

BIBLIOMETRIC ANALYSIS: DIGITAL-BASED EDUCATION MARKETING IN IMPROVING EDUCATIONAL INSTITUTION SERVICES

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Abstract

This study aims to determine the trend of writing digital-based education marketing articles, the trend of articles that have the highest number of citations, and mapping in searching for trends in scientific publications using the Google Scholar database. The method used is bibliometric analysis. The population of this study was 500 articles based on data search results using the Publish or Perish (PoP) application from 2017-2022, 479 articles were obtained as samples that match the keyword criteria. Data is stored in the form of Microsoft Excel as data processing material and stored in the form of RIS to be used in the VOSviewer software to obtain mapping in looking for publication trends. The results of the study show that the trend of writing articles on digital-based education marketing has increased significantly from 2019 to its peak in 2020 due to the covid 19 pandemic. Then based on Networking visualization digital-based education marketing has relevance to "marketing strategy", "social media marketing", "development", and "technology". Meanwhile, Based on Overlay Visualization and Density Visualization, there are five topics related to digital-based education marketing, namely "performance", "effect", "Case study", "brand" and "higher education" which are still rarely researched and are the latest topics in research. This topic can be an opportunity to conduct further research.

Keywords: Bibliometric analysis, Digitization, Educational institution, Educational marketing, Services.

1. Introduction

Marketing of educational services is a program carried out by various educational institutions (schools) to increase customers (students), amidst lots of competition. Marketing or promotion is an area that cannot be separated in the world of education. The ability to compete determines whether the institution can survive or not. Educational institutions that do not have competitiveness with other institutions will be abandoned by their customers. Competitiveness is determined by quality products or services. Therefore, these institutions must be introduced to the wider community [1]. Marketing is needed for educational institutions in building a positive school image. If a school has a good image in the eyes of the community, it will be easier for the school to overcome competition with other schools. Thus, marketing is a process that must be carried out by schools to provide satisfaction to customers and society. Customer satisfaction is something that is done by school principals and the school community that must be done by every institution, to be able to compete [2]. Based on the current phenomenon, schools have at least prepared an unusual marketing strategy for educational services, one of which is the digitalization strategy [3-14]. The use of digitalization in the world of marketing is currently experiencing quite rapid development. The development of information technology has made the internet the main means of exchanging data and information. At present, the use of digital-based education marketing strategies is still little used in Indonesian education. This is certainly motivated by various factors. Starting from weak human resources capabilities regarding digital technology, inadequate internet facilities, and many others. Thus, not a few educational institutions prefer conventional ways of using marketing strategies.

Several previous studies have contributed to the study of educational marketing by implementing digital technology adoption. In 2011, several impactful articles discussed the use of digital technology in the context of marketing education, including papers from Buzzard et al. in 2011 and Wymbs in 2011 [15]. Simultaneously, and subsequently, Crittenden and Crittenden in 2015 explored the nature and scope of a "digital invasion" into marketing education [16, 17]. The current special edition realizes the goal of previous special editions focused on digital technologies by extending leadership thinking to the concept of "digital disruption". Furthermore, research conducted by Crittenden and Peterson in 2019 entitled *Digital Disruption: The Transdisciplinary Future of Marketing Education* [18], and the development of digital marketing penetrated the industrial world using robots that can be used in monitoring product quality [19]. Then, Al Husaeni and Nandiyanto in 2022 conducted a bibliometric analysis of Digital Learning [20]. Based on the literature above, there is no report on the title *Bibliometric Analysis: Digital-Based Educational Marketing in Improving Educational Institution Services*.

This study aims to determine the trend of writing digital-based educational marketing articles. The method used is bibliometric analysis. The novelties of this research include (i) providing information about trends in article writing on digital-based education marketing, (ii) providing information on trends in articles that have the highest number of citations, and (iii) mapping recommendations in finding trends in scientific publications related to the topic of digital-based education marketing.

2. Method

The research method used is bibliometric analysis related to digital-based education marketing. Bibliometrics is the application of statistical and mathematical methods to books and other communication media [21]. The bibliometric analysis used is descriptive bibliometrics which describes the characteristics of a literature. Bibliometric analysis is used for various reasons, including revealing trends that appear in articles and journals [22]. Data collection was carried out using the Publish or Perish (PoP) application on 9 November 2022 using the Google Scholar database. The first step in compiling the google scholar database via PoP with the keywords "Digital marketing" and "education", the publication name is "journal", and the year of publication of the article is "2017 - 2022". Based on the results of searching data through PoP, 500 articles are the population of this study. of the 500 articles, 479 articles became the research sample because they met the research criteria, namely articles published in journal form and related to digital-based education marketing. This data is stored in the form of Microsoft Excel as data processing material and is also stored in the RIS form for use in the VOSviewer software. VOSviewer is used to map in search of trends in international scientific publications with the Google scholar database on keyword-based educational marketing.

3. Results and Discussion

The research data was conducted to see publications every year starting from 2017 to 2022, the documents searched for with the keyword: Digital Marketing Education produced 500 documents, only 479 complete documents along with the year of publication. The results of the analysis show that from 2019 to 2021 the writing of publications on the topic of digital marketing education has increased. In 2019 there were 81 articles, in 2020 there were 113 articles. This is due to the Covid 19 pandemic which has shifted the paradigm of conventional-based educational marketing into the digital era. However, in 2021 there was a decrease to 111 articles, and 77 articles in 2022. The graphic explanation explains the importance of research with the title digital marketing education. These keywords are searched for and published, and the trend of publication is increasing (Fig. 1). Then, it can also be seen from the citation data that research related to digital-based marketing has increased quite a bit that year. The data is described in Table 1.

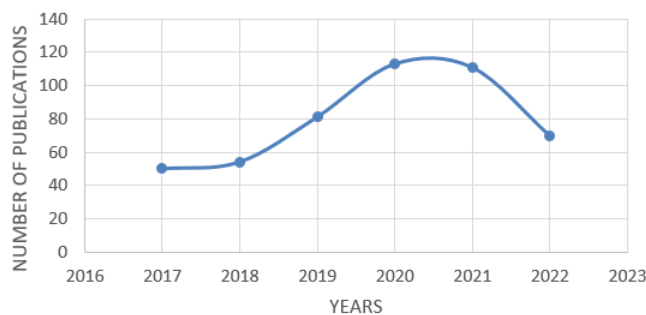


Fig. 1. Digital marketing publication trends in 2017-2022.

Table 1. Citation summary.

No.	Author	Title	Journal	Cites
1	Abin and Sujianto	Interactive Digital Marketing In Improving Customer Satisfaction In Islamic Education Institutions In MAN 1 Blitar	Journal of Business, Economics and Education	771
2	Pradiani	Pengaruh sistem pemasaran digital marketing terhadap peningkatan volume penjualan hasil industri rumahan	Jurnal Ilmiah Bisnis Dan Ekonomi Asia	444
3	Saura	Using data sciences in digital marketing: Framework, methods, and performance metrics	Journal of Innovation and Knowledge	236
4	Oktaviani and Rustandi	Implementasi digital marketing dalam membangun brand awareness	Profesi Humas	188
5	Ritz et al.	Digital marketing adoption and success for small businesses: The application of the do-it-yourself and technology acceptance models	Journal of Research in interactive Marketing	169
6	Pandey et al.	Digital marketing for B2B organizations: structured literature review and future research directions	Journal of Business and Industrial Marketing	117
7	Benavides et al.	Digital transformation in higher education institutions: A systematic literature review	Sensors	117
8	Fierro et al.	Digital marketing: a new tool for international education	Pensamiento and Gestión	90
9	Purwanti	The Influence of digital marketing and innovation on the school performance	Journal of Computer and Mathematics Education	85
10	Di Gregorio et al.	Employability skills for future marketing professionals	European management	84

Data from the PoP application is stored in the RIS form which is then used in the VOSviewer software to obtain bibliometric analysis results. After the RIS data was entered into the VOSviewer software, 2509 terms were obtained with the closest 48 terms. By selecting the minimum number of occurrences of the repeated word used is 10 terms. Then, the data were analysed using Network Visualization. The results of the VOSviewer Network Visualization software show that there are 5 clusters consisting of 34 topics related to digital-based education marketing, namely: Cluster 1 (red) consists of 8 topics, namely: Adoption, Application, Digital Marketing, Importance, Social medium, Technology, Training, Internet. Cluster 2 (green) consists of 8 topics, namely: Company, Development, effect, influence, performance, research, social media marketing, traditional marketing. Cluster 3

(blue) consists of 7 topics, namely: Case Study, Higher education, marketing strategy, pandemic, student, University, and Use. Cluster 4 (yellow) consists of 6 topics, namely: Brand, Case, Consumer, digital marketing communication, Digital marketing tool, and relationship. Cluster 5 (purple) consists of 5 topics, namely: Customer, digital technology, opportunity, product, and service (Fig. 2).

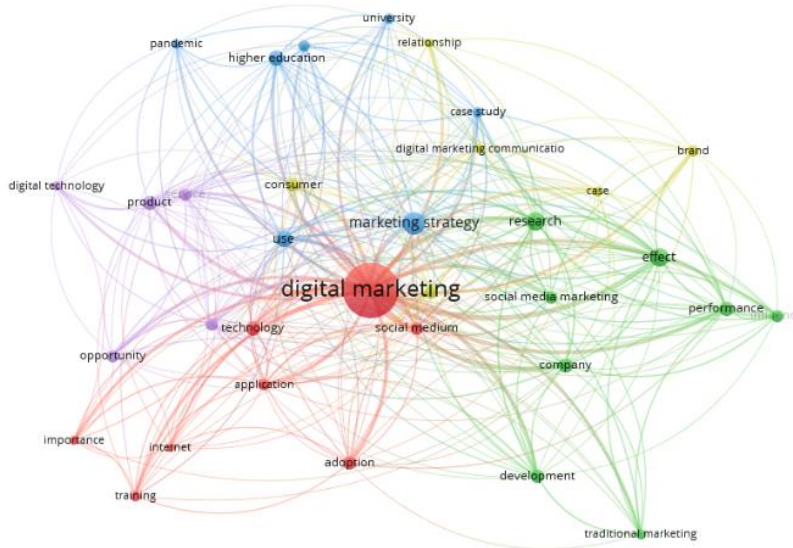


Fig. 2. Network visualization.

The results of the VOSviewer Visualization Frames Overlay visualization software (Fig. 3) shows the trend of article writing topics in Google Scholar indexed journals by year. The trend in the topic of writing articles related to digital-based education marketing from the oldest to the newest year is marked by topics of purple, blue, tosca, dark green, light green, and yellow. This means that the topics "social media marketing", "brand", "technology" in light green and "performance", "effect", "Case study", and "higher education" in yellow are the newest topics that related to digital-based education marketing. These topics can be updated references for further research.

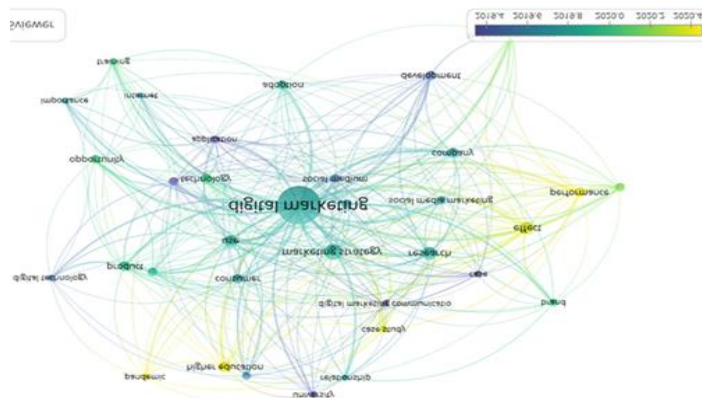


Fig. 3. Overlay visualization.

The results of the Density Visualization (Fig. 4) from VOSviewer show the density or density. The density of the research topic is indicated by a bright yellow. The lighter colour of a topic, the more research has been done. The dimmer colour means that the topic is rarely researched [11]. Dimly coloured topics such as “social media marketing”, “technology”, “performance”, “effect”, “Case study”, “brand”, and “higher education are topics that can be used as references for further research. The results of Karim et al. research (2021) also obtained one of the topics that were dim in colour, namely "effect" from the results of Density visualization [23].

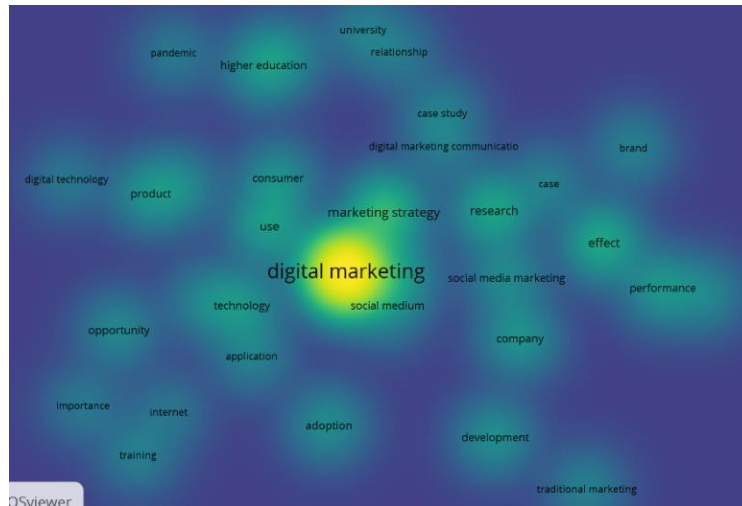


Fig. 4. Density visualization.

The mapping analysis on Frames Overlay visualization and Density visualization has related topics, namely the topics "social media marketing", "technology", "performance", "effect", "Case study", "brand" and "higher education". This means that these topics are rarely studied in research related to digital-based education marketing. This can be a novelty topic in terms of research and reference material for further research development.

4. Conclusions

The trend of writing articles in Scopus-indexed journals about digital-based education marketing in the 2017-2022 period did not fluctuate, a significant increase occurred from 2019 to its peak in 20220. Meanwhile, from 2021-2022 the number of published articles decreased. The results of the mapping analysis using the VOSviewer software have five topics related to digital-based education marketing, namely "performance", "effect", "case study", "brand" and "higher education" which are still rarely researched and are the latest topics in research. This topic can be an opportunity to conduct further research.

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