Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan
Vol. 11, No. 1, June 2025
http://ejournal.undip.ac.id/index.php/lpustaka

Research Article
Received: 17 September 2024, Revised: 8 January 2025, Accepted: 14 April 2025, Online: 1 June 2025

Bibliometric Analysis of Author Productivity of Articles Related to Islamic Manuscripts in Indonesia

Aqilah Dzira Afiyani[1)*], Rahma Devianti Alfariza[2)], Mahlul Magfiroh[3)], Anindya Gita Puspita[4)]
[1)2)3)4)]*Maulana Malik Ibrahim State Islamic University of Malang, Malang, Indonesia*
[1)*]aqilahdzira@gmail.com

Abstract
Background: Indonesia possesses a vast collection of 82,158 manuscripts, which hold valuable historical, cultural, and religious information. Among these, Islamic manuscripts play a significant role in the intellectual heritage of the region. However, the number of academic studies and publications related to these manuscripts remains limited compared to the total number owned. This indicates a gap between the availability of manuscript resources and scholarly attention towards them.
Objective: This study aims to analyze the productivity and collaboration patterns of researchers who study Islamic manuscripts in Indonesia. By conducting a bibliometric analysis, the study seeks to identify the most productive authors, collaboration networks, and publication trends over the past decade. The ultimate goal is to motivate increased academic interest and research on Islamic manuscripts.
Methods: This research employed bibliometric analysis to measure authorship productivity and collaboration using publication data from 2013 to 2023. Key indicators included the number of publications per author, author collaboration networks, and yearly publication trends. To test whether the distribution of author productivity aligns with Lotka's Law, the Kolmogorov–Smirnov (K–S) test was used with a significance level of $\alpha = 0.05$.
Results: The analysis identified Jamaluddin as the most productive author in the field of Islamic manuscript studies, while Undang Ahmad Darsa was found to have the most extensive author collaboration network. The period between 2019 and 2023 marked the highest productivity, with 123 articles published. It was also found that 89% of the authors contributed only one article during the 2013–2023 period. The K–S test showed a Dmax value of 0.096, which is greater than the critical value of 0.08. Therefore, H0 is accepted and H1 is rejected, indicating that the productivity distribution does not conform to Lotka's Law.
Conclusion: This study reveals that research productivity in the field of Islamic manuscripts in Indonesia is concentrated among a few individuals, with most authors contributing only once. The findings highlight the need for broader scholarly engagement and collaboration in this area. Encouraging more researchers to study Islamic manuscripts is essential to preserving and understanding Indonesia's rich manuscript heritage.

Keywords: Bibliometrics; islamic manuscripts; lotka law; and productivity

[*] Corresponding Author

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

INTRODUCTION

Indonesia is a country rich in culture, religion, and ethnicity. Indonesia is also a country that once adopted a kingdom system. Starting from the Hindu-Buddhist kingdom to the Islamic kingdom. The diversity of culture, religion, and ethnicity in Indonesia, produces valuable writings that contain information that is now known as manuscripts or ancient manuscripts. Ancient manuscripts or manuscripts are evidence of past activities and have great potential to reveal historical values owned by the owner or the area where the manuscript was written (Rahmawati and Wahdah 2024). Thus, ancient manuscripts have important value for history, science and culture so they need to be preserved so that these values are maintained. In line with Law Number 5 of 1992, Article 1, which states that cultural heritage objects are man-made objects, movable or immovable in the form of a unit or group, or parts or remains, which are at least 50 (fifty) years old, or represent a distinctive style period and represent a style period of at least 50 (fifty) years, and are considered to have important value for history, science, and culture. According to Made Ayu Wirayati (National Library of the Republic of Indonesia 2023), the number of manuscripts owned by the Indonesian nation is 82,158 manuscripts. Although Indonesia has thousands of manuscripts or ancient manuscripts, it turns out that there are still not many researchers in Indonesia who are interested in the study of manuscripts (I Gusti Ngurah Sudiana 2020). According to Permadi in Jamalie (2022), one of the reasons for the lack of research intensity on ancient manuscripts is because the existence of these manuscripts is very different from the current modern cultural pattern which tends to be more interested in practical and current things, while manuscripts or ancient manuscripts are considered as something obsolete both in terms of physical and content. In fact, Indonesia is thick with cultural values and local wisdom. Where one of the cultural values is expressed in manuscript literary works.

Therefore, studying manuscripts in Indonesia is important, so that the information contained in the manuscripts can be useful for the wider community. As stated by Dr. Siti Maziyah as a Lecturer in History at Diponegoro University, it is very important for academics to research manuscripts and disseminate information about these manuscripts to the public (Qudstia 2023). One of the efforts to disseminate the contents of the manuscript is by writing it in an article, so that with the writing, it is hoped that everyone can read the script that existed in the past.

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

Based on the problems that have been explained, where the number of articles related to published manuscripts is not comparable to the number of manuscripts owned by Indonesia, bibliometric analysis was carried out to determine the development of studies related to manuscripts. According to Effendy et al. (2021) bibliometric analysis has a role in evaluating the results of scientific research and mapping scientific fields, tracking/tracing the development of new knowledge in certain fields. In this study, bibliometric analysis was also carried out to see the productivity of authors in writing articles related to manuscripts, especially Islamic manuscripts. This is based on the consideration that Indonesia is a country with the largest Muslim population in the world. In 2022, the number of Indonesian Muslims was 241,699,189 people or 87.2% (Rizaty 2023). In addition, Indonesia also has a very large number of Islamic boarding schools, namely 39,167 (Doni 2023). From these data, it is possible that Indonesia has many Islamic manuscripts spread across all provinces. This is also reinforced by the statement of Ibnu Rawandhy N. Hula (2021) who said that of the various categories of Nusantara manuscripts, Islamic religious manuscripts are one type of manuscript category that is relatively large in number. Considering that Indonesia used to adhere to an Islamic kingdom system that also had many scholars.

Research discussing the productivity of scientific article writers was previously conducted by Junandi & Dwiyantoro (2021) with the research title "Productivity of Scientific Article Writers in the Field of Information and Library Science in Accredited Journals Ranked Sinta 2, 3, and 4 in 2015-2019". The purpose of this study was to determine the productivity pattern of article writers in the field of information and library science in 2015-2019 indexed in SINTA ranked 2, 3, and 4 based on Lotka's rules. The method used in this study is a quantitative approach with bibliometric analysis. The results of the study show that the data analyzed are in accordance with Lotka's law. Another study entitled "Analysis of Obsolescence and Author Productivity Using will Lotka's Law in Entrepreneurship Journals in 2015-2019" conducted by Rodin and Apriyani (2021). The purpose of this study was to determine the level of obsolescence of a literature and to determine the productivity of authors with Lotka's law in literature with the subject of entrepreneurship in 2015-2019. The research method used is a quantitative research method by conducting citation analysis. As a result, the study shows that there is a relationship between the number of authors and the number of articles produced as in Lotka's law. Therefore, a study entitled "Bibliometric Analysis of the Productivity of Article Authors Related to Islamic Manuscripts in Indonesia" was conducted by researchers so that the findings of this study can describe the development of article publications related to Islamic manuscripts that have been carried out and to see the productivity of the authors.

METHODS

The method used in this study is a quantitative method with bibliometric analysis used to describe the productivity of article writers related to Islamic manuscripts in Indonesia. Bibliometrics is one of the research methods in the field of library and information science that uses quantitative and statistical analysis in its completion (Junandi and Dwiyantoro 2021). The subjects of this study were articles related to Islamic manuscripts in Indonesia with a period of 2013-2023. While the object of this study is the productivity of writers (Junandi and Dwiyantoro 2021). The subjects of this study are

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

articles related to Islamic manuscripts in Indonesia with a span of 2013-2023. While the object of this study is the productivity of authors.

1. This research was conducted in several stages. Among them are:
2. Harvesting data through the Publish or Perish application with the keywords "Islamic manuscripts", "ancient Islamic manuscripts", "Indonesian turats", "ancient Indonesian Islamic script", "Indonesian Islamic manuscripts", "Islamic manuscripts" with a range of 2013-2023 through the Google Scholar database with a maximum data retrieval limit of 1000 search results.
3. Filtering data according to needs so that 209 data are obtained.
4. Completing bibliographic data including title, author name, year, volume, article number, abstract, keywords, and journal name through the Mendeley application.
5. Conducting co-author analysis and data visualization using the VOS Viewer application.
6. Conducting analysis of author productivity calculations using the Lotka method

Lotka's Law also states that of all authors in a particular field who contribute one article, around 60% (Nashihuddin and Haikal 2020) . The steps in implementing Lotka's Law are as follows:

1. Determining the author's productivity pattern using Lotka's Law. The steps used at this stage are as follows:
   a. Determining the value of author participation using the *Complete Count technique*.
   b. Determining the estimated values of Lotka's law parameters (parameters n and C)

      $n = \frac{N\sum XY - \sum X \sum Y}{N(\sum X^2) - (\sum X)^2}$ And $C = \frac{1}{\sum \frac{1}{x^n}}$ (Iftinan, AvidiansyaH, and Meilia 2019)

      x = number of articles X = log x
      y = number of authors Y = log y
   c. Calculating the theoretical distribution of Lotka's Law with the equation used is $Y_x = C/x^n$
2. Testing Lotka's Law using the Kolmogorov-Smirnov Test (KS Test) using the formula:

   $D_{max} = \max| f_0(x) - S_n(x) |$ (Hasan and Journalist 2022)

   $f_0(x)$ = cumulative sum of theoretical frequencies
   $S_n(x)$ = cumulative sum of author percentages

Hypothesis for testing Lotka's law:

H_0 : The author's productivity does not comply with Lotka's law.

H_1 : The author's productivity is in accordance with Lotka's law.

The criteria for determining the hypothesis are as follows:

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

If the D max value is smaller than the critical value, then H 0 is rejected and H 1 is accepted, so that the productivity of the article writer is in accordance with Lotka's law. Meanwhile, if D max is greater than the critical value, then H 0 is accepted and H 1 is rejected, so that the productivity of the article writer is not in accordance with Lotka's law.

RESULTS AND DISCUSSION

Frequency of Publication Productivity Based on Author Collaboration

Data visualization carried out by the author using the help of the VOSviewer application. This visualization is done so that the data obtained can be presented clearly and easier to understand. In visualizing data using VOSviewer, the author conducted data analysis based on the *co-author analysis type*. *Co-author analysis* is an analysis carried out with the aim of seeing the author network pattern (Soesanto and Handalani 2023) .

Based on the results of data visualization, of the 209 articles that have been filtered, not all of the authors wrote the articles individually or alone, because there were several authors who collaborated with other authors to conduct research related to Islamic manuscripts.

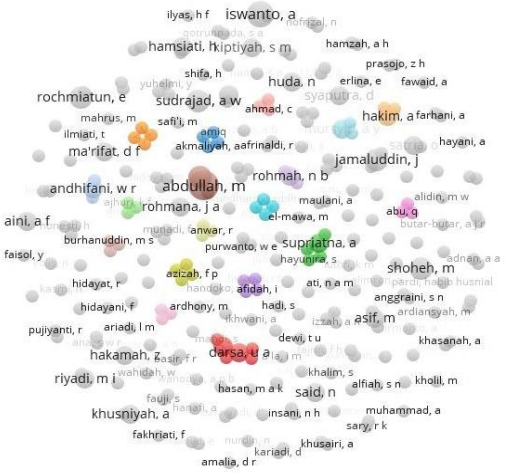

Figure 1. Network Visualization

Figure 1 shows the results of network analysis to see authors who have relationships with other authors. Based on the results of the analysis using VOSviewer, there are 166 *clusters.* Authors who are related to other authors will create relationships with each other, which are depicted by a circle pattern. The circle pattern depicted with a larger size and brighter color means that the relationship involves more relationships between authors compared to the relationships that occur with other authors. This is what is then called *a cluster*. While the circle that is smaller in size and not too bright in color indicates that the author has few relationships with other authors.

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

In other words, the bigger and brighter the color in *the cluster*, the more or stronger the network of authors in the *cluster*. While the dimmer the color on the map means the lower the strength of the network of authors in the *cluster*. The author who has the strongest relationship or network occurs in the Undang Ahmad Darsa author *cluster* which has a pattern as in the following image.

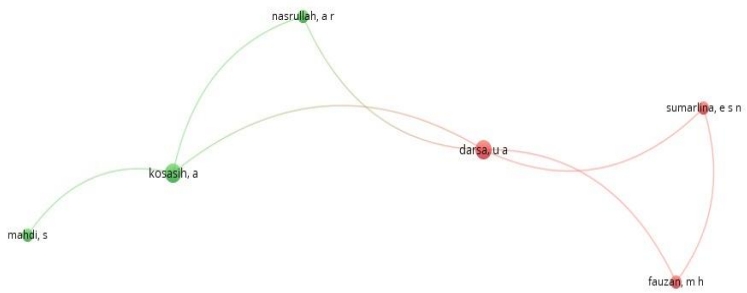

Figure 2. The Most Networked Author Relationship Patterns

Through Figure 2, it can be seen that the author Undang Ahmad Darsa has connections with five other authors, namely Sutiono Mahdi, Ade Kosasih, Ahmad Rijal Nasrullah, Elis Suryani Nani Sumarlina, and Mohammad Hazmi Fauzan. The six authors are connected or related to each other, even though they did not write the same article. This relationship occurred because Sutiono Mahdi and Ade Kosasih collaborated in writing an article. Then, in another article, Ade Kosasih collaborated with Undang Ahmad Darsa. Furthermore, Undang Ahmad Darsa also collaborated with Ahmad Rijal Nasrullah and Ade Kosasih. After that, in a different article, Undang Ahmad Darsa collaborated with Elis Suryani Nani Sumarlina. Finally, Elis Suryani Nani Sumarlina collaborated again with Undang Ahmad Darsa and Mohammad Hazmi Fauzan in another article. From these collaborations, a strong pattern of related relationships and networks was created even though they did not collaborate in the same article. In the technology literature, author productivity is positively correlated with established collaboration patterns, even when overall collaboration is low (Harande 2007) .

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

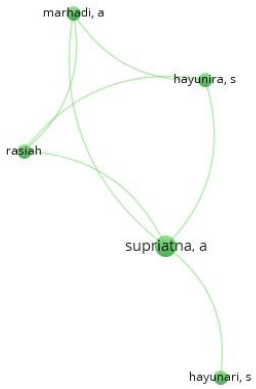

Figure 3. The Most Networked Author Relationship Patterns

Through Figure 3, the image above shows the relationship pattern of other authors who also have a strong network pattern in addition to the network pattern owned by Undang Ahmad Darsa with five other authors. This relationship pattern occurs in authors Akhmad Marhadi, Sasadara Hayunira, Rasiah, Agus Supriatna, and Sasadara Hayunari.

Based on the analysis through VOSviewer, it was found that the authors who networked the most with other authors were Undang Ahmad Darsa with five other authors and Agus Supriyatna with four authors. Meanwhile, based on the results of data processing through Microsoft Excel, it was found that the author who produced the most articles in a span of 10 years was Jamaluddin with a total of 5 articles. Furthermore, Agus Iswanto and Muhammad Abdullah each wrote 4 articles. There were five authors who each wrote 3 articles, namely Ahmad Wahyu Sudrajad, Devi Fauziyah Ma'rifat, Endang Rochmiatun, Iin Suryaningsih, and Islah Gusman. The frequency of author productivity can be seen in the table below.

TABLE 1
LIST OF AUTHORS WITH THE MOST ARTICLES

No.	Author Name	Number of Articles
1.	Jamaluddin	5
2.	English	4
3.	Muhammad Abdullah	4
4.	Ahmad Wahyu Sudrajad	3
5.	Devi Fauziyah Ma'rifat	3
6.	The Endang Rochmiatun	3
7.	Iin Suryaningsih	3
8.	Gusman's Reconciliation	3

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

E-ISSN: 2540-9638, ISSN: 2302-4666.
doi: http://doi.org/10.14710/lenpust.v11i1.66839

The table 1 above only displays the names of authors who have the most articles in a 10-year span. The largest number of articles selected are five, four and three articles.

Frequency of Publication Productivity by Year

In addition to describing the relationship pattern or network pattern of the article author, through VOSviewer, the author can also analyze the distribution of the publication year of the articles. This analysis can be seen through *the overlay visualization* as in the image below:

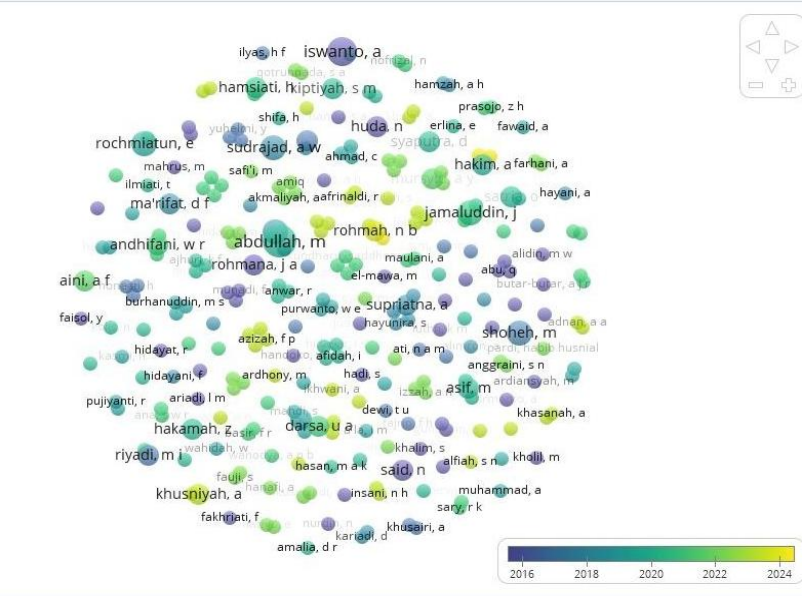

Figure 4. Overlay Visualization

Through Figure 4, the image is a distribution image related to the year of publication of the article. The distribution of years is analyzed within the last 8 years, namely 2016-2024. For the oldest, it is colored dark blue. The color will change to brighter, namely yellow if the article was published in a relatively recent or recent year. From the image, it can be seen that of the 209 articles that the author analyzed, the year of publication of the article was mostly published in 2018-2022. This is proven because the visualization results show that the dominant color is more, namely purple to bluish and dark green to light green. The number of articles each year can be seen in the following table.

TABLE 2
YEAR OF PUBLICATION WITH NUMBER OF ARTICLES

No.	Year	Number of Articles
1.	2013	8
2.	2014	7
3.	2015	20
4.	2016	20
5.	2017	13

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

6.	2018	18
7.	2019	21
8.	2020	27
9.	2021	28
10.	2022	22
11.	2023	25

Based on the table above, it can be seen that in the first two years, the number of articles published was relatively low, only 8 articles in 2013 and slightly decreased to 7 articles in 2014. There was a significant spike in the number of articles published in 2015 and 2016, namely 20 articles each. This indicates an increase in activity in publishing articles related to manuscripts in that year. After the spike in 2015 and 2016, there was a slight decrease in 2017 with the number of articles being 13 articles, but the number increased again in 2018 to 18 articles.

The trend of research related to manuscripts continues to increase, as evidenced by the presence of 21 articles in 2019, 27 articles in 2020, and a peak in 2021 with a total of 28 articles. After reaching its peak in 2021, the number of articles decreased slightly in 2022 with only 22 articles, but in 2023 it rose again to 25 articles. Thus, it can be concluded that the most productive year for research in the field of manuscripts occurred in 2019-2023 with a total number of articles of 123 articles. In that year, there was a significant increase compared to previous years in the period 2013-2018 which produced 86 articles. The increase and decrease in the productivity of writing scientific articles related to manuscripts by year can be seen in the graph below.

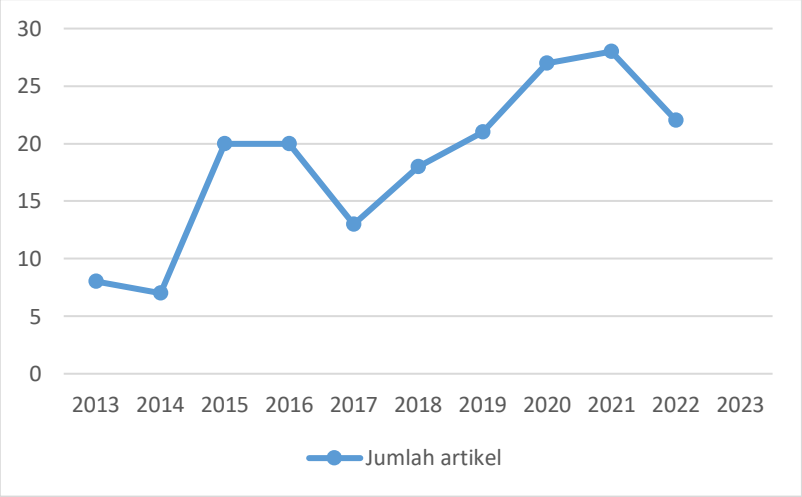

Figure 5. Article Writing Productivity Graph by Year

Author Productivity Calculation Based on Lotka's Law

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

Calculation of Parameter Values n and C

In this study, the calculation of the number of authors was done with *a complete count,* where the *complete count technique* was done with each author in one article, given 1 point. As a result, there were 289 authors. The calculation can be seen in the table below:

TABLE 3
RECAPITULATION OF THE NUMBER OF AUTHORS AND THE NUMBER OF ARTICLES

Complete Count

Number of Articles (x)	Number of Authors (y)
1	259
2	22
3	5
4	2
5	1
Amount	**289**

The data listed in table 1 contains data on the number of articles (*x*) and the number of authors (*y*). The number of articles (x) is a representation of the productivity of articles produced by authors within a period of 10 years (2013-2023). While the number of authors (*y*) is the number of authors who contributed to writing articles. Then the table is developed into 6 columns, consisting of the number of articles (*x*) column, the number of authors (*y*), the *log x column* symbolized by X, *the log y column* symbolized by Y, the XY column, and the X2 column. The values generated in the column are then used as the basis for calculations to estimate the parameter values *n* and C in Lotka's law, as shown in the table below:

TABLE 4
CALCULATIONS FOR ESTIMATING LOTKA'S LAW PARAMETERS

No	Number of Articles (*x*)	Number of Authors (*y*)	X=log *x*	Y=log *y*	XY	X ²
1	1	259	0	2.4133	0	0
2	2	22	0.30103	1.34242	0.40411	0.090619
3	3	5	0.477121	0.69897	0.33349	0.227645
4	4	2	0.60206	0.30103	0.18124	0.362476

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

5	5	1	0.69897	0	0	0.488559
Amount	**ΣN = 5**	**Σy = 289**	**ΣX = 2.079181**	**ΣY = 4.75572**	**ΣXY = 0.91884**	**ΣX2 = 1.169299**

n value and C value are calculated using the following formula:

$$n = \frac{N\Sigma XY - \Sigma X\Sigma Y}{N(\Sigma X^2) - (\Sigma X)^2}$$

Where $n = -b$

The values in table 2 are then entered into the equation.

$$n = \frac{5(0{,}91884) - (2{,}079181\ .\ 4{,}75572)}{5(1{,}169299) - (2{,}079181)^2}$$

$$= \frac{4{,}59420 - 9{,}88800}{5{,}846495 - 4{,}322993}$$

$$= \frac{-5{,}2938}{1{,}523502}$$

$$= -3{,}47476$$

Since $n = -n$, then $n = -(-3.47476)$

$= 3.47476$

From the calculation through the equation, the value of *n* is 3.47476. This means that the exponent for the number of articles is 3.47476. After that, the value of C is found using the formula:

$$C = \frac{1}{\Sigma \frac{1}{x^n}}$$

TABLE 5
CALCULATIONS FOR ESTIMATING LOTKA'S LAW PARAMETERS

Article (*x*)	x^n	$1/x^n$
1	1	1
2	11,1175	0.089948
3	45,4866	0.021985

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

4	123,599	0.008091
5	268,383	0.003726
	Σ1/x^n	**1.123749**

With an *n value* of 3.3921, the C value obtained is:

$$C \frac{1}{\mathbf{1}, 123749}$$

$$C = 0{,}88987$$

After doing the calculation, the value of *n* is 3.3921 and the value of C is 0.88987. Thus, the productivity equation of authors in journal articles related to Islamic manuscripts in 2013-2023 is obtained, namely $y_x . X^{3,47476} = 0{,}88987$. This means that the number of authors with a contribution of 1 article is 89% of the total authors who contributed to 209 journal articles related to Islamic manuscripts over a period of 10 years (2013-2023). Lotka's Law also states that of all authors in a particular field who contribute one article, around 60% (Nashihuddin and Haikal 2020) . Thus, the productivity percentage of 89% is included in the low category. This happens because as many as 89% of authors produce 1 article, so that only 11% of authors produce more than 1 article. The frequency distribution of author productivity from observations and theoretical value estimates using Lotka's theory is described in the following table:

TABLE 6
NUMBER OF AUTHORS OF LOTKA'S OBSERVATION RESULTS AND THEORETICAL PREDICTIONS WITH THE YX PATTERN. X^(3.47476) = 0.88987

Article (*x*)	**Author (*y*)**	**%Observation Result Author *y* ' (*y* /Σy*100%)**	**%Author's Estimate Based on Evidence $y^x = C/x^n$**
1	259	0.896193772	0.88987
2	22	0.08304498	0.00800419
3	5	0.017301038	0.00195763
4	2	0.003460208	0.00719965
5	1	0.006920415	0.00331567

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

Based on the calculations listed in the table above, it is known that there is a difference between the percentage of article writers based on observation results and the percentage of Lotka's theoretical estimates. The number of articles written by the author has a range between 1-5 articles. No author produced articles with a number above 5 articles.

The percentage of authors who produced 1 article based on observation results has a percentage of 89%, while based on Lotka's theoretical value calculation it is 88%. Then the authors who contributed to producing 2 articles based on observation results have a percentage of 8.30% and 0.80% based on Lotka's theoretical value calculation. Furthermore, authors who produced 3 articles have a percentage of 1.17% based on observation results and 0.19% based on theoretical value calculations. Authors who produced 4 articles have a percentage of 0.34% based on observation results and a percentage of 0.71% based on Lotka's theoretical value calculations. And finally, authors who produced 5 articles based on observation results have a percentage of 0.69% and 0.33% based on Lotka's theoretical value calculations. This means that more authors of articles related to Islamic manuscripts in the 2013-2023 period only wrote 1 article. Based on previous research that was used as a reference, this also occurs in article writers in other fields, so that the phenomenon of article writers only producing 1 article even over a long period of time is commonplace.

To make it easier to analyze the percentage differences between the observation results and the percentage results of Lotka's theoretical calculations, the author presents the data in the graph in the following image:

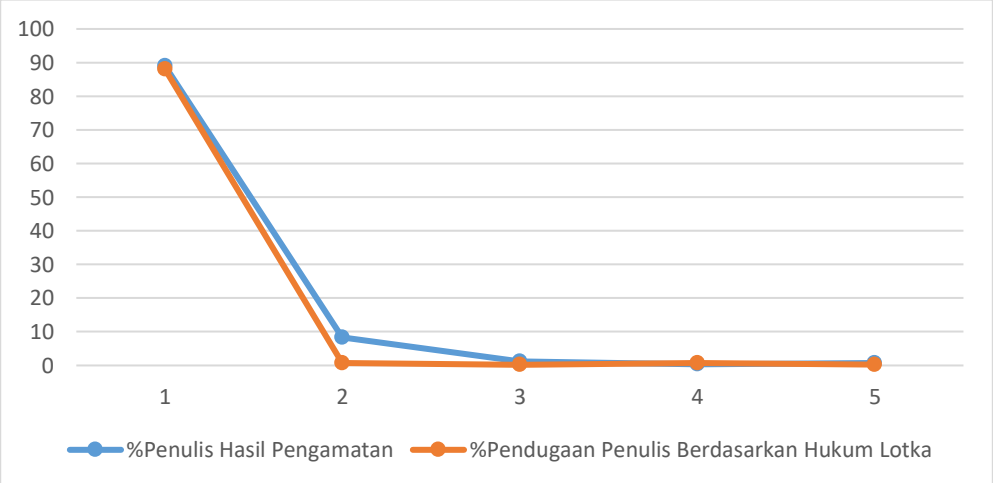

Figure 7. Comparison of the Number of Authors of Observation Results and Lotka's Law Predictions

Through the graphic image, it can be seen that the percentage of observation results depicted by the blue line and the percentage of Lotka's Law prediction depicted by the red line do not have a significant difference.

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

Kolmogorov-Smirnov Test (KS Test)

Next, the author conducted a Kolmogorov-Smirnov test on Lotka's law equation based on the values of *n* and C that had been obtained previously. The calculation can be seen in the following table:

TABLE 7
KOLMOGOROV-SMIROV TEST

Article (x)	Author (y)	Percentage of Number of Authors [y']	Cumulative Sum Percentage y' [$S_n(x)$]	Lotka's Theoretical Frequency Rule [y_x]	Sum of Theoretical Frequency [$f_0(x)$]	$\lvert f_0(x) - S_n(x) \rvert$
1	259	0.896193772	0.896193772	0.88987	0.88987	0.006323772
2	24	0.083044983	0.979238755	0.00800419	0.89787419	0.081364565
3	5	0.017301038	0.996539793	0.00195763	0.89983182	**0.096707973**
4	1	0.003460208	1.000000001	0.00719965	0.90703147	0.092968531
5	2	0.006920415	1.006920416	0.00331567	0.91034714	0.096573276

The maximum deviation value (D_{max}) in table 5 is 0.096. In this Kolmogorov-Smirov test, the critical value is used at the level of reality α = 0.05. This means that the data error is 5% and the data confidence level is 95%. The number of authors (*N*) of journal articles related to Islamic manuscripts in the period 2013-2023 is 289 authors. With a critical value at the level of reality α = 0.05, it can be found using the following equation:

$$\alpha = 0{,}05 = \frac{1{,}36}{\sqrt{N}}$$

$$= \frac{1{,}36}{\sqrt{289}}$$

$$= 0.08$$

Based on the calculation results, the critical value is 0.08 and the maximum deviation value (D_{max}) is 0.096. In this hypothesis test, the null hypothesis scheme (H0) and alternative hypothesis (H1) are used, where $_{H0}$ means $_{that}$ the author's productivity is not in accordance with Lotka's law. While H1 $_{means}$ that the author's productivity is in accordance with Lotka's law.

In this study, the Kolmogorov-Smirov test using the α level = 0.05 shows that the Dmax value $_{of}$ 0.096 is greater than the critical value of 0.08, so H0 $_{is}$ accepted and H1 $_{is}$ rejected. This means that the productivity of article writers related to Islamic manuscripts in Indonesia does not comply with Lotka's law. These findings are similar to the research

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

conducted by Junandi and Dwiyantoro (2021) , where the results of calculating the productivity of journal writers ranked SINTA 2 and 4 also showed that the Dmax value was greater than the critical value

CONCLUSIONS

Based on the discussion above, it can be concluded that the most productive author conducting research related to Islamic manuscripts is Jamaluddin with a total of 5 articles . Meanwhile, the author who has the most networks with other authors is Undang Ahmad Darsa who has connections with five other authors . The most productive year for research related to Islamic manuscripts occurred in 2019-2023 with a total number of articles of 123 articles. While in previous years, namely in the period 2013-2018, it produced 86 articles.

The results of the author productivity equation in journal articles related to Islamic manuscripts in 2013-2023, namely y x .X^3,47476 = 0,88987this result shows the number of authors with a contribution of 1 article of 89% of the total authors who contributed to 209 journal articles. Thus, the productivity percentage of 89% is included in the low category. Meanwhile, the Kolmogorov-Smirnov test using the α level = 0.05 shows that the D max value of 0.096 is greater than the critical value of 0.08, so H 0 is accepted and H 1 is rejected. This means that the productivity of article writers related to Islamic manuscripts in Indonesia is not in accordance with Lotka's law.

Suggestions for further research, can explore more deeply the factors that influence the low productivity of authors in Islamic manuscript research such as institutional support, access to resources, motivation, and obstacles faced. Then can examine how institutional policies influence the ability of authors to collaborate, both nationally and internationally. In addition, conduct research by comparing the productivity patterns of article authors on Islamic manuscripts with other relevant fields of study, such as Islamic history or library science. In the testing process, it is recommended to search for research data through more database searches, not just in one or two places, so that the data obtained is more accurate.

Academic and research institutions can consider measures to support increased productivity of Islamic manuscript researchers and the development of collaboration. These measures include establishing a center for Islamic manuscript studies as a hub for collaboration between researchers both nationally and internationally. This network can organize activities such as seminars and workshops on Islamic manuscripts to improve researchers' research and scientific writing skills. Furthermore, institutions can encourage collaboration by building a data-driven digital platform that allows researchers to connect with other researchers who have similar research interests. In this platform, researchers can share information about research projects, manuscript resources, and collaboration opportunities. In addition, to support sustainable productivity, institutions can also provide incentives in the form of research grants, awards, and access to funding for international collaborative projects.

AUTHOR CONTRIBUTIONS

[Aqilah Dzira Afiyani]: Writing the original draft, review and editing, supervision. [Rahma

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839

Devianti Alfariza]: Writing the original draft, review and editing, supervision. [Mahlul Magfiroh]: Writing the original draft, review and editing, supervision. [Anindya Gita Puspita]: Writing the original draft, review and editing, supervision.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

FUNDING

This research received no specific grant from any funding agency.

ACKNOWLEDMENTS

We would like to acknowledge and thank all those who have given valuable contributions to this study.

REFERENCES

Doni, D. 2023. Government creates tens of thousands of entrepreneurial santri. Kominfo.go.id.

Effendy, F., Gaffar, V., Hurriyati, R., & Hendrayati, H. (2021). Bibliometric analysis of the development of research on the use of mobile payments with Vosviewer. Interkom Journal: Journal of Scientific Publication in the Field of Information and Communication Technology, 16(1), 10–17. doi: 10.35969/interkom.v16i1.83.

Harande, Y. (2007). Author productivity and collaboration: An investigation of the relationship using the literature of technology. Libri: International Journal of Libraries and Information Studies. doi: https://doi.org/10.1515/LIBR.2001.124.

Hasan, T., & Yurnalis. (2022). Bibliometric study of scientific publication productivity of UNRI lecturers in Scopus indexed journals based on Lotka's law argument. Jurnal Gema Pustakawan, 10(2), 88–103. doi: 10.31258/jgp.10.2.88-103.

I Gusti Ngurah Sudiana. (2020). UHN IGB Sugriwa will have a center for Nusantara manuscript studies. Ministry of Religion of the Republic of Indonesia.

Hula, I. R. N., & Kasim, A. (2021). Al-Qawa'id Al-Sittah in Rasm Al-Mushaf (Six rules of Rasm and the uniqueness in Qur'an). Journal of Arabic Language and Literature, 12(2), 385–418.

Iftinan, D. N. A., Avidiansyah, Z., & Meilia, R. A. (2019). Application of Lotka's law in Journal of Social and Political Sciences (JSP) Gadjah Mada University. Bibliotika: Journal of Library and Information Studies, 3(1), 1–23.

Jamalie, Z. (2022). Religious manuscripts and local Islamic studies (historical review). South

E-ISSN: 2540-9638, ISSN: 2302-4666.
doi: http://doi.org/10.14710/lenpust.v11i1.66839

Kalimantan: Antasari Publisher.

Junandi, S., & Dwiyantoro, D. (2021). Productivity of scientific article writers in the field of information and library science in accredited journals ranked Sinta 2, 3 and 4 in 2015–2019. VISI Pustaka: Bulletin of the Inter-Library Information Network, 23(2), 117–128.

Nashihuddin, W., & Haikal, M. (2020). Analysis of productivity of article writers of Biotropia journal in 2017–2019 using Lotka's rule. ResearchGate. doi: 10.13140/RG.2.2.15294.72006.

Permadi, T. (2017). The Nusantara manuscript and various aspects that accompany it. In http://file.upi.edu/directory/fpbs/jur._pend._bhs._and_literature_indonesia (pp. 1–33).

National Library of the Republic of Indonesia. (2023). National Library preserves 806 copies of ancient manuscripts in the regions. National Library of the Republic of Indonesia.

Qudstia, F. I. (2023). The importance of academics researching ancient manuscripts. Joglo Jateng.

Rahmawati, L., & Wahdah, S. (2024). Preservation of ancient manuscripts (manuscripts) in South Kalimantan (Case study at the Library and Archives Service of the Province and the Lambung Mangkurat Museum of South Kalimantan). Pustaka Karya: Scientific Journal of Library and Information Science, 12(1), 95–111. doi: 10.18592/pk.v12i1.12459.

Rizaty, M. A. (2023). The majority of Indonesia's population is Muslim in 2022. DataIndonesia.id.

Rodin, R., & Apriyani, E. (2021). Analysis of author obsolescence and productivity using Lotka's law in entrepreneurship journals in 2015–2019. Imam Bonjol Journal: Information and Library Science Studies, 5(1), 70–87.

Soesanto, H., & Handalani, R. T. (2023). Bibliometric analysis of research trends on knowledge management based on authors' affiliation from Indonesia. [Journal name not specified], 11(1), 1–10.

Cite this article: Afiyani, A. D., Alfariza, R. D., Magfiroh, M., & Puspita, A. G. (2025). Bibliometric analysis of author productivity of articles related to Islamic manuscripts in Indonesia. *Lentera Pustaka: Jurnal Kajian Ilmu Perpustakaan, Informasi dan Kearsipan*, *11*(1), 1-17. http://doi.org/10.14710/lenpust.v11i1.66839

doi: http://doi.org/10.14710/lenpust.v11i1.66839