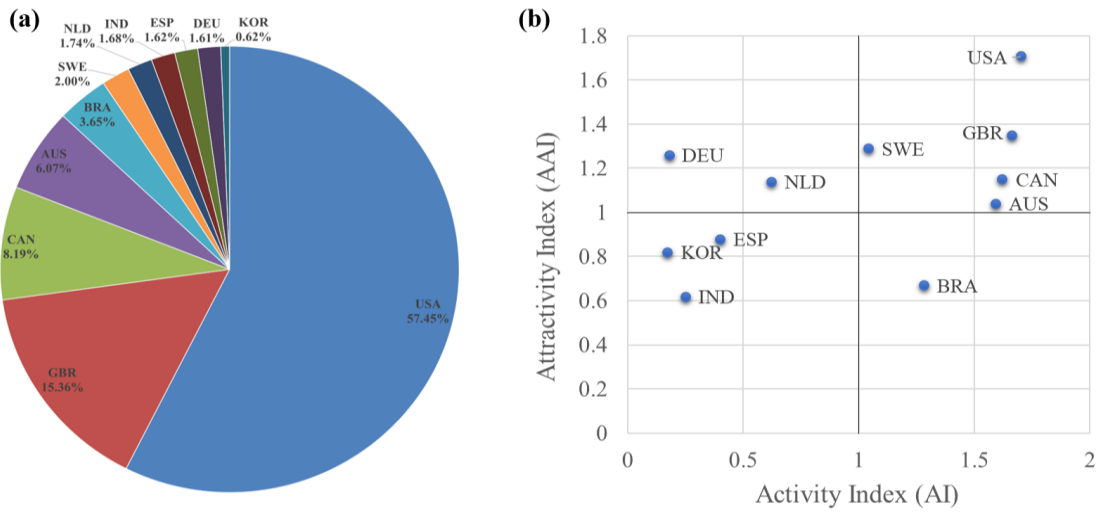
Table 1 shows the scientometric indicators of gender studies for 11 countries. All figures for each indicator excluding NP and TC are averaged for the yearly calculated values. The United states has the highest NP and AI, and European countries have relatively high values in many indicators. Meanwhile, Asian countries such as India and South Korea presented relatively low values in productivity and influence & excellence categories, but showed similar values to other countries in the other two categories.

Table 1. Scientometric indicators for ‘Gender Studies’ of 11 countries (From 1999 to 2016).

Country	Trend	Productivity			Influence & Excellence					Collaboration	Progress & Diffusion	
		NP	AI	CAGR	TC	CPP	AAI	MNCS	EJR	PCS	DRO	ARO
USA		16,785	1.70	0.07	2,961	0.18	1.71	0.88	0.21	1.13	0.60	0.11
GBR		4,488	1.66	0.07	861	0.19	1.35	1.12	0.24	1.22	0.62	0.09
CAN		2,394	1.62	0.10	447	0.19	1.15	0.99	0.24	1.26	0.62	0.10
AUS		1,775	1.59	0.08	303	0.17	1.04	0.96	0.23	1.21	0.60	0.10
BRA		1,066	1.28	0.29	21	0.02	0.67	0.13	0.02	1.10	0.59	0.04
SWE		585	1.04	0.21	114	0.19	1.29	1.16	0.30	1.37	0.64	0.12
NLD		509	0.62	0.09	136	0.27	1.14	1.32	0.28	1.44	0.62	0.13
IND		492	0.25	0.11	30	0.06	0.62	0.34	0.05	1.21	0.68	0.05
ESP		474	0.40	0.28	74	0.16	0.88	0.77	0.18	1.36	0.61	0.12
DEU		470	0.18	0.15	97	0.21	1.26	1.05	0.20	1.53	0.61	0.12
KOR		181	0.17	0.08	7	0.04	0.82	0.22	0.14	1.30	0.67	0.10

Figure 1 shows research activities in 11 countries for gender studies by the number of publications, and comparison of AI and AAI indicators. The number of publications is the most straight-forward quantitative indicator for evaluating research productivity in a specific research unit. As shown in Figure 1(a), the United States published the most journal papers with share of 57.45%, it could be considered that the most leading country in the field of gender studies. The research activity and the research influence are able to compare using combination analysis with AI and AAI. Both AI and AAI have a global average of 1, it means that for countries with 1 or higher figures on AI or AAI, their research activity or influence is above the global average. As we can see from Figure 1(b), the United States had the highest value for both indicators, and the United Kingdom, Sweden, Canada, and Australia showed higher AI and AAI than the global average in the case of gender studies. The largest difference between two indicators was in Germany, where AI was very low, while AAI was above the average. This implies that the research activities in gender studies of Germany are relatively low in a view of productivity for comparing to the world average, while the research influence shows higher level.

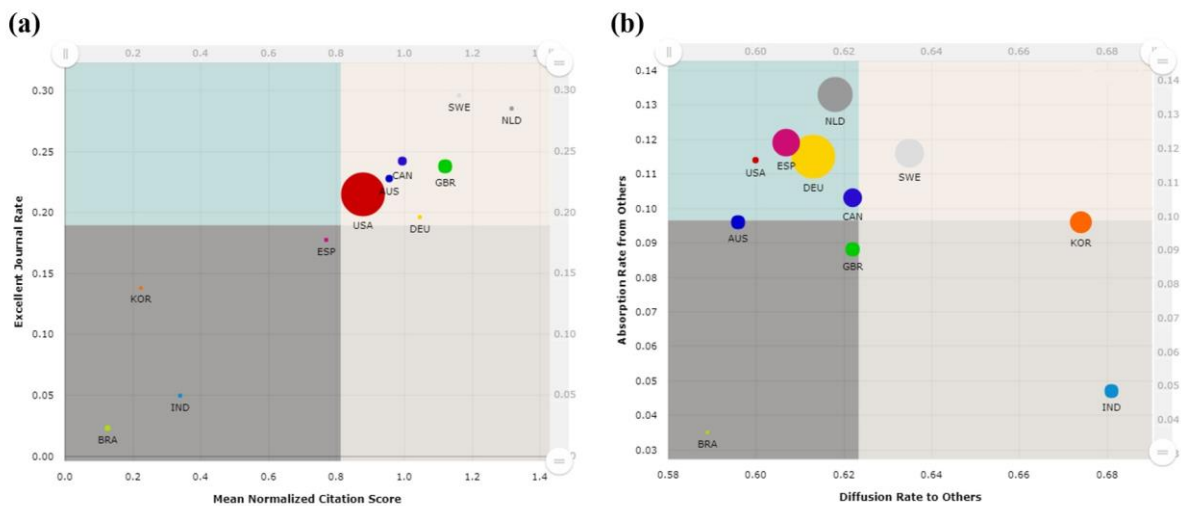
Figure 1. Research activities of 11 countries in the field of gender studies through (a) the distribution of the number of publications by country, (b) AI and AAI indicators by country.



We carried out the indicator combination analysis for more specific comparative analysis. Figure 2(a) presents the combination of MNCS, EJR, and NP which is represented by node size. The upper-right side is the area where having higher MNCS and EJR than the world average. The countries such as Sweden, the Netherlands, the United Kingdom, Canada, Australia, the United States, and Germany are located on the area. In contrast, the bottom-left side area including South Korea, India, and Brazil is an area having low MNCS and EJR, and the countries in this area had the less number of publications also.

Figure 2(b) show the level of technological absorption and diffusion between gender studies and other research fields and international collaboration size of each countries. The result shows that gender studies of many countries has interdisciplinary characteristics strongly in term of citing references from other fields rather than being cited by other fields. Many countries such as the Netherlands, Spain, Germany, Sweden, the United States, and Canada are located on the upper side of quadrant where having high ARO value. However, since Brazil shows the lowest ARO, DRO and PCS among 11 countries, there was little cooperation with other fields and countries. Generally, gender studies is referred as interdisciplinary field (Tsay & Li, 2017). The results partially support this opinion for gender studies.

Figure 2. Indicator combination analysis for (a) MNCS-EJR-NP, and (b) DRO-ARO-PCS.



Conclusion

In this study, we investigate the research trend and characteristics of gender studies by country using scientometric indicators. As a result of analysis, research achievements of the United States and some European countries were noticeable in the field of global women's studies. The United States has played a leading role in terms of productivity, and the achievements of Sweden and the Netherlands, and Germany are remarkable when it comes to collaboration among countries and other disciplines. In particular, the influence and excellence of research publications in Sweden and the Netherlands were also identified by indicators such as EJR and MNCS.

References

- Chen, C., & Song, M. (2017). Measuring Scholarly Impact. In *Representing Scientific Knowledge: The Role of Uncertainty* (pp.139-204). Springer.
- Durieux, V., & Gevenois P.A. (2010). Bibliometric indicators: quality measurements of scientific publication. *Radiology*, 255(2), 342-351.
- Leydesdorff, L., & Milojevič, S. (2015). Science and Technology Studies. In Michael Lynch (Ed.), *International Encyclopedia of Social and Behavioral Sciences* (2nd ed., pp.322-327). Oxford: Elsevier.
- Tsay, M. Y., & Li, C. N. (2017). Bibliometric analysis of the journal literature on women's studies. *Scientometrics*, 113(2), 705-734.