출현회수에 따른 키워드 가시화 연구

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Keyword Visualization based on the number of occurrences

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ABSTRACT

Recently, interest in data analysis has increased as the importance of big data becomes more important. Particularly, as social media data and academic research communities become more active and important, analysis becomes more important. In this study, co-word analysis was conducted through altmetrics articles collected from 2012 to 2017. In this way, the co-occurrence network map is derived from the keyword and the emphasized keyword is extracted.

Keywords

altmetrics, co-word analysis, co-occurrence matrix

Ⅰ. Introduction

Researchers begin to conduct their work flow on social media tools. "Altmetrics" are based on these activities and interactions on social media relating to research output. In 2010, Priem first proposed "altmetrics" in "Altmetrics: A Manifesto" as a new source of metrics for measuring scholarly impact. Impact metrics among traditional bibliometrics generally calculate a certain number of publications, citations and peer reviews to assess researchers, journals or institutions. In particular, in recent years, research findings have appeared in various forms, including not just books, papers and reports, but also blogs, videos, datasets and software codes, etc.

This study examined altmetrics related research areas and trends through co-word analysis. Also, the intellectual structure of the altmetrics was examined as forming a cluster through clustering techniques and multidimensional scaling and schematizing correlations. It is anticipated that this work will be helpful in setting the research direction and subjects by researchers in this field as well as developing various supporting policies for vitalization of the institutional repository in the future.

Ⅱ. Research method

Co-word analysis is generally a method of extracting words from the articles of corresponding subject fields, calculating the co-occurrence frequency of each word pair and obtaining correlations between words, for example, using various indexes and mapping subdomains. That is, if two keywords simultaneously appear in the same paper, the two subjects mentioned in the paper are correlated with each other. When measuring the intensity of correlation between the words, the research patterns and trends of corresponding fields can be examined. Thus, if using this analysis method, the strucure of the particular subject field can be analysed without a data classification system.

Ⅲ. Analysis result

In this paper, we retrieved the keywords "altmetrics+altmetric" in the WebofScience database, limiting the year from 2012 to 2017. The 192 references was download. The result of the co-occurrence matrix calculated through SATI3.2 and Pearson's correlation analysis was performed for measuring similarity as table 1 shown.

Table.1 Part of the similarity matrix using correlation coefficients

	altmetrics	social media	Bibliometrics	Twitter	impact factor	Scientometrics
altmetrics	1	0.1446	0.1204	0.1465	0.0703	0.0606
social media	0.1446	1	0.0554	0.1538	0.0513	0.014
Bibliometrics	0.1204	0.0554	1	0.01	0.0033	0.0582
Twitter	0.1465	0.1538	0.01	1	0.0052	0
impact factor	0.0703	0.0513	0.0033	0.0052	1	0
Scientometrics	0.0606	0.014	0.0582	0	0	1

Reference

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