



BIBLIOMETRIC ANALYSIS AND VISUALIZATION OF CROWDFUNDING ARTICLES INDEXED IN SCOPUS BY INDONESIAN AUTHORS

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Abstract

This study aimed to analyze the bibliometric characteristics and trends of articles on crowdfunding indexed in Scopus by Indonesian authors. Information was taken from the Scopus database. In March 2023, reports were only searched if they had Indonesian authors or affiliations. This study used crowdfunding and its variations as search terms, with Indonesian affiliation being considered. Simple statistical techniques were applied, and VOSviewer software was used to perform a bibliometric analysis. This study visualized patterns of keyword co-occurrence, document citations, co-citation relationships, and bibliographic coupling. Indonesian authors' research in the area of crowdfunding has expanded quickly and with much cooperation. One of the most well-liked study areas in recent years is Website crowdfunding development. The credibility of crowdfunding in Indonesia has recently gained popularity, which presents a significant opportunity for additional research.

Keywords: Bibliometrics, Crowdfunding, Indonesia, Author.

INTRODUCTION

"FinTech," an abbreviation for "financial technology," refers to technologically enabled financial solutions. It is frequently seen as the new marriage of financial services and information technology (Arner et al., 2015). Services like crowdfunding, peer-to-peer lending, venture capital, private equity, or other types of financing that include technology are all considered fintech (Arner et al., 2015; Zalan & Toufaily, 2017). FinTech refers to a new era where various technical businesses provide financial services instead of traditional banks. In recent years, crowdfunding has grown in significance. The growth of entrepreneurial finance has given rise to crowdfunding, which allows businesses to raise money from many different investors via internet platforms. Literature on crowdfunding is still developing because it is a relatively recent phenomenon (Martínez-climate et al., 018). In recent years, crowdfunding has grown in significance.

However, a thorough economic literature review on this subject must be conducted.(Moritz et al., 2015). Due to its rising popularity, crowdfunding has drawn more academic and professional interest. The literature on crowdfunding has focused on a variety of campaign-related topics, including its success factors (Ferretti et al., 2021; Mollick, 2014), entrepreneurial (Ahlers et al., 2015); investors' and backers' motivations for participation (Bretschneider et al., 2014; Belleflamme & Lambert, 2014., 2014; Gerber et al., 2012;

Allison et al., 2015; Steigenberger, 2017); and the role of (Allison et al., 2015; Kim et al., 2016). Both are subsets of crowdsourcing and Fintech (Belleflamme & Lambert, 2014).

Recently, crowdfunding has emerged as an alternative funding source for various projects. Crowdfunding was initially used to finance artists from multiple fields (Agrawal, Catalini, & Goldfarb, 2013; Harzer, 2013; Meinshausen, Schiereck, & Stimeier, 2012). The development of various crowdfunding Internet platforms in the music industry (e.g., ArtistShare, SellaBand) has made this financing appealing to musicians. Other artistic and creative fields (for example, film and journalism) have since adopted the concept. Since 2010, crowdfunding for businesses has been extensively discussed and researched in practice and theory. Crowdfunding is viewed as closing the funding gap in the early stages of new ventures (Hemer, Schneider, Dornbusch, & Frey, 2011, p. 30; Meinshausen et al., 2012; R€othler & Wenzlaff, 2011).

A new kind of external financing called crowdfunding allows businesses to get money for initiatives still in the planning stages (Hope & Vyas, 2017). Due to the financial crisis and the subsequent decrease in bank credit that has impacted small and medium-sized businesses (SMEs) (Andrieş & Ursu, 2016; Cuomo et al., 2018), crowdsourcing has overtaken venture capital as a systematic method of obtaining finance. Crowdfunding is used in new and inventive ways, disrupting the conventional fundraising process. With the ability to raise money from a large group of investors through digital sites, crowdfunding is a manifestation of the evolution of entrepreneurship (Cholakova & Clarysse, 2015; Ordanini et al., 2011), in some ways disrupting the capital market area (Beaulieu et al., 2015). Contrary to common belief, crowdfunding, forming initiatives in the social sectors with a non-profit motivation gave rise to crowdfunding platforms, not the other way around (Hemer, 2011). Peer-to-peer lending and equity crowdfunding (P2P and EC), as well as crowdfunding without financial returns, have all been described as types of crowdfunding (Jancenelle & Javalgi, 2018; Miller et al., 2019; Pierrakis, 2019; Yang et al., 2020). Moreover, digital crowdfunding networks are divided into three categories: those with financial returns, those without monetary rewards, and those motivated by intrinsic factors to support the project (Martnez-Climent et al., 2018; Pierrakis, 2019).

The study of crowdfunding is growing and is very dynamic right now. This can be attributed to the following factors: (1) the fundamental idea behind crowdfunding, which enables anyone to access financing for any specific goal, such as raising money for a business, charity, or entrepreneurial endeavor (e.g., Ahlers et al., 2015; Allison, Davis, Short,

& Webb, 2015); social causes (Lehner & Nicholls, 2014); scientific research (del Savio, 2017; Siva, 2014); or educational or academic purposes (Bushong (Ahlers et al., 2015).

A persistent gap in our knowledge of the development of crowdfunding research is the importance of crowdfunding and the absence of review papers on this topic. This study aims to investigate the overall impact of crowdfunding in Indonesia across various multidisciplinary research fields. Significantly, this study's approach to reviewing crowdfunding research differs from earlier studies. This study categorizes impact values for writers, institutions, and nations (Gil-Gomez et al., 2021). The bibliometric analysis of crowdfunding aims to determine the most The primary goal of a bibliometric study is to analyze the previous collection of literature on a specific topic to produce objective findings (Tepe et al., 2022). This research aims to conduct a rigorous methodological examination of the literature on crowdfunding from an economic and business standpoint. The findings must be defined to the research question to demonstrate that this study adds new and relevant information to develop the relevant literature. This research is significant for at least two reasons. First, by understanding the research development in crowdfunding, this study can identify research gaps and current issues widely debated by researchers worldwide. Second, this paper may benefit other researchers by suggesting potential topics for further research. Using Pritchard's (1969) bibliometric analytical technique, this study gathered all peer-to-peer lending-related publications from Scopus.com. Our research focuses on the bibliometric analysis of crowdfunding. This research aimed to examine the bibliometric properties and trends of crowdfunding articles written by Indonesian authors in the Scopus database. These results could offer researchers valuable information about current research trends and the novelty of their work in crowdfunding.

METHOD

Bibliometrics assist in exploring, organizing, and analysis of enormous volumes of data (Daim et al., 2006). According to Albort-Morant et al. (2017), bibliometric research will help researchers comprehend the past and the progress of their studies while also allowing the formation of future lines of inquiry through their indicators (Cadavid-Higuita et al., 2012). A few years ago, bibliometric analysis and data collection were manually carried out (Garfield, 1955). However, as information and communication technology have advanced, these processes have become more accessible (Merigo et al., 2015a). The objective of the current bibliometric study is to evaluate the relative significance of crowdfunding in scholarly

research, the impact of its growth as a source of project financing, and its capacity to draw in capital for startups and entrepreneurs (Gil-Gomez et al., 2021). Scientific journals are increasingly paying more attention to the detailed bibliometric study of publications. In reality, several bibliometric studies examining the particular repositories of various publications have just been released (Gaviria-Marin et al., 2018). active and significant research areas. This is based on using the h-index, the number of publications, and the number of citations.

The literature on crowdfunding from an economic and business standpoint is targeted for categorical structural analysis in this study. This paper aims to explore the knowledge of crowdfunding, map The development of some methodologies for the analysis of scientific databases, such as journals (Pritchard, 1969), bibliometrics (Yoon & Lee, 2012), and the quantitative method of library materials (Bonilla et al., 2015; Broadus, 1987; Small, 1973), has also been aided by these technologies. According to Daim et al. (2006), bibliometrics facilitates the exploration, arrangement, and analysis of vast data. Albort-Morant et al. (2017) assert that bibliometric studies will enable the development of future lines of research through its indicators while also enabling the knowledge of the past and understanding of the advancements of the investigations (Cadavid-Higueta et al., 2012). The characteristics mentioned above have encouraged the application of bibliometrics across various disciplines. Several business and management-related topics have been studied in-depth from this perspective, including management (Podsakoff et al., 2008), social entrepreneurship (Rey-Mart et al., 2016), international entrepreneurship (Baier-Fuentes et al., 2018), business incubators (AlbortMorant & Ribeiro-Soriano, 2016), and knowledge management (Gaviria-Marin et al. Also, this paradigm has been used in other study fields, such as education and medicine (Diem & Wolter, 2013). (Franks et al., 2006). Also, several journals have recently used this methodology to summarise their articles.

A bibliometric analysis was done to see how Indonesian authors distributed their papers on crowdfunding. In March 2023, information was taken from the Scopus database. As one of the most reputable database indexes for international scientific publications, Scopus can provide comprehensive results information related to research results in various branches of science. The Scopus document search option with the period set to "all years" was primarily used for this research. This article identifies authors from Indonesia or affiliated with any Indonesian school, and the results were filtered by selecting Indonesia as the affiliation nation. The samples for this bibliometric analysis were collected in five stages. The modified

combinations by Suban et al. (2021), Sukmana (2020), and Narayan, Phan are as follows (2017). Figure 2 summarizes the steps for gathering research data. 16 March 10 p.m., all documents were taken for further analysis without regard for content or abstracts. We used the preferred reporting items for systematic reviews and meta-analyses (PRISMA) method (Moher.,2009) to ensure transparency and reduce selection bias in the process of collecting literature data, which is widely used as guidelines for a systemic literature review (e.g., Ref.). The literature data was collected and refined in four significant steps: identification, screening, eligibility evaluation, and acceptance.

The raw literature data set included 4.035 Scopus documents. Seventy-three documents were retained for final analysis after cleaning and refining work. The flowchart for processing the literature data is shown in Figure 1. Regarding the categorization of impact values; this study considers them for authors, institutions, and countries. In library and information sciences, bibliometrics and quantitative approaches are used to analyze bibliographic data (Broadus, 1987; Pritchard, 1969). Bibliometrics is frequently used to condense the most pertinent findings of a collection of bibliographic papers They are crowdfunding literature using a modern approach and statistical software, specifically VOSviewer. The key points discussed in this bibliometric analysis are co-authorship and co-occurrence using VOSviewer software, which focuses on the crowdfunding journal.

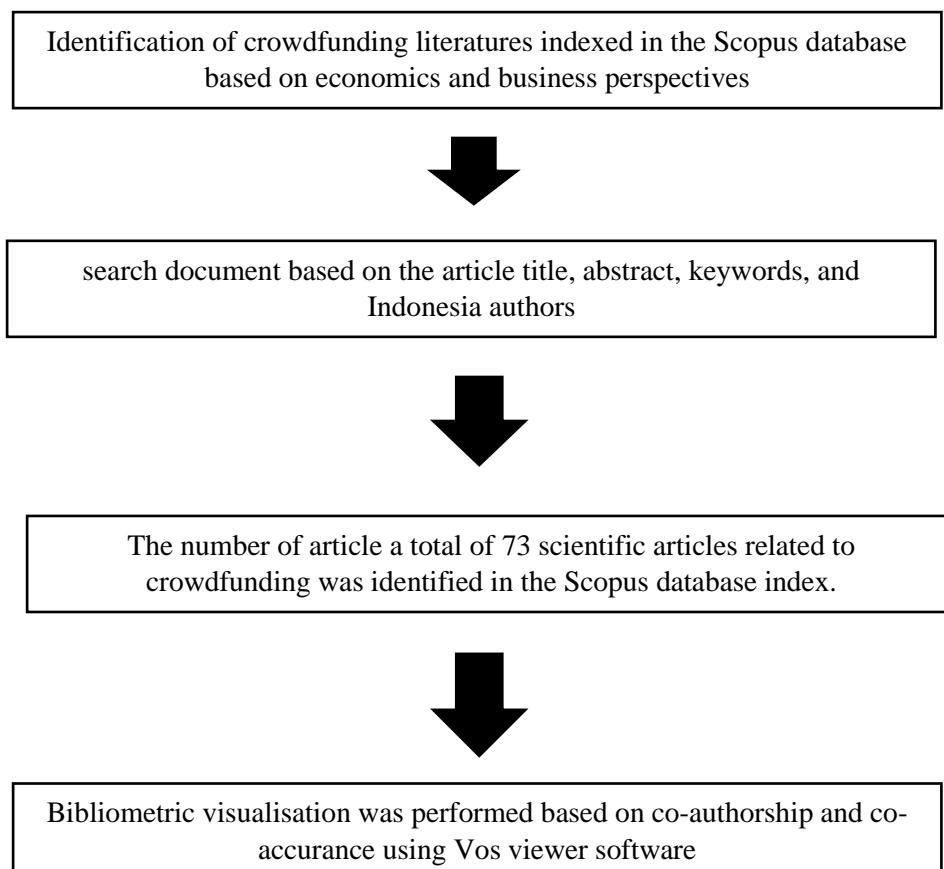


Figure 1. PRISMA workflow of literature identification and selection.

RESULT

The number of papers on crowdfunding published in Scopus was the first discovery made using data from the Scopus database. In 2017, the initial article was published in Scopus. (one piece). According to Figure 1, from 2017 to 2022, the number of papers released in journals with the Scopus index increased steadily. However, the quantity of documents released over the past five years has risen rapidly. As a result, 2020 might have marked a turning point in authors' interest in writing in journals with Scopus indexes.

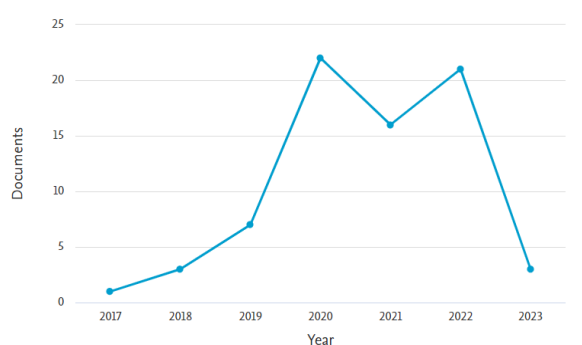


Figure 2. Yearly trends in articles on crowdfunding by Indonesian authors.

The following ranking was developed based on the number of publications by authors who have studied crowdfunding. Figure 3 and table 1 presents the study's findings, including the number of publications (and their position in the table) and the number of citations their pieces received. The first finding is that the three researchers from the School of Business and Management, Institut Teknologi Bandung, with the most significant number of citations, are Robiady N.D., Windasari N.A., and Nita A. From the 15 authors with the most papers released and citations. Nevertheless, the quantity of paper from Universitas Indonesia is higher than other authors.

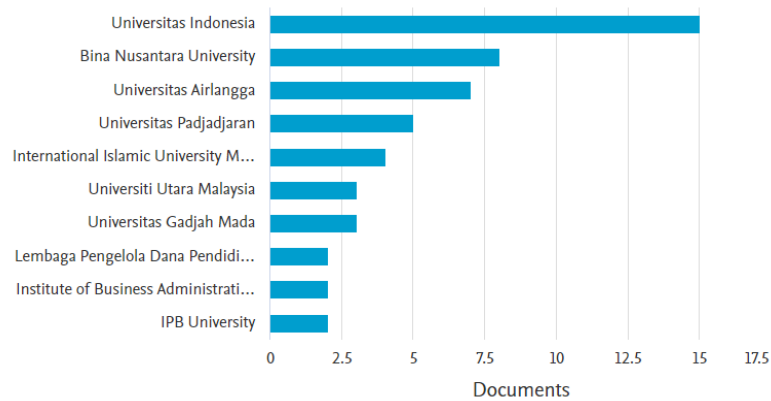


Figure 3 Top 15 authors and their affiliations.

Table 1. Top 15 Authors And Their Journal Publishers' Citation

Authors	Source Title	Issue	Cited by
Robiady N.D., Windasari N.A., Nita A.	International Journal of Research in Marketing	2	24
Darmansyah, Fianto B.A., Hendratmi A., Aziz P.F.	Journal of Islamic Marketing	4	23
Rijanto A.	Journal of General Management	2	17
Lukita C., Hatta M., Harahap E.P., Rahardja U.	Journal of Advanced Research in Dynamical and Control Systems	2	16
Hendratmi A., Ryandono M.N.H., Sukmaningrum P.S.	Journal of Islamic Marketing	5	15
Sidiq R.S.S., Jalil A., Willya R., Achmad W.	Webology	1	12
Hidajat T.	Journal of Financial Crime	1	12
Pratono A.H., Prima D.A., Sinaga N.F.N.T., Permatasari A., Ariani M., Han L.	Aslib Journal of Information Management	2	11
Alshater M.M., Saba I., Supriani I., Rabbani M.R.	Heliyon	9	9
Suryanto S., Rusdin R., Dai R.M.	Academy of Strategic Management Journal	5	9
Dikaputra R., Sulung L.A.K., Kot S.	Social Sciences	10	9

Hapsari M.I., Bin Mohd Thas Thaker M.A., Mohammed M.O., Duasa J.	Journal of Islamic Accounting and Business Research	3	6
Nania R.M., Sulung L.A.K.	Polish Journal of Management Studies	2	6
Alamsyah A., Nugroho T.B.A.	Journal of Physics: Conference Series	1	4
Perdana R.A., Suzianti A., Ardi R.	ACM International Conference Proceeding Series		4

The top 15 journals for Indonesian authors to submit articles on crowdfunding are shown in the table. 1. Nearly half (n=49, 67,12%) of the 73 papers were published in these 24 journals. In comparison, the remaining 24 articles 32,88%) were dispersed among more than 73 journals each publishing four or fewer articles. The 15 most popular publications are listed in table 1, with the International Journal of Research in Marketing first with two articles and the Journal of Islamic Marketing and ACM International Conference Proceeding Series tied for last with 1 article each. Moreover, according to the Scimago Journal rating (Suppl. 1), there were ten journals in the Q3 category, six in the Q2 category, five in the Q4 category, and one in the Q1 category, while two journals were still without a Scimago journal ranking.

The data on crowdfunding articles were then visualized in terms of countries related to co-authorship, author keywords related to co-occurrence, publishing sources related to citation, co-citation related to publication sources, and bibliographic coupling. Country-specific co-authorship was the first depiction. Analyzing country co-authorship served the purpose of assessing the level of interaction and influence between nations in the crowdfunding area. Figure 3 displays the distribution map of the crowdfunding's national co-authorship network. The co-authors of Indonesian crowdfunding papers represented thirty-three nations. The nodes' colors, which made 17 clusters, represented the study field's diversification.

The significant nodes in Figure 4 represent essential nations. The thickness of the link and the distance between the nodes reveal the degree of cooperation between countries, while links between nodes demonstrate the relationships between countries. Since the articles were penned by Indonesian authors, as depicted in Figure 3, Indonesia is at the network's core. Malaysia, the United States, the United Kingdom, Taiwan, Jordan, and Pakistan were the

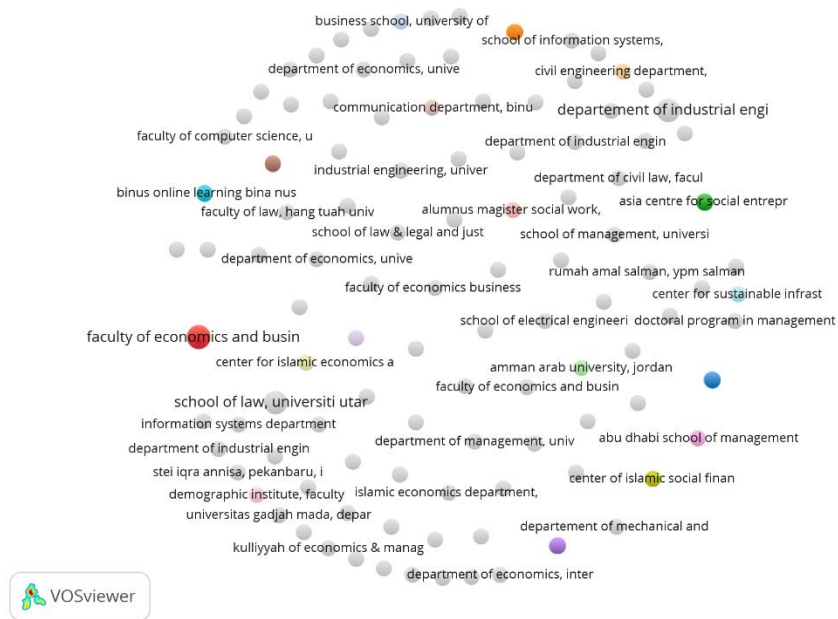


Figure 5 The citation network of articles on crowdfunding of publication source

The 175 references were based on VOSviewer. However, 84 sources fulfilled the requirement when a filter was applied to sources with at least one document and two citations, and VOSviewer divided them into 7 clusters. Only 12 of the 84 sources that fulfilled the criteria had strong connections with one another, as can be seen in Figure 5. The different clusters that were given to the nodes' colors correspond. The size of a node indicates how many citations the sources have gotten. The link thickness and node distance demonstrated the nodes' proximity and strength of their connection. Thicker nodes and more minor separations indicate more robust and stable relationships.

The study of bibliographic coupling was the final meta-analysis. Seventy-three articles on crowdfunding had at least one reference out of the 735 total articles. As depicted in Figure 7, the largest network comprised 49 documents, but not all were connected. The colors of the nodes indicate the 7 clusters into which the documents were divided. Each node in the visualization shown in Figure 7 indicated a creator or an author collective. Larger clusters denote authors with more significant influence. (s).

number of collaborators but no dedicated educational centers or programs for crowdfunding research. However, these results might be explained by the close ties between these two nations and the reality that many students undertake doctoral-level studies focusing on crowdfunding. The study of keyword co-occurrence revealed the patterns and connections between keywords that frequently show together in articles. These phrases' pattern makes it simpler for the researcher to spot cutting-edge study trends. As stated, recent studies have covered halal practices or tourism. Consequently, as an illustration, depicted in Figure 4. A large area of study is needed on the relationship between halal practices or halal tourism and economic growth. In light of this, in regions involving halal practices or halal tourism, Future studies could focus on topics like developing website crowdfunding, the credibility of crowdfunding in Indonesia.

Figures 2 and 5 demonstrate the lack of a relationship between the number of articles in a given journal and the number of citations. For instance, International Journal of Research in Marketing was first in terms of citations, even though it was sixth in terms of articles. Interestingly, despite being the top journal to publish papers on crowdfunding, Talent Development, and Excellence had no records in the citation network. This outcome also suggests that the amount of citations among the articles was influenced by the Scimago journal ranking by Scopus. According to the co-citation network's results, only about 50 sources out of more than 10,000 sources made the co-citation threshold of 20. This shows that there were many materials on crowdfunding that could be used as references. Additionally, the closeness and patterns of influence of the articles were suggested by the coupling of related documents in the bibliography. Only 7 of the 73 papers had networks, but had strong relationships, and the other 48 documents had none.

This research does have some restrictions, though. Numerous directions still need to be investigated because the scope of this study was restricted to five bibliometric analyses that concentrated on analyses of single kinds of units. Since only general keywords were used in the keyword search, it's possible that some pertinent pieces were overlooked. As a result, further investigation may broaden the categories of units that are examined, incorporate more specific keywords, and broaden the range of databases to incorporate additional ones, such as the Web of Science.

The statistical findings demonstrated a rise in the quantity of crowdfunding papers published in Scopus-indexed journals, particularly over the previous five years. The results also demonstrate that writers have numerous chances to work with researchers from other

nations. Website crowdfunding development and the credibility of crowdfunding in Indonesia has recently gained popularity, which presents a significant opportunity for additional research. The findings also demonstrated that there are many readily available and reachable sites for crowdfunding research for future study.

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