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A Bibliometric Analysis of 21st Century Research Trends in Extracurricular Activities

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Abstract

By discovering and assessing articles in social sciences, this research explores the various aspects of current extracurricular activities research to further understand the knowledge base of this topic. The primary purpose of this study is to analyse the last 20 years of extracurricular activities research published in the Scopus database. VOSviewer software was used to perform bibliometric analysis such as co-occurrence, bibliographic coupling and co-authorship. Microsoft Excel was utilised to generate the tables and graphs in this paper. The analysis resulted in some interesting information which includes the steady growth of publications in extracurricular activities research that strongly indicates that it is still a trending topic and worth to be explored further. The Journal of Youth and Adolescence and the United States of America are the top journal and country that have contributed to this field of research, respectively. The analysis shows that the author key concepts are changing proportionally and apart from academic accomplishment and social capital that remain as the foci of interest, the adolescence developments is increasingly significant for future extracurricular activities research as well. This study also highlights the collaborative research networks of extracurricular activities among the authors across the globe. Consequently, it provides the opportunity to build networks among multiple countries that have significantly contributed to this area of research globally. As this is one of the initial Scopus databased bibliometric literature review on extracurricular activities, its contributions are not only on addressing the conceptual or contextual gaps for researchers that are interested in this discipline, but hopefully it will also be able to highlight some prospective areas that could be further explored in the near future.

Keywords: bibliometric analysis, extracurricular, VOSviewer, research trends

Introduction

There is a diverse definition of extracurricular activities among the scholars in Social Science (Thompson et al., 2013) and therefore it leads to numerous variations of interchangeable definition among the researchers around the globe. Solfema et al. (2019) defined that extracurricular activities are educational activities beyond the standardized scheduled time provided for students to develop their potential, abilities and interests through activities that are organised particularly by students and/or educational professionals who are qualified and authorised by the institution. Bartkus et al. (2012) and Ringley (2017) describe extracurricular activities as either academic or non-academic activities that are conducted as non-standard, non-graded and most importantly, voluntarily. Thus, extracurricular

activities can be concluded as a mechanism to develop self-potential and hidden talents, increase self-confidence, enhance social experience, and overcome stress.

Literature Review

Most of the research on extracurricular activities evolve around its relationship with academic performance (Ashorn, 2009; Bakoban & Jarallah, 2015; Balyer & Gunduz, 2012; Mandrell, 2018 & Rafiullah, 2017) and employability (Elkislly, 2017; Keenan, 2009; Rubin et al., 2002, & Thompson et al., 2013). However, extracurricular activities have shown fascinating empirical evidence in lowering the level of stress while increasing resilience and Emotional Intelligence (Oberle et al., 2019; Omar Dev & Abdul Rahman, 2016; Ruvalcaba et al., 2017). Therefore, to address the lack of review paper on this knowledge base, a thorough and comprehensive research is necessary in exploring this field. Hence, a bibliometric analysis was carried out to cover the conceptual or contextual gap in the literature and the following research issues were explored in this analysis:

- i. What is the evolution of extracurricular activities research in the 21st century (2001-2020)?
- ii. What are the main influential countries that have contributed to the research on extracurricular activities?
- iii. What are the main influential journals that have contributed to the research on extracurricular activities?
- iv. Is there any collaborative extracurricular research network exist between the authors worldwide?
- v. What are the author key concepts involved in extracurricular activities research?

Methodology

To address the research questions, this research utilizes a bibliometric methodology to conduct a comprehensive evaluation of existing literature on extracurricular activities. The purpose is to give a systematic, quantitative, and objective overview of the existing research on extracurricular activities. As a result, we will be able to highlight some prospective areas and research gaps that future researchers could explore. Bibliometric is the analysis of books, articles, and other publications through statistical methods. Although it was initially and extensively utilized in the field of library and information science, it has captured the attention of other disciplines including education (Hallinger, 2019).

Database

By obtaining and evaluating all publications on extracurricular activities in multiple areas published by journals indexed in the Scopus database, this paper contributes significantly to extracurricular activities research

On May 22, 2021, an initial search was conducted to determine the complete spectrum of articles in the Scopus database. The search word “extracurricular AND activit*” were used to retrieve related articles in the initial search stage. This initial search was limited to the title, abstract, and key words of the paper. Aside from this restriction, the following inclusion factors were used to narrow down the results.

- Date: 2001 to 2020
- Document Type: articles; Social Science
- Language: English

Therefore, the following string was used in the final search: TITLE-ABS-KEY (extracurricular AND activit*) AND PUBYEAR > 2000 AND PUBYEAR > 2021 AND (LIMIT – TO (DOCTYPE, “ar”)) AND (LIMIT – TO (DOCTYPE, “SOCI)) AND (LIMIT – TO (LANGUAGE, “English”))

Subsequently, the search yielded a total of 979 publications in English language on extracurricular activities articles research documents.

Search Strategy

The bibliometric analytical method was used to assess the features of all article publications in the field of extracurricular activities research to present the findings in a systematic way. This review did not include books, book chapters, or conference articles. The justification was that their review methods are seldom equivalent to the article journals' double-blind peer review (Hallinger, 2019).

The analysis only goes way back to the early part of the 21st century. The time frame was selected to determine a comprehensive coverage of all papers published during the era. As a result, our evaluation was able to focus on emerging-regions trends during the present generation of extracurricular activities' research.

Data Extraction

A comma-separated values (.csv) file containing bibliographic data for 979 journal articles was downloaded. Author name, affiliation, publication title, keywords, abstracts, and citation data were among the information stored. to avoid double or incorrect counting of documents, we omitted erratum and retracted document categories.

Microsoft Excel 2016 was used to assess the frequencies of the published documents from the Scopus database to generate the graphs, charts, and tables. For the visualization of the bibliometric network, we used VOSviewer (version 1.6.13). VOSviewer is a program that allows you to create and visualize bibliometric networks (Van Eck & Waltman, 2017). These networks can be built via citation, bibliographic coupling, co-citation, or co-authorship relationships, and which include journals, researchers, or individual articles. Text mining capabilities is also available in VOSviewer, which may be used to create and display co-occurrence networks (Hallinger, 2019).

Result

Evolution of Extracurricular Activities Research

The first research question attempts to explore the evolution of extracurricular activities research in the 21st century which is the publication trends from the year 2001 to 2020. The details are as in Figure 1.

Figure 1: Trend of Publications from 2001 to 2020

Referring to Figure 1, a steady growth of publications can be seen with the dawn of the new millennium as the number of publications started off with only 13. Although there were some fluctuations within the years, but the trend is ascending, and it has reached the highest point in 2020 with 142 publications (14.8%) worldwide. Therefore, it strongly indicates that extracurricular activities is still a trending topic among the academicians in research and publications.

Influential Countries

To identify the research dynamics of extracurricular activities, we applied a bibliometric coupling algorithm to classify the most influential countries and journals in the extracurricular activities research area. The number of publications per nation cut off value was set at 15. The benchmarks were fulfilled by 12 out of the 101 nations. The overall strength of bibliographic coupling ties with other nations was computed using these 12 nations as a starting point (see Table 1 & Figure 2).

Table 1: Influential Countries

Country	Documents	Citations	Total Link Strength
Australia	33	854	6003
Brazil	17	106	117
Canada	49	540	7634
China	29	142	3049
Germany	20	167	1740
Hong Kong	17	136	2494
Kazakhstan	15	6	40
Russian Federation	53	165	587
Spain	37	263	2389
Turkey	22	234	768
United Kingdom	55	1096	2449
United States	481	14811	19366

The United States (of America) was reported to be the most influential nation, with 481 publications, 14811 citations, and 19366 overall link strength. Table 1 displays the number of publications, the number of citations and the overall link strength from the 12 nations that were shortlisted. Figure 2 highlights the 12 most influential nations accordingly. The top three contributors are United States, United Kingdom and Russian Federation that can be seen according to the size and the brightness of the illuminated circles.

Figure 2: Density Visualization: Influential Countries

The overlay visualisation in Figure 3 demonstrates that most of the initial significant work was done in the United States (US) with 10 links and 19366 total link strength. Besides the U.S., United Kingdom (UK) portrays an equivalent significant contribution with 11 links but with a less total link strength (2449). Nonetheless, recent work on extracurricular activities can be located in Russian Federation, Spain, and Germany in the last three years. This clarifies that the trend of extracurricular activities studies has expanded beyond the founding regions of the US and the UK.

Figure 3: Overlay Visualization: Influential Countries

Influential Journals

The Bibliographic coupling analysis is done to determine the most influential journal in the field. Therefore, the unit analysis chosen is journal with 5 publications per journal was set as default minimum threshold value. Out of the 511 total sources, 30 sources met this threshold level. Nevertheless, we chose to analyse only the top 10 journals. The result was ranked relatively from high to low, based on total number of documents (publications), citations and citation per document (CPD) of each of the 10 journals.

Table 2 illustrates the top 10 most influential journals. Journal of Research and Adolescence marked the highest ranking as the most influential journal in extracurricular activities research with 37 publications. The other nine influential journals reported to have published from 8 to 16 publications respectively. Nevertheless, Sustainability (Switzerland) had to be removed from the list although it produced 12 publications due to its low citations (50) and citations per document (4).

Table 2: Influential Journals: No. of Documents, No. of Citations and No. of Citations per Document (CPD)

Rank	Journal	Documents	Citations	CPD
1	Journal of Youth and Adolescence	37	1689	46
2	Children and Youth Services Review	16	162	10
3	Developmental Psychology	13	1272	98
4	BMC Medical Education	13	106	8
5	Applied Developmental Science	11	337	31
6	Youth and Society	11	186	17
7	Social Science Research	10	218	22
8	Journal of Research on Adolescence	9	207	23

9	Journal of School Health	9	705	78
10	Sociology of Education	8	824	103

Journal of Youth and Adolescence also hit the highest key on the number of citations (1689). Although Sociology of Education has only 824 citations, it surpasses the Journal of Youth and Adolescence in the number of citations per document (CPD) which is 103 compared to 46 for the latter.

Author Collaborative Network across the Globe

To address the fourth research question, to investigate the collaboration of authors globally in this research area, we have conducted the co-authorship analysis by selecting countries as the unit of analysis. Out of the total 101 countries, 12 countries were shortlisted based on the threshold criteria of 15 publications per countries.

Figure 4 illustrates clusters that explains the co-authorship around the world. Based on overall connection strength, three clusters appeared from the analysis. United States (US) is seen to monopolize the collaboration from the very beginning of the analysis. The first cluster symbolizes the partnership of US, UK, and Canada co-authorship in the earlier era (2014). The second cluster displays the addition of China, Hong Kong, and Australia researchers into the first cluster's collaboration. Whereas towards the final era (2017), the cluster has expanded further with the emergence of European countries such as Turkey, the Russian Federation and Germany that tied the knot with the US. While Spain is reported to have a co-authorship link with the UK (37 documents), on the other side of the globe, Brazil, is shown to have a collaboration with its northern counterpart, Canada (17 documents) towards 2017. These are significant evidence on the evolution on co-authorship around the world and it shows that there is a huge opportunity for the researchers in Southeast Asia's countries to build network among ASEAN countries or even worldwide.

Figure 4: Overlay Visualization of Co-authorship Analysis

Key Concepts in Extracurricular Activities Research

In addressing the fifth research question, we conducted a co-occurrence analysis to explore the key research streams in extracurricular activities research. We concluded that the key terms or keywords with a threshold of at least three (3) cases were included in the analysis to maintain the relevant important themes. Themes were then identified directly from the words in the manuscripts using this analysis (Hallinger, 2019).

As a result, there were 2445 keywords in total, out of which 76 meets the criteria of minimum 5 keywords. Figure 5 yielded a co-word map set for the 76 most frequently colour-coded co-occurrence of

author keywords density visualization. These keywords indicate the relative popularity of topics according to the timeline in the recent years. To eliminate the unwanted redundancy between duplicative keywords such as “extracurricular activities” and “extracurricular activity”. A thesaurus file was created and applied accordingly. This analysis has altered the result from 2445 key concepts with 76 thresholds met the criteria to 2383 key concepts with 121 key concepts that matched the threshold.

The quantity of key concepts will always progress and do not remain the same in any given time. These key concepts are used to represent the content of extracurricular activities research. The co-occurrences of keywords determine their connection between the bubbles. The size of a bubble represents the number of publications in which it was discovered, and the distance between two nodes indicates how closely the words are connected (Van Eck & Waltman, 2017). With the emergence of new themes in this domain, the key concepts would have an evolution accordingly. Some may remain while the others may disappear and will be addressed in a later period (Akbari et al., 2020).

Figure 5 indicates that mainstream research on extracurricular activities focuses mainly on adolescence development, academic achievement, and social capital. Adolescence development showed the strongest total link (638) with other key concepts and was associated with 21 clusters compared to the other two key concepts.

Figure 5: Overlay Visualization of Author Keywords

Academic achievement has been linked with extracurricular activities in much earlier phase (2013) and has no longer created a big impact on this field. Social capital marked the second phase of the association with extracurricular activities around 2014 and onwards. It revolved around the theme of civic engagement and well-being to arts education. The focus has differed from academic achievement into a more holistic achievement’s perspective. More interestingly, the key concepts in adolescence development’s cluster has an evolution of many key concepts, from risk behaviour in the beginning of the earlier era to stress, well-being, diversity, self-esteem, and employability. However, the software also indicated that trend has move towards the research on Science, Technology, Engineering and Mathematics (STEM) education which coincide with the awareness in the era of the Fourth Industrial Revolution (IR 4.0) towards the year 2018. The colour coding signify clusters of phrases that are closely related (Van Eck & Waltman, 2017).

Discussion

Our analysis proves that although there have been some occasional changes throughout the years, the trend is increasing and has reached its peak in 2020 with 142 articles (14.8 %) globally. As a result, it strongly suggests that extracurricular activities are still a prominent study and publication issue among researchers.

Due to the evolution of new subjects in this area of research, the key concepts are changing proportionally and may vanish and return soon (Akbari et al., 2020). However, apart from academic accomplishment, social capital that remains as the foci of interest, the adolescence development's is increasingly significant for future extracurricular activities research.

The top three countries that contributed to extracurricular activities research are United States, United Kingdom and Russian Federation. This clarifies that the trend of extracurricular activities studies has expanded beyond the founding regions of the US and the UK. Although there are a few Asian countries who published manuscripts in this discipline, there is still a huge contextual gap in the African, Middle Eastern and Southeast Asian context. The Bibliographic coupling analysis also shows that Journal of Youth and Adolescence is the most influential journal not only due to its highest number of publications, but also it resulted the most citations whereas Sociology of Education's journal on the other hand, has accomplished the highest citation per documents (CPD).

Conclusion

The purpose of this study was to analyse the last 20 years of extracurricular activities research from the year 2001 until the end of the year 2020. The current study gathered and evaluated English language's Social Science research papers on extracurricular activities. Scopus Indexed database was used for this investigation. Microsoft Excel 2016 and VOSviewer software were used to conduct the bibliometric analysis, which included analysing and visualising several characteristics of publications such as trend of publications, co-occurrence of author key concepts, bibliographic coupling by countries and journals. Last but certainly not least, the collaborative research among authors around the globe that is termed as co-authorship analysis by countries.

Although the Scopus database is very comprehensive, future research can utilize other databases such as Web of Science (WOS) or even Google Scholar to gain a better understanding of global trends in the research area of extracurricular activities or other research subject areas. Instead of the analysis that have been conducted, future research can also investigate on prolific authors, authorship pattern and influential institutions to build networking on the preferred research subject with VOSviewer via bibliometric analysis.

References

- Akbari, M., Khodayari, M., Danesh, M., Davari, A., & Padash, H. (2020). A bibliometric study of sustainable technology research. *Cogent Business & Management*, 7(1), 1751906. <https://doi.org/10.1080/23311975.2020.1751906>
- Ashorn, L. J. (2009). *The impact of extracurricular participation on the first-year college experience of freshmen in a college of agriculture* [Doctoral dissertation, Texas Tech University].
- Bakoban, R. A., & Aljarallah, S. A. (2015). Extracurricular activities and their effect on the student's grade point average: Statistical study. *Educational Research and Reviews*, 10(20), 2737-2744. <https://doi.org/10.5897/err2015.2436>
- Balyer, A., & Gunduz, Y. (2012). Effects of structured extracurricular facilities on students' academic and social development. *Procedia-Social and Behavioral Sciences*, 46, 4803-4807 <https://doi.org/10.1016/j.sbspro.2012.06.338>

- Bartkus, K. R., Nemelka, B., Nemelka, M., & Gardner, P. (2012). Clarifying the meaning of extracurricular activity: A literature review of definitions. *American Journal of Business Education*, 5(6), 693. <https://doi.org/10.19030/ajbe.v5i6.7391>
- Elklisy, N. T. (2017). The impact of extracurricular activities in Egyptian colleges on the job market. *The Undergraduate Research Journal*, 5(1), 25- 54.
- Hallinger, P. (2020). Science mapping the knowledge base on educational leadership and management from the emerging regions of Asia, Africa, and Latin America, 1965 – 2018. *Educational Management Administration and Leadership*. SAGE Publications Ltd. <https://doi.org/10.1177/1741143218822772>
- Keenan, L. (2010). The effect of extracurricular activities on career outcomes: A literature review. *Student Psychology Journal*, 1, 149-162.
- Mandrell, K. (2018). *An exploration of the relationship of cocurricular/extracurricular participation and achievement in rural high school* [Doctoral dissertation, Aurora University].
- Oberle, E., Ji, X. R., Guhn, M., Schonert-Reichl, K. A., & Gadermann, A. M. (2019). Benefits of extracurricular participation in early adolescence: associations with peer belonging and mental health. *Journal of Youth and Adolescence*, 48(11), 2255–2270. <https://doi: 10.1007/s10964-019-01110-2>
- Omar Dev, R. D., & Abdul Rahman, A. R. (2016). Influence of emotional intelligence as the mediator between physical activity and mental health (distress) among Malaysian university students. *International E-Journal of Advances in Social Sciences*, 2(5), 492-500. <https://doi: 10.18769/ijasos.95534>
- Rafiullah, Zaman, F., & Khan, J. Zaib. (2017). Positive impact of extracurricular activities on university students in Lahore, Pakistan. *International Journal of Social Sciences and Management*, 4(1), 22–31. <https://doi.org/10.3126/ijssm.v4i1.16339>
- Ringley, A. C. (2017). *Middle school engagement benefits of offering extracurricular activities during the school day* [Doctoral dissertation, University of New England]. <https://dune.une.edu/cgi/viewcontent.cgi?article=1130&context=theses>
- Rubin, R. S., Bommer, W. H., & Baldwin, T. T. (2002). Using extracurricular activity as an indicator of interpersonal skill: Prudent evaluation or recruiting malpractice? *Human Resource Management: Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management*, 41(4), 441-454.
- Ruvalcaba, N. A., Gallegos, J., Borges, A., & Gonzalez, N. (2017). Extracurricular activities and group belonging as a protective factor in adolescence. *Psicologia Educativa*, 23(1), 45–51. <https://doi: 10.1016/j.pse.2016.09.001>
- Solfema, Wahid, S., & Pamungkas, A. H. (2019). The development of character through extra-curricular programs. In *1st International Conference on Education Social Sciences and Humanities*, 335, 918–926. <https://doi: 10.2991/icesshum-19.2019.143>
- Thompson, L. J., Clark, G., Walker, M., & Whyatt, J. D. (2013). ‘It’s just like an extra string to your bow’: Exploring higher education students’ perceptions and experiences of extracurricular activity and employability. *Active Learning in Higher Education*, 14(2), 135–147. <https://doi: 10.1177/1469787413481129>
- Van Eck, N. J., & Waltman, L. (2017). Citation-based clustering of publications using CitNetExplorer and VOSviewer. *Scientometrics*, 111(2), 1053–1070. <https://doi.org/10.1007/s11192-017-2300-7>