BIBLIOMETRIC COMPUTATIONAL MAPPING ANALYSIS OF PUBLICATIONS ON MANAGEMENT INFORMATION SYSTEM IN DIGITAL OFFICE USING VOSVIEWER

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ABSTRAK
Penelitian ini mengkaji pertumbuhan sistem informasi manajemen pada perkantoran digitsl dengan pendekatan bibliometrik dan analisisnya menggunakan VOSViewer. Data dalam artikel ini diperoleh dari database Google Scholar dengan menggunakan aplikasi *publish or perish reference* dengan kata kunci "Sistem Informasi Manajemen Kantor Digital". Diperoleh sekitar 999 artikel yang relevan dengan kata kunci tersebut dalam periode 2012-2022 (11 tahun). Data menunjukkan pada tahun 2020 terdapat 127 artikel, jumlah tersebut merupakan jumlah publikasi terbanyak dalam kurun waktu 11 tahun. Penelitian tentang kantor digital mungkin akan meningkat karena situasi pandemi yang memaksa aktivitas pekerjaan dilakukan secara daring.

ABSTRACT
This research examines the growth of management information digital system office with a bibliometric approach and the analysis using VOSViewer. The data in this article get from google scholar database by using publish or perish reference manager application with keywords "System Information Management Digital Office". Around 999 articles obtained as the relevant with the keywords in the periods 2012-2022 (11years). The data showed in 2020 there are 127 articles, it is the higher publications around 11 years. Research about digital office might be increase because of the pandemic situation.

Key words: Bibliometric, Computational Mapping Analysis, Digital Office, Management Information System, VOSViewer

INTRODUCTION

The development of technology in recent years has changed the pattern of human life in all aspects [1]. Among them are changes in the financial sector, social sector, and in other fields. This change provides a variety of benefits that can be felt directly which makes it easier to carry out daily activities.

Technology is not a new thing when we talked about office. Nowadays, technology can change the conventional office system into a digital office system. It means that technology has changed the main aspects of various processes and activities in a company [2]. Changes that occur within the company must always be updated to keep up with advances in technology and information systems [3].

In the end of 2019, covid-19 occurred in all over the world. It brought a big change in the company's management system. This situation forces companies to be able to implement the latest technology that is adequate to carry out various company business activities [4]. Even without thorough preparation, company must be able to perform all the activities to achieve the purpose.

Utilizing advances in management information systems in companies requires complex relationships between technology, companies, employees, and the environment. It is no exception to have a positive or negative impact on society [5]. Research on digital office has been done by several researchers. However, there are still not many people who really discuss the management information system in the digital office.

Through this situation, bibliometric analysis is carried out to assist researchers in studying and analyzing further related to certain fields that have been published in scientific papers and journals. Therefore, bibliometric research on information systems in digital offices on articles indexed by Google Scholar uses VOSviewer.

METHOD

In this study, the data used are from articles that have been published in Google Scholar indexed journals. The database from Google Scholar was selected with the keywords "System Information Management in Digital Office" using the Publish or Pheris application for the period 2012-2022. Then the data is saved in excel with CSV format which will be filtered by year. Then using the VOSViewer application the data is saved in *ris format using networking, density, and bibliometric visualization overlays, to see and examine trend correlations [12].

RESULTS AND DISCUSSION

Publication Data Search Results

Table 1 shows the results of utilizing the publish or perish reference manager to filter data on papers that have been published over the past 11 years (from 2012 to 2022), resulting in 999 articles that meet the keyword criteria. Author's name, title, year, journal's name, publisher, number of citations, article links, and associated URLs are all included in the metadata that was obtained. Figure 1 depicts the evolution of research on the teaching of science and engineering during a ten-year period between 2012 and 2021.

Table 1. Development of System Information Management in Office Digital Research.

Year	Number of Publication
2012	103
2013	119
2014	85
2015	87
2016	98
2017	105
2018	104
2019	98
2020	127
2021	61
2022	12
Total	999

Based on Figure 1, it is known that between the years of 2012 and 2019, there were up and down publications of system information management in office digital. While the number of published articles fell dramatically between 2020 and 2022, with 127, 61, and 12 each year, respectively. Due to its effects on the fields of science, engineering, and technology, the COVID-19 pandemic was primarily to blame for the substantial drop that happened in 2020–2022.

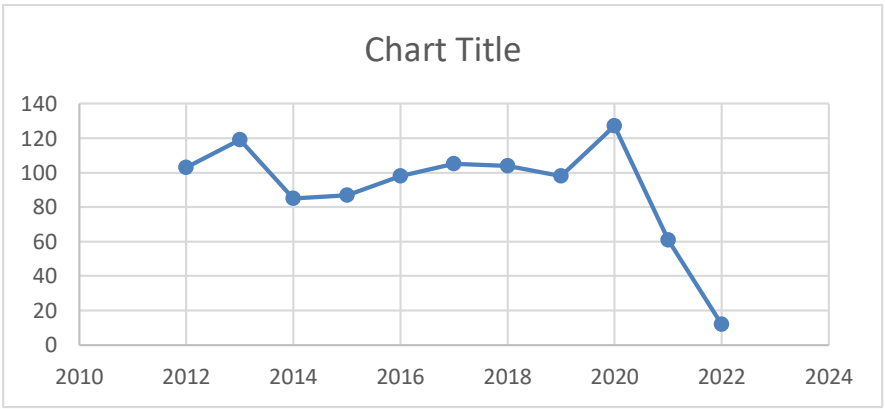

Figure 1. Development of System Information Management in Office Digital Research.

Table 2 is the grouping of linked papers with the most citations. The 11 articles with the highest number of citations were found using the article data was collected from 2012 to 2022.

Table 2. System Information Management in Office Digital Related Data

No.	Number Citation	Title	Publisher	Year	Authors	Refs.
1	619	Setting the future of digital and social media marketing research: Perspectives and research propositions	Elsevier	2021	YK Dwivedi, E Ismagilova, DL Hughes	[13]
2	673	Security and privacy in electronic health records: A systematic literature review	Elsevier	2013	JL Fernández-Alemán, IC Señor, PÁO Lozoya	[14]
3	479	Consumer power: Evolution in the digital age	Elsevier	2013	LI Labrecque, J Vor Dem Esche, C Mathwick	[15]
4	488	Electronic health records implementation: an evaluation of information system impact and contingency factors	Elsevier	2014	L Nguyen, E Bellucci, LT Nguyen	[16]
5	654	The role of dynamic capabilities in responding to digital disruption: A factor-based study of the newspaper industry	Taylor & Francis	2015	J Karimi, Z Walter	[17]
6	550	Trusting records: is Blockchain technology the answer?	emerald.com	2016	VL Lemieux	[18]
7	861	Telehealth	Mass Medical Soc	2017	RV Tuckson, M Edmunds	[19]
8	1256	A survey on Internet of Things architectures	Elsevier	2018	PP Ray	[20]
9	764	Digital economics	aeaweb.org	2019	A Goldfarb, C Tucker	[21]
10	724	Covid-19 and health care's digital revolution	Mass Medical Soc	2020	S Keesara, A Jonas, K Schulman	[22]
11	718	Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy	Elsevier	2021	YK Dwivedi, L Hughes, E Ismagilova, G Aarts	[23]

4.2 Visualization System Information Management In Office Digital Topics Using VosViewer

Based on the research issue of system information management in office digital, it depicts the network of visually represented concepts. Networks or lines connecting one term to another are used in the network visualization to illustrate relationships. Based on the examination of the 33 elements that make up the 5 main clusters formed by the mapping of terms. Various colors are used to identify each cluster.

In Cluster 1 there are 9 items that marked in red: article, communication, digital transformation, digital technology, implication, innovation, knowledge, relationship, and work.

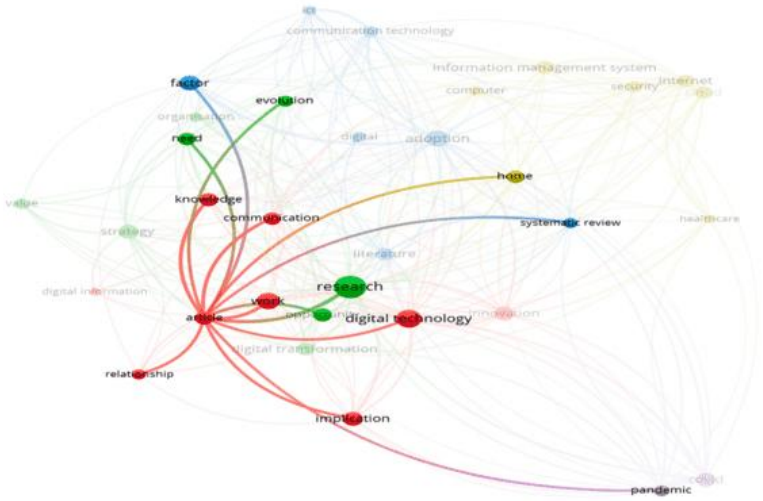

Figure 2. Network Visualization of Cluster 1

In Cluster 2 there are 8 items that marked in green: digital transformation, evolution, need, opportunity, organization, research, strategy, and value.

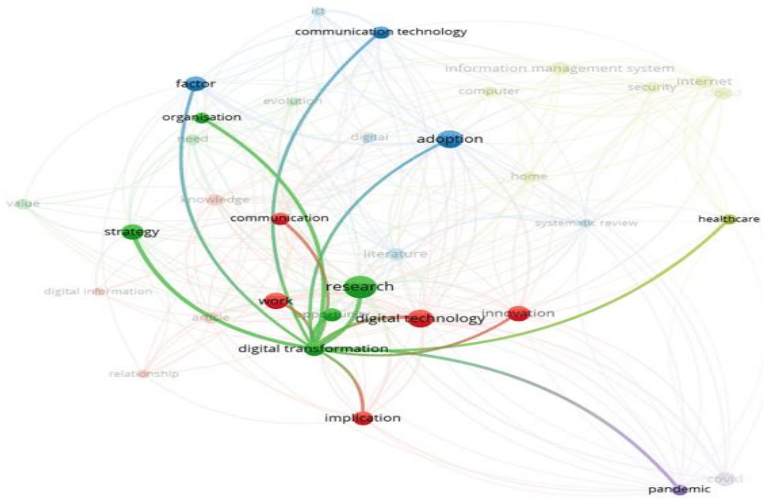

Figure 3. Network Visualization of Cluster 2

In Cluster 3 there are 7 items that marked in blue: adoption, communication technology, digital, factor, ict, literature, and systematic review.

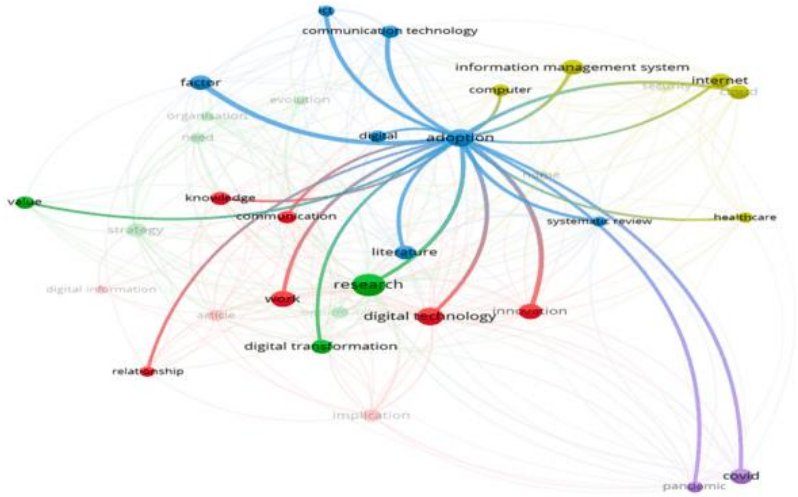

Figure 4. Network Visualization of Cluster 3

In Cluster 4 there are 7 items that marked in yellow: cloud, computer, healthcare, home, information management, internet, and security.

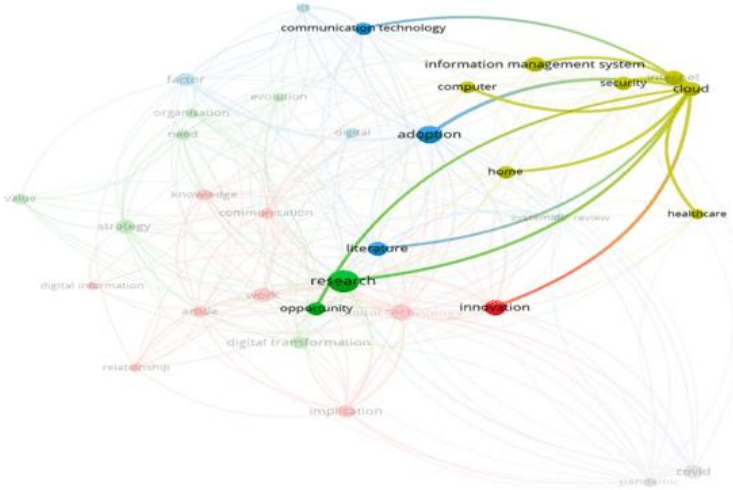

Figure 5. Network Visualization of Cluster 4

In Cluster 5 only 2 items that marked in purple: covid and pandemic.

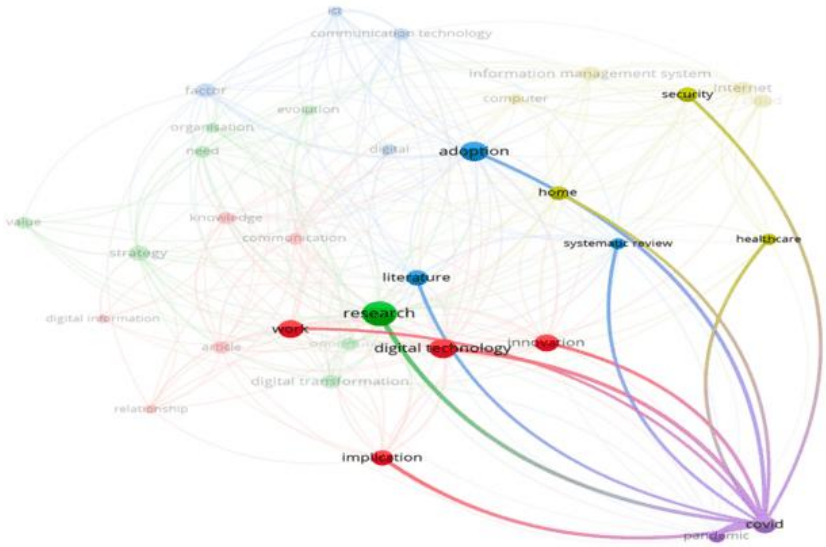

Figure 6. Network Visualization of Cluster 5

CONCLUSION

The articles used were obtained from Publish or Perish from the Google Scholar database. with connected keywords, search results totaled 999 related articles published between 2012 and 2022. These findings reveal a decline in information management systems in digital office research from 2020 to 2022, suppressing research from 2012 to 2020. At the beginning of the emergence of Covid-19 in 2020 there was a quite large increase and then in the following year there was a quite significant decrease until this research was carried out.

REFERENCES

1. Li, S. (2021). Application of computer technology in administrative management. In *Journal of Physics: Conference Series* (Vol. 1769, No. 1, p. 012074). IOP Publishing.
2. Wimelius, H., Mathiassen, L., Holmström, J., & Keil, M. (2021). A paradoxical perspective on technology renewal in digital transformation. *Information systems journal*, *31*(1), 198-225.
3. Hanseth, O., & Lyytinen, K. (2010). Design theory for dynamic complexity in information infrastructures: The case of building internet. *Journal of Information Technology*, **25**(1), 1– 19.
4. Gigauri, I. (2020). Effects of Covid-19 on Human Resource Management from the Perspective of Digitalization and Work-life-balance. *International Journal of Innovative Technologies in Economy*, (4 (31)).
5. Majchrzak, A., & Markus, M. L. (2012). Technology affordances and constraints in management information systems (MIS). *Encyclopedia of Management Theory,(Ed: E. Kessler), Sage Publications, Forthcoming*.
6. Simon, H. A. (2019). *The Sciences of the Artificial, reissue of the third edition with a new introduction by John Laird*. MIT press.
7. Argyris, C. (1977). Organizational learning and management information systems. *Accounting, Organizations and Society*, *2*(2), 113-123.
8. Rijswijk, K., Klerkx, L., Bacco, M., Bartolini, F., Bulten, E., Debruyne, L., & Brunori, G. (2021). Digital transformation of agriculture and rural areas: A socio-cyber-physical system framework to support responsibilisation. *Journal of Rural Studies*, *85*, 79-90.
9. Wang, B., Schlagwein, D., Cecez-Kecmanovic, D., & Cahalane, M. C. (2020). Beyond the factory paradigm: Digital nomadism and the digital future (s) of knowledge work post-COVID-19. *Journal of the Association for Information Systems*, *21*(6), 10.
10. Christensen, G. J. (2009). Impressions are changing: deciding on conventional, digital or digital plus in-office milling. *The Journal of the American Dental Association*, *140*(10), 1301-1304.
11. Boell, S. K., Cecez-Kecmanovic, D., & Campbell, J. (2016). Telework paradoxes and practices: the importance of the nature of work. New Technology, Work and Employment, 31, 114- 131.
12. Al Husaeni, D. F., & Nandiyanto, A. B. D. (2022). Bibliometric using Vosviewer with Publish or Perish (using google scholar data): From step-by-step processing for users to the practical examples in the analysis of digital learning articles in pre and post Covid-19 pandemic. *ASEAN Journal of Science and Engineering*, *2*(1), 19-46.

13. Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., ... & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, *59*, 102168.
14. Fernández-Alemán, J. L., Señor, I. C., Lozoya, P. Á. O., & Toval, A. (2013). Security and privacy in electronic health records: A systematic literature review. *Journal of biomedical informatics*, *46*(3), 541-562.
15. Labrecque, L. I., Vor Dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer power: Evolution in the digital age. *Journal of Interactive Marketing*, *27*(4), 257-269.
16. Nguyen, L., Bellucci, E., & Nguyen, L. T. (2014). Electronic health records implementation: an evaluation of information system impact and contingency factors. *International journal of medical informatics*, *83*(11), 779-796.
17. Karimi, J., & Walter, Z. (2015). The role of dynamic capabilities in responding to digital disruption: A factor-based study of the newspaper industry. *Journal of Management Information Systems*, *32*(1), 39-81.
18. Lemieux, V. L. (2016). Trusting records: is Blockchain technology the answer?. *Records management journal*, *26*(2), 110-139.
19. Tuckson, R. V., Edmunds, M., & Hodgkins, M. L. (2017). Telehealth. *New England Journal of Medicine*, *377*(16), 1585-1592.
20. Ray, P. P. (2018). A survey on Internet of Things architectures. *Journal of King Saud University-Computer and Information Sciences*, *30*(3), 291-319.
21. Goldfarb, A., & Tucker, C. (2019). Digital economics. *Journal of economic literature*, *57*(1), 3-43.
22. Keesara, S., Jonas, A., & Schulman, K. (2020). Covid-19 and health care's digital revolution. *New England Journal of Medicine*, *382*(23), e8
23. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... & Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, *57*, 101994.