

## Two Decades of Muhammadiyah School Management Research: Bibliometric Analysis

\*Muhammad Hamdi<sup>1</sup>, Muhammad Ali Fikri<sup>2</sup>

<sup>1,2</sup>Universitas Ahmad Dahlan, Jl. Kapas No.9, Semaki, Yogyakarta, Indonesia

\*muhammad.hamdi@mgm.uad.ac.id

**ABSTRACT:** *This study offers a concise summary of the research on the management of Muhammadiyah schools over the past two decades. Specifically, this study aimed to identify necessary research and the most recent themes regarding the management of Muhammadiyah schools. This research used a bibliometric analysis of scientific articles from Scopus and Google Scholar. This study used 930 publications to analyze productivity, influence, research performance, and scientific journals managed by universities using indicators such as impact factor, h-index, and number of citations. VOSviewer was used to analyze the keyword networks, co-author analysis, and co-reference citation analysis. Several classifications were carried out, including examining the most influential journals, cited articles, and productive and influential researchers. This study provides high-level insights into the development of research on the management of Muhammadiyah Schools, although some variations were found. First, research trends related to Muhammadiyah school management in the last 20 years have increased, although the number of articles fluctuates yearly. Second, research on Muhammadiyah school management is grouped into six clusters. Third, few articles have been published in reputable international journals. This article presents an initial extensive overview of prominent trends and prominent researchers of Muhammadiyah School management, providing a general introduction to the subject.*

Kajian ini menawarkan rangkuman ringkas penelitian manajemen sekolah Muhammadiyah selama dua dekade terakhir. Secara khusus penelitian ini bertujuan untuk mengidentifikasi penelitian-penelitian yang diperlukan dan tema-tema terkini mengenai manajemen sekolah muhammadiyah. Penelitian ini menggunakan analisis bibliometrik artikel ilmiah dari Scopus dan Google Scholar. Penelitian ini menggunakan 930 publikasi untuk menganalisis produktivitas, pengaruh, kinerja penelitian, dan jurnal ilmiah yang dikelola universitas dengan menggunakan indikator seperti impact factor, h-index, dan jumlah sitasi. VOSviewer digunakan untuk menganalisis jaringan kata kunci, analisis rekan penulis, dan analisis kutipan referensi bersama. Beberapa klasifikasi dilakukan antara lain dengan meneliti jurnal paling berpengaruh, artikel yang dikutip, dan peneliti produktif dan berpengaruh. Kajian ini memberikan wawasan yang tinggi terhadap perkembangan penelitian tentang manajemen Sekolah Muhammadiyah, meskipun

<sup>1</sup>  orcid id: <http://orcid.org/0000-0001-7100-4939>

<sup>2</sup>  orcid id: <http://orcid.org/0000-0001-6793-0833>

ditemukan beberapa variasi. *Pertama*, tren penelitian terkait manajemen sekolah Muhammadiyah dalam 20 tahun terakhir mengalami peningkatan, meskipun jumlah artikelnya berfluktuasi setiap tahunnya. *Kedua*, penelitian tentang manajemen sekolah Muhammadiyah dikelompokkan menjadi enam cluster; *Ketiga*, masih sedikit artikel yang diterbitkan di jurnal internasional bereputasi. Artikel ini menyajikan tinjauan awal yang ekstensif mengenai tren-tren terkemuka dan para peneliti terkemuka dalam manajemen Sekolah Muhammadiyah, serta memberikan pengenalan umum mengenai subjek tersebut.

**Keywords:** *School Management, Muhammadiyah School, Bibliometric Analysis.*

*Received: June 7, 2023; Revised: December 28, 2023; Accepted: April 9, 2024*

## I. INTRODUCTION

The Muhammadiyah school is a Muhammadiyah business charity with the highest number of students compared to other Muhammadiyah business charities. In 2022, there were 3.334 Muhammadiyah schools, consisting of elementary schools (ES), junior high schools (JHS), senior high schools (SHS), and vocational high schools (VHS) (Majelis Dikdasmen, 2020). Muhammadiyah School is located throughout Indonesia. The data shows that Muhammadiyah schools significantly improve Indonesian citizens' quality of life (Wekke & Sahlan, 2014).

The Muhammadiyah school has a long history, starting with the establishment of the first Muhammadiyah school and has lasted until now. Starting from the first Muhammadiyah School, Madrasah Ibtidaiyah Diniyah Islamiyah (MIDI), established by K.H. Ahmad Dahlan on December 1, 1911, the age of Muhammadiyah education reached 112 years (Majelis Dikdasmen, 2020).

Although the history of Muhammadiyah schools is more than a century old, based on preliminary searches, studies on Muhammadiyah Business Charities began in 2001. However, an initial search of the databases owned by Scopus and Google Scholar revealed 980 studies on Muhammadiyah schools. This research focused on school administration, Islamic education reform, school leadership, history, and character development (Aula et al., 2020; Huda et al., 2020).

The study of Muhammadiyah School Management was the topic of this research. Investigating the Muhammadiyah school administration is crucial because school performance is a challenge in today's educational environment. Good school management will enhance academic quality, and one of them will affect the long-term viability of school life. Based on the literature, there has yet to be a systematic literature review of the concept of Muhammadiyah school management. Furthermore, bibliometric studies have yet to be found on Muhammadiyah School Management, although the number of studies on this topic is increasing.

This study used a bibliometric analysis. Bibliometric analysis has often been used in research in recent years (Donthu et al., 2020; Donthu, Kumar, Mukherjee, et al., 2021; Khan et al., 2021), which can be attributed to 1) the advancement, availability, and accessibility of bibliometric software such as Gephi, Leximancer, VOSviewer, and scientific databases such as Scopus and Web of Science and 2) cross-disciplinary

bibliometric methodology from information science to business research. Bibliometric analysis is a valuable reflection of 1) handling large amounts of scientific data and 2) generating research impacts. Bibliometric analysis can be used as a complement to studies on Muhammadiyah school management, can help researchers identify research maps that have not yet been revealed, and can reduce the emergence of problems related to the abandonment of good publication articles owing to the subjective judgments of researchers (Veloutsou & Mafe, 2020).

Indeed, bibliometric research has been applied in various fields in business research, including business strategy (Kumar, Lim, et al., 2021), electronic commerce (Kumar, Sureka, et al., 2021), finance (Durisin & Puzone, 2009; Linnenluecke et al., 2017; Xu et al., 2018), human resources (Andersen, 2021), management (Ellegaard & Wallin, 2015; Zupic & Čater, 2015), and marketing (Donthu et al., 2020; Donthu, Kumar, & Pandey, 2021; Donthu, Kumar, Pandey, et al., 2021; Donthu, Kumar, Pattnaik, et al., 2021; Hu et al., 2019), where the application of bibliometrics ranges from studying publications to exploring the intellectual structure of research fields. Bibliometric methodologies have been used to offer retrospectives of journals, such as the *Journal of Business Research*, which typically occur over critical years (Donthu et al., 2020).

This research is expected to produce a bibliometric analysis of Muhammadiyah School Management. This study aimed to examine the level of interest and research themes that exist based on the literature, focusing on the theme of Muhammadiyah school management. This study also aimed to identify bibliometric indicators in the early stages of research on Muhammadiyah school management. This indicator provides essential information to provide ideas for future research. The data used in this study was obtained from Scopus and Google Scholar. Scopus provides comprehensive and trustworthy coverage. Scopus is the largest database of abstracts and citations of peer-reviewed publications (Zanjirchi et al., 2019). According to Gaviria-Marin et al., (2019), scientists recognize Scopus as a digital bibliometric media that can offer the data needed for analysis and the range of bibliometric data that is the centre of attention in bibliometric analysis tends to be very large (for example hundreds, even thousands) and objective in nature (for example, number of citations and publications and occurrence of keywords and topics), although their interpretation often relies on objective (e.g. performance analysis) and subjective (e.g. thematic analysis) evaluations established through informed techniques and procedures (Donthu, Kumar, Mukherjee, et al., 2021).

As a result, this study provides a bibliometric analysis of Muhammadiyah School Management Research. Its goal is to examine the level of interest and research themes in the extant literature on this growing phenomenon, focusing on Muhammadiyah School management. This project also seeks to provide bibliometric indicators for early-stage Muhammadiyah school management research and valuable data for future research in this stream. The data used in this study were obtained from Scopus, a well-known scientific research database. The research questions were formulated as follows: What are the topics related to Muhammadiyah School Management Research? Who is the most productive researcher researching Muhammadiyah School Management? Which Muhammadiyah College is the most productive in researching Muhammadiyah School Management? How many studies on Muhammadiyah School Management have been published annually? Which journal has the most discussions of the Muhammadiyah School Management Research Theme? The findings of this study are summarized as follows: First, we describe the study's research context. The second section explains the research methodology and data sources. The findings of this study

are presented and discussed. Finally, key findings, limitations, and research potential for the future are discussed.

## II. METHOD

This research uses a quantitative approach, a type of bibliometric analysis referred to as bibliometric methodology (Pritchard, 1969). Bibliometric methods have been used to offer retrospectives of journals, such as the Journal of Business Research, which typically occur over critical years (Donthu et al., 2020). In particular, bibliometric-based publications have increased over time, with an average of 1021 publications over the last ten years. This is related to the expansion of scientific research. However, due to the complexity and impracticality of using traditional review procedures with large bibliographic data sets, the emergence of scientific databases such as Scopus and Web of Science has made it relatively more straightforward. To obtain large amounts of bibliometric data, bibliometric software such as Gephi, Leximancer, and VOSviewer allow for the analysis of such data very practically. This research data was obtained from the Scopus and Google Scholar databases. Scopus provides comprehensive and trustworthy coverage. Scopus is the largest database of abstracts and citations of peer-reviewed publications (Zanjirchi et al., 2019). The data used are all related articles published up to April 10, 2023, included in this study. Publications with themes that did not meet the research requirements were excluded after carefully reviewing the title and abstract (and, if necessary, the entire text). Finally, redundant information is removed. The conference paper was retained because the subject was new and in its infancy. After eliminating useless and incomplete entries, we were left with a sample of 930 records.

Data analysis with bibliometrics: according to Broadus (1987), bibliometrics is a quantitative study of physically published units, bibliographic units, or a substitute for both. The previously mentioned investigations help identify the various studies available on a subject and several study topics researched by the academic community. Bibliometric analysis considers the year of publication, author, country, type of publication, journal, number of citations, field of study, topics covered, and research methodology. Bibliometric map creation has been a focus of bibliometric research (Waltman et al., 2010). Visualize the relationship between co-cites, co-occurrence terms, and other factors. To enlighten and inspire further research, we summarize this subject's current topics and research patterns based on the content of these 930 publications and the data provided by their authors' keywords.

## III. RESULT AND DISCUSSION

### Concept of Muhammadiyah School

#### *Characteristics of Muhammadiyah School Management*

Muhammadiyah schools have characteristics that differ from those of other public and private schools. According to Susilo, (2017), the attributes of Muhammadiyah School management are that it is managed professionally, can develop curricula independently, has comprehensive learning evaluation techniques, has high discipline, a culture of progressive quality, and has strong support from stakeholders. These characteristics have enabled the Muhammadiyah School to survive, become independent, and progress. Professional school management can be observed through several consistently

conducted activities. According to Susilo, the management periodization process is taken seriously at Muhammadiyah School. Statutes and bylaws are references for the regeneration of school management. Implementing education is then conducted based on work procedures and compliance rules that bind all school members. School administrators have a collective collegial responsibility and do not rely on a particular figure. Develop a culture of communication in writing for each proposed idea.

Muhammadiyah School developed its curriculum on its own. Each school has the autonomy to design a curriculum based on the national curriculum. Muhammadiyah schools combine the national curriculum with the Islamic boarding school curriculum (Anwar, Arifin, et al., 2023; Anwar, Khozin, et al., 2023). Consequently, students acquire scientific, human, and religious knowledge. Students are formed into individuals with noble characteristics and high expertise. School learning was evaluated comprehensively. In Muhammadiyah schools, learning evaluation activities begin with the development of learning process plans, monitor learning implementation, and end with the evaluation of learning outcomes. School administrators also evaluate the school learning process to identify deficiencies and make improvements (Setyawan & Widodo, 2019).

High discipline applies to all school members, including teachers, students, and educational staff. According to Wuryandani et al., (2015), teachers at Muhammadiyah schools regularly arrived at work earlier than students. The habit of reading and memorizing short letters before learning begins and carrying out congregational prayers for all students, both sunnah and obligatory prayers, is a routine carried out every day. The school environment is also conditioned to carry out manners and courtesy towards teachers and friends, such as appreciating and respecting others, telling the truth, speaking politely, and avoiding harsh words. Support for Muhammadiyah schools comes from external sources. According to (Susilo, 2017), school committees are always involved; therefore, learning needs can be adequately discussed. In addition, Muhammadiyah School always maintains good relations with the Regency/City Education Office, so it always provides policy support, facilities, financing, and accompanying staff.

### ***Aspects of Muhammadiyah School Management***

As with organizational management in other fields, Muhammadiyah School Management includes school operations, human resource management (HRM), financial management, and marketing management. School operational management is often referred to as learning management. In Muhammadiyah schools, learning management comprises three main activities: planning, implementation, and evaluation. In the planning stage, the activities included preparing academic administration and support, reviewing the syllabus, and reviewing the lesson plan. The implementation phase included delivering the materials and assigning assignments. The activity evaluation stage assesses learning outcomes and the learning process (Setyawan & Widodo, 2019).

HR management activities are recruiting educators and education staff committed to the aim of Muhammadiyah, developing them to improve competence, and assessing performance based on an objective performance management system. According to (Susilo, 2017), Muhammadiyah School is striving to encourage the teaching staff to maintain and enhance their learning by allowing them to attend seminars and workshops so that they may grow professionally. The Muhammadiyah School's financial

management includes receiving funds, planning management, spending, bookkeeping, supervision, and accountability. The principles used in implementing financial management are fairness, efficiency, transparency, and public accountability, according to Law No. 20 of 2003 concerning the Indonesian Education System, Article 48.

Marketing management is carried out to attract prospective students to use the educational services offered by Muhammadiyah School. According to Iqbal (2019), the marketing management of the Muhammadiyah School refers to modern marketing. Segmenting the Market First. Muhammadiyah schools typically segregate students based on their demographic characteristics. When setting targets, Muhammadiyah schools chose segments based on their facilities. After setting targets, the next step is positioning, establishing a different position from other schools in the minds of prospective students or parents. However, a crucial research area in this context has been left in the dark because of the lack of a bibliometric study of all digital native research and a review study of the Muhammadiyah School in the management domain. Researchers still need sufficient evidence to support research directions in Muhammadiyah School Management Research.

### **Bibliometric Analysis of Muhammadiyah School Management**

Annual publications from 2005 to the present are listed in Table 1. The table shows the publications from 2005 to 2022. The number of publications fluctuated during the study period. The number of journals published in 2005 and 2022 in the Scopus database needs to be correctly calculated and indexed. Therefore, predicting what will occur by 2022 is difficult.

**Table 1. Annual publications from 2005 -2022**

<b>Publication Years</b>	<b>Documents</b>	<b>% of 930</b>
2005	3	0,32%
2006	7	0,75%
2007	3	0,32%
2008	2	0,22%
2009	11	1,18%
2010	10	1,08%
2011	122	13,12%
2012	94	10,11%
2013	50	5,38%
2014	25	2,69%
2015	24	2,58%
2016	36	3,87%
2017	61	6,56%
2018	64	6,88%
2019	92	9,89%
2020	111	11,94%
2021	109	11,72%
2022	106	11,40%

As shown in Figure 1, there were at most 11 articles from 2005 to 2011. In 2005 and 2007, only three articles were found (0.32%); in 2006, seven articles (0.75%); in 2008, two articles; and in 2009 and 2010, 11 (1.18%) and 10 articles (1.08%), respectively. A significant increase in the number of publications was observed in 2011 (122 articles (13,12%). Subsequently, the number of publications decreased between 2012 and 2015. In 2012, it gradually increased during 2016–2022. However, research on







Sutopo, A., with eight articles. The three authors are from the University of Muhammadiyah Surakarta, Central Java, Indonesia.

**Table 3. Top five productive authors**

Ranking	Author	Document
1	Sutama, MP	12
2	Candraningrum, D	9
3	Sutopo, A	8
4	Sardjono, Y; Haryanti, D; Hidayat N; Srijono, D; Kom, M	7
5	Elihami, E; Susilo, MJ; Sumardjoko, B; Hikmat, MH; Fauziati, E; Prasetyarini, A	6

***List of Universities that Have Contributed the Most to Research***

Table 4 lists the five universities that contributed the most to conducting research in Muhammadiyah school management. Rankings are based on the total frequency. Muhammadiyah University of Surakarta was ranked first, with a frequency of 226. The second highest ranked is the University of Muhammadiyah Malang, with a frequency of 40 articles. The third highest was Muhammadiyah University of Sidoarjo, with 16 articles. The fourth position was Ahmad Dahlan University, with ten articles. The fifth was Muhammadiyah University of Surabaya, with eight articles. All these universities are located in Indonesia.

**Table 4. Top five contributive university**

Ranking	University	Frequency
1	Muhammadiyah University of Surakarta	226
2	Muhammadiyah University of Malang	40
3	Muhammadiyah University of Sidoarjo	16
4	Ahmad Dahlan University	10
5	Muhammadiyah University of Surabaya	8

***List of Journals That Have Contributed the Most to Research***

Table 5 lists the three journals that contributed the most to conducting research in school management. The rankings were based on the total number of frequencies. The Journal of Islamic Educational Thoughts and Practices ranked first, with a frequency of 5. The second rank consists of three journals: Journal of Humanities and Social Sciences Reviews, International Journal of Educational Management and Innovation, and International Journal on Integrated Education. Each of the four published articles is related to Muhammadiyah school management. The Journal of Community Service and Empowerment ranked third with three articles published.

**Table 5. Top three research journals**

Ranking	Journal	Frequency
1	Journal of Islamic Educational Thoughts and Practices, Universitas Muhammadiyah Surakarta	5
2	Humanities & Social Sciences Reviews, Maya Global Education Society, India	4
	International Journal of Educational Management and Innovation, Universitas Ahmad Dahlan, Indonesia	4

	International Journal on Integrated Education, Research Parks Publishing, Indonesia	4
3	Journal of Community Service and Empowerment, Universitas Muhammadiyah Malang, Indonesia.	3

### *List of Most Publication Years*

Table 6 lists the highest number of articles published each year which discuss research in the field of school management. Rankings are based on the total frequency. The years 2011–2012 were ranked first, with a frequency of 216. The 2013-2014 period had the lowest number of articles because it only published 75 articles.

**Table 6. Year of most publications**

Ranking	Publication Year	Frequency
1	2011-2012	216
2	2021-2022	215
3	2019-2020	203
4	2017-2018	125
5	2013-2014	75

## IV. CONCLUSION

This study offers a general overview of the bibliometric aspects of research on the management of Muhammadiyah schools. In doing so, it seeks to identify existing levels of interest and research themes in the existing literature. While the findings of this study largely align with the academic community's perspective, a closer examination of numerical data from journals, articles, and authors involved in the analysis revealed some intriguing discrepancies. *First*, research trends related to Muhammadiyah school management in the last 20 years have increased, although the number of articles fluctuates yearly. More than 100 articles have been published annually in recent years. *Second*, research on Muhammadiyah school management was grouped into six clusters: 1) education, 2) Muhammadiyah, 3) school, 4) management, 5) implementation, and 6) Muhammadiyah High School. *Third*, only a few articles were published in reputable international journals. Based on the findings of this study, it is possible to discern some of the most productive and influential research on the management of Muhammadiyah schools in terms of journals and authors. However, it is essential to acknowledge a significant limitation: these results provide only a general orientation. Additionally, there are numerous debates surrounding the evaluation of publications, owing to the disparate values of various journals.

## V. ACKNOWLEDGEMENTS

This study was funded by Majelis Pendidikan Tinggi Penelitian dan Pengembangan Pimpinan Pusat Muhammadiyah using the Riset Muhammadiyah Batch VI research grant program for 2022/2023 [Grant Number: 1687.073/PP/I.3/D/2022] from Pimpinan Pusat Muhammadiyah, Indonesia. The authors declare that they have no conflicts of interest.

## VI. REFERENCES

- [1] Andersen, N. (2021). Mapping the expatriate literature: a bibliometric review of the field from 1998 to 2017 and identification of current research fronts. *International Journal of Human Resource Management*, 32(22). <https://doi.org/10.1080/09585192.2019.1661267>
- [2] Anwar, S., Arifin, S., Humaidi, N., & Ikhwan, A. (2023). Muhammadiyah Boarding School Curriculum in Indonesia: Insights into Building Nation Generation Building Agenda. *Firdaus Journal*, 3(1), 10–18. <https://doi.org/10.37134/firdaus.vol3.1.2.2023%20>
- [3] Anwar, S., Khozin, & Ikhwan, A. (2023). Implementation of Muhammadiyah Boarding School Curriculum in Organizational Caderization. *The Abraka Journal of Religion and Philosophy (AJRP)*, 3(1), 289–308. <http://abrakajournal.com/index.php/ajrp/article/view/36>
- [4] Aula, N., Ikhwan, A., & Nuraini, N. (2020). The Leadership Role of the Principal as Supervisor in Conflict Management at Muhammadiyah 2 Madiun High School, East Java, Indonesia. *Al-Hayat: Journal of Islamic Education*, 4(1), 90–105. <https://doi.org/10.35723/ajie.v4i1.112>
- [5] Broadus, R. N. (1987). Toward a definition of “bibliometrics.” *Scientometrics*, 12(5–6). <https://doi.org/10.1007/BF02016680>
- [6] Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- [7] Donthu, N., Kumar, S., & Pandey, N. (2021). A retrospective evaluation of Marketing Intelligence and Planning: 1983–2019. *Marketing Intelligence and Planning*, 39(1). <https://doi.org/10.1108/MIP-02-2020-0066>
- [8] Donthu, N., Kumar, S., Pandey, N., & Soni, G. (2021). A retrospective overview of Asia Pacific Journal of Marketing and Logistics using a bibliometric analysis. *Asia Pacific Journal of Marketing and Logistics*, 33(3). <https://doi.org/10.1108/APJML-04-2020-0216>
- [9] Donthu, N., Kumar, S., & Pattnaik, D. (2020). Forty-five years of Journal of Business Research: A bibliometric analysis. *Journal of Business Research*, 109. <https://doi.org/10.1016/j.jbusres.2019.10.039>
- [10] Donthu, N., Kumar, S., Pattnaik, D., & Lim, W. M. (2021). A bibliometric retrospection of marketing from the lens of psychology: Insights from Psychology & Marketing. *Psychology and Marketing*, 38(5). <https://doi.org/10.1002/mar.21472>
- [11] Durisin, B., & Puzone, F. (2009). Maturation of corporate governance research, 1993-2007: An assessment. *Corporate Governance: An International Review*, 17(3). <https://doi.org/10.1111/j.1467-8683.2009.00739.x>

- [12] Ellegaard, O., & Wallin, J. A. (2015). The bibliometric analysis of scholarly production: How great is the impact? *Scientometrics*, 105(3). <https://doi.org/10.1007/s11192-015-1645-z>
- [13] Gaviria-Marin, M., Merigó, J. M., & Baier-Fuentes, H. (2019). Knowledge management: A global examination based on bibliometric analysis. *Technological Forecasting and Social Change*, 140. <https://doi.org/10.1016/j.techfore.2018.07.006>
- [14] Hu, C., Song, M., & Guo, F. (2019). Intellectual structure of market orientation: a citation/co-citation analysis. In *Marketing Intelligence and Planning* (Vol. 37, Issue 6). <https://doi.org/10.1108/MIP-08-2018-0325>
- [15] Huda, M., Khoirurrijal, K., Dacholfany, M. I., Susminingsih, Hashim, A., Marni, N., Mohamed, A. K., Puad, M. A. A., Rozali, M. H., Maseleno, A., Muhamad, N. H. N., & Ikhwan, A. (2020). Empowering learning ethics culture in Islamic education. *Global Perspectives on Teaching and Learning Paths in Islamic Education*, 244–267. <https://doi.org/10.4018/978-1-5225-8528-2.ch013>
- [16] Khan, M. A., Pattnaik, D., Ashraf, R., Ali, I., Kumar, S., & Donthu, N. (2021). Value of special issues in the journal of business research: A bibliometric analysis. *Journal of Business Research*, 125. <https://doi.org/10.1016/j.jbusres.2020.12.015>
- [17] Kumar, S., Lim, W. M., Pandey, N., & Westland, J. C. (2021). 20 years of Electronic Commerce Research. *Electronic Commerce Research*, 21(1). <https://doi.org/10.1007/s10660-021-09464-1>
- [18] Kumar, S., Sureka, R., Lim, W. M., Mangla, S. K., & Goyal, N. (2021). What do we know about business strategy and environmental research? Insights from Business Strategy and the Environment. *Business Strategy and the Environment*, 30(8). <https://doi.org/10.1002/bse.2813>
- [19] Linnenluecke, M. K., Chen, X., Ling, X., Smith, T., & Zhu, Y. (2017). Research in finance: A review of influential publications and a research agenda. In *Pacific Basin Finance Journal* (Vol. 43). <https://doi.org/10.1016/j.pacfin.2017.04.005>
- [20] Majelis Dikdasmen. (2020). *Dapodikmu Jumlah Sekolah*. Majelis Dikdasmen PP Muhammadiyah. <https://dikdasmenppmuhammadiyah.org/dapodikmu-jumlah-sekolah/>
- [21] Pritchard, A. (1969). Statistical Bibliography or Bibliometrics? In *Journal of Documentation* (Vol. 25, Issue 4, pp. 348–349).
- [22] Setyawan, A., & Widodo, H. (2019). Evaluasi Standar Proses Pendidikan Al Islam dan Kemuhammadiyah di Sekolah Menengah Kejuruan Muhammadiyah 1 Playen. *At-Tajdid: Jurnal Ilmu Tarbiyah*, 8(2), 316–343. <https://doi.org/10.52640/tajdid.v8i2.162>
- [23] Susilo, M. J. (2017). Strategi membangun sekolah yang berkemandirian. *Seminar Nasional Pendidikan Berkemajuan Dan Menggembirakan (The Progressive & Fun Education Seminar)*, 2. <http://hdl.handle.net/11617/9571>

- [24] Veloutsou, C., & Mafe, C. R. (2020). Brands as relationship builders in the virtual world: A bibliometric analysis. *Electronic Commerce Research and Applications*, 39, 100901. <https://doi.org/10.1016/j.elerap.2019.100901>
- [25] Waltman, L., van Eck, N. J., & Noyons, E. C. M. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics*, 4(4), 629–635. <https://doi.org/10.1016/j.joi.2010.07.002>
- [26] Wekke, I. S., & Sahlan, A. (2014). Strategy in Creating School Environment: Lessons from High Schools in Indonesia. *Procedia - Social and Behavioral Sciences*, 143, 112–116. <https://doi.org/10.1016/j.sbspro.2014.07.370>
- [27] Wuryandani, W., Maftuh, B., Sapriya, S., & Budimansyah, D. (2015). Internalisasi Nilai Karakter Disiplin Melalui Penciptaan Iklim Kelas Yang Kondusif di SD Muhammadiyah Sapen Yogyakarta. *Jurnal Pendidikan Karakter*, 5(2). <https://doi.org/10.21831/jpk.v0i2.2793>
- [28] Xu, X., Chen, X., Jia, F., Brown, S., Gong, Y., & Xu, Y. (2018). Supply chain finance: A systematic literature review and bibliometric analysis. In *International Journal of Production Economics* (Vol. 204). <https://doi.org/10.1016/j.ijpe.2018.08.003>
- [29] Zanjirchi, S. M., Jalilian, N., & Shahmohamadi Mehrjardi, M. (2019). Open innovation: from technology exploitation to creation of superior performance. *Asia Pacific Journal of Innovation and Entrepreneurship*, 13(3). <https://doi.org/10.1108/apjie-02-2019-0005>
- [30] Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, 18(3). <https://doi.org/10.1177/1094428114562629>