

Bibliometric Evaluation of Open Access Publishing in Intellectual Property Rights

Evy Febryani¹, Arief Fahmi Lubis²

¹ Universitas Muhammadiyah Palembang

² Sekolah Tinggi Hukum Militer

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ABSTRACT

This study conducts a bibliometric evaluation of open access publishing in the realm of intellectual property rights (IPR), aiming to provide insights into the landscape, trends, and potential research directions within this domain. Utilizing data spanning from 1970 to 2024, encompassing 1000 papers with 9684 citations, the analysis employs network visualization, cluster analysis, and trend examination techniques. The results highlight the collaborative nature of scholarly endeavors in IPR, with key themes emerging around the economic implications of IPR, its intersection with global trade, biotechnology, and human rights. These findings offer valuable insights for researchers, policymakers, and practitioners, facilitating evidence-based decision-making and promoting transparency and accessibility in the dissemination of IPR-related knowledge.

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Corresponding Author:

Name: Evy Febryani

Institution: Universitas Muhammadiyah Palembang

Email: efebryani_1202@yahoo.com

1. INTRODUCTION

The advent of open access publishing has revolutionized the dissemination of scholarly research, fostering greater accessibility to knowledge across various academic disciplines [1]. Intellectual Property Rights (IPR) is a crucial and dynamic domain that plays a pivotal role in the modern knowledge economy [2]. It encompasses a wide range of legal, economic, and ethical issues related to patents, trademarks, copyrights, and other forms of intellectual property protection [3]. The field of IPR is characterized by its rapid evolution, driven by technological advancements, globalization, and changing legal and regulatory frameworks [4], [5].

Open access publishing, as a fundamental paradigm shift in scholarly communication, offers a unique opportunity to democratize access to IPR research [6], [7]. It allows researchers, practitioners, policymakers, and the general public to access and benefit from the latest developments in the field, irrespective of their institutional affiliations or financial resources [8]–[10]. The open access movement has gained momentum over the past two decades, with numerous journals and repositories dedicated to IPR research becoming available to a global audience [11]–[13].

However, the growth of open access publishing in the IPR domain raises several critical questions and challenges [14], [15]. As this landscape continues to expand, it becomes imperative to assess the quality,

impact, and contribution of open access publications within the field of IPR [16]–[18]. Research evaluating the scholarly output, citation patterns, and influence of open access journals dedicated to IPR is still relatively limited. Therefore, there is a pressing need to undertake a comprehensive bibliometric analysis to gain a deeper understanding of the role and effectiveness of open access publishing in IPR.

This research endeavors to achieve the following objectives:

1. List and organize the main ideas, subjects, and subtopics that have surfaced in intellectual property rights open access publication.
2. Examine how research patterns have changed over time, taking into account changes in focus, approaches, and multidisciplinary cooperation.
3. Examine the possible subjects for more study in this area.

The significance of this research lies in its contribution to the ongoing discourse surrounding open access publishing and its impact on the field of Intellectual Property Rights. By conducting a systematic bibliometric evaluation, this study aims to shed light on the quality and influence of open access journals within the IPR domain, providing valuable insights for researchers, policymakers, and practitioners. Furthermore, the findings from this research can inform decisions regarding funding, publishing, and access to IPR-related research, ultimately promoting transparency and accessibility in the realm of intellectual property.

2. LITERATURE REVIEW

The research on intellectual property rights (IPR) in the context open access publishing involves various aspects such as the protection of IP, regulations on inventions, and the acquisition of rights to foreground IP [19]–[21]. Universities and scientific organizations in the EU and the USA, as well as the documents of the EU Framework Programs for Research and Innovation and WIPO, play a significant role in regulating IPR

on inventions and other research-related objects [22]–[24]. The specific approaches include defining the researcher's stay in the partner institution in cooperation agreements and determining the terms of settlement of IP rights in the IP policy of the institution and the contract with the researcher [25]. It is essential to define the background IP used during research and the conditions for acquiring rights to foreground IP, including those created jointly by the parties. Additionally, in the case of individual grants and scholarships, it is important to establish agreements on the use of background IP, especially if the rights to such IP belong to the researcher's institution [26]–[28].

Furthermore, the Journal of Intellectual Property Rights (JIPR) has been a significant platform for IPR research, with numerous articles published on various themes of intellectual property rights. These themes include IP and Taxation Policy, Theoretical Underpinnings of IP Laws, Standard Essential Patents, IP Laws Declared by the Supreme Court, and JIPR in IPR Research. The journal has contributed to the discourse on IPR by publishing a substantial number of articles covering different areas of IPRs, reflecting the ongoing scholarly engagement with this field.

3. METHODS

This study adopts a bibliometric approach to evaluate the landscape of open access publishing in the field of intellectual property rights (IPR). Bibliometric analysis enables the quantitative examination of scholarly publications, citations, and trends within a specific domain. Publications included in this study are restricted to scholarly articles related to intellectual property rights. This study focuses on one open access data source, namely Semantic Scholar. Publications from 1970-2024, are included to capture recent trends and developments in open access publishing within the IPR domain. A software namely Publish or Perish is used to collect the literature related to this topic. All the literature will be analyzed using VOS Viewer

software consisting three kinds of analysis: visualization of network, visualization of overlay, and visualization of density.

4. RESULT AND DISCUSSION

4.1 Data Metrics

Tabel 1. Data Metrics

Metrics Data	Information
Publication years	1970-2024
Citation years	54
Papers	1000
Citations	9684
Cites/year	179.33
Cites/paper	9.68
Cites/author	6190.20
Papers/author	716.68
Authors/paper	1.95
h-index	45
g-index	80
hI,norm	35
hI,annual	0.65
hA, index	9

Sources: *Output Publish or Perish*, 2024

The table provides comprehensive bibliometric data spanning from 1970 to 2024, encompassing 1000 papers with a total of 9684 citations. On average,

each paper receives approximately 9.68 citations, while the average number of citations per year is 179.33. With an average of 1.95 authors per paper, each author contributes to around 6190.20 citations, indicating significant collaboration within the scholarly community. The h-index, a measure of both productivity and impact, is calculated at 45, indicating that 45 papers have received at least 45 citations each. The g-index, another metric of citation impact, stands at 80. Furthermore, the hI,norm is reported as 35, reflecting the normalized h-index, and the hI,annual is 0.65, indicating the h-index annual growth rate. Finally, the hA index is determined as 9, representing the number of papers that have received at least hA citations each. Overall, these metrics offer insights into the productivity, impact, and collaboration dynamics within the scholarly landscape of the analyzed field over the specified time period.

4.2 Network Visualization and Cluster Analysis

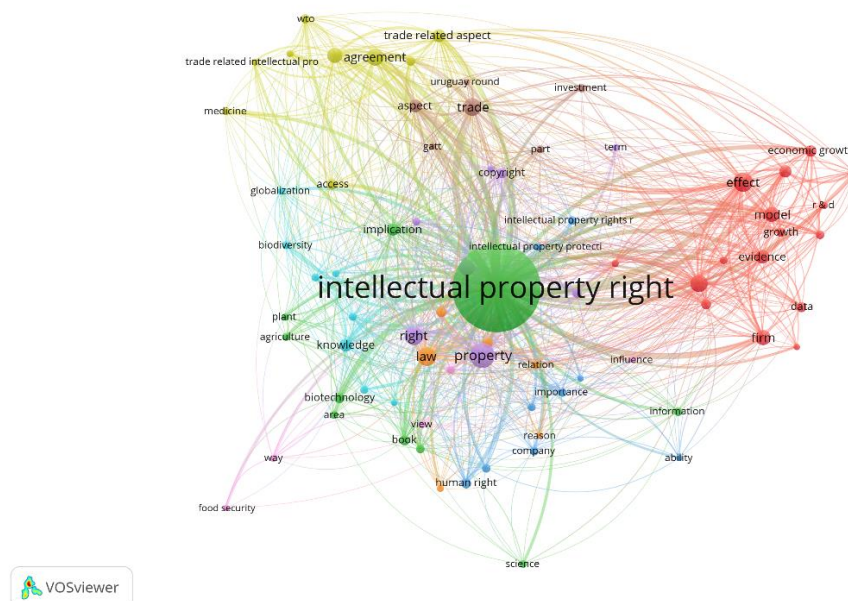


Figure 1. Network Visualization
Source: Data Analysis Result, 2024

In the image, the central focus is "intellectual property right," which is the most prominent node, suggesting that this is the core concept or the most frequently discussed topic within the dataset. The size of the nodes usually indicates the frequency of the term's occurrence in the literature, while the lines (or edges) between the nodes represent the strength or frequency of the relationship between terms.

1. Central Themes: The central themes, as indicated by the most prominent nodes, include "intellectual property right," "knowledge," "law," "property," and "rights." This suggests that the research trends are strongly focused on the legal aspects of intellectual property and its relation to ownership and knowledge.
2. Time Frame: The color gradient from blue to yellow along with

the timeline at the bottom indicates the change in focus over time from 2004 to 2010. It seems that in the earlier years, the focus might have been more on foundational aspects of intellectual property law, while in the later years, the research might have shifted towards practical implications such as "economic growth," "model," "growth," and "firm." This could suggest a trend towards analyzing the impact of intellectual property on business and economic factors.

3. Emerging and Declining Trends: By examining the color coding, we can infer which topics are gaining or losing prominence over time. For example, if the nodes related to "economic growth" and "model" are more yellow, they may represent emerging trends in the later years of the study period.

Table 2. Most Cited Documents

Citations	Author and Year	Title
351	Geoffrey G. Parker, Marshall W. Van Alstyne	Innovation, Openness, and Platform Control
351	J. Reidenberg	Lex Informatica: The Formulation of Information Policy Rules through Technology
340	C. Hess, E. Ostrom	Ideas, Artifacts, and Facilities: Information as a Common-Pool Resource
293	R. Merges	Justifying Intellectual Property
268	W. Rosenblatt, Stephen Mooney, William Trippe	Digital Rights Management: Business and Technology
217	C. Laine, S. Goodman, M. Griswold, H. Sox	Reproducible Research: Moving toward Research the Public Can Really Trust
195	Michael P. Ryan	Knowledge Diplomacy: Global Competition and the Politics of Intellectual Property
182	Sanford G. Thatcher	The Digital Dilemma: Intellectual Property in the Information Age
175	Anupam Chander, M. Sunder	The Romance of the Public Domain
157	J. Reichman, P. Uhlir	A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment

Source: *Output Publish or Perish*, 2024

4.4 Density Visualization and Potential Research Topics

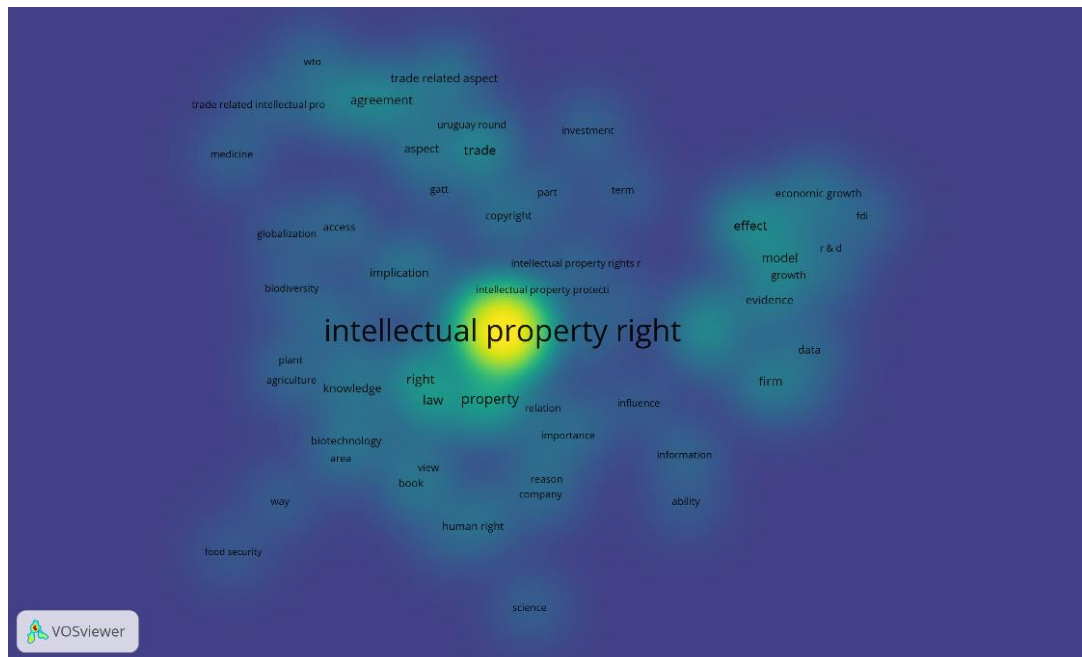


Figure 3. Density Visualization
Source: Data Analysis Result, 2024

Based on this visualization, some potential research topics can be inferred:

1. IPR and Global Trade: The connection between "intellectual property right" and terms like "wto" (World Trade Organization), "trade related aspect," "agreement," "Uruguay round," and "gatt" (General Agreement on Tariffs and Trade) suggest research opportunities on the impact of IPR on international trade laws and regulations.
2. IPR in Biotechnology and Agriculture: Keywords such as "biotechnology," "plant," and "agriculture" indicate a rich area for exploring how IPR influences innovation, seed patents, and the rights of farmers and breeders.
3. Access to Medicine: The proximity of "medicine" to "intellectual property right" suggests the significance of IPR in pharmaceuticals, which could include topics like the balance between patent protection and access to affordable medicine.
4. Economic Impact of IPR: The cluster including "economic growth," "model," "growth," "evidence," "data," and "firm" points toward the economic implications of IPR, including how it affects firms' R&D investments and the overall economic development.
5. Human Rights and IPR: The term "human right" near "intellectual property right" could signal an exploration of the intersection between IPR and human rights, such as the right to access information, cultural rights, and the impact of IPR on social and economic rights.
6. IPR and Innovation: The terms "knowledge," "law," "property," "information," and "science" reflect the fundamental relationship between IPR and innovation processes, potentially examining how legal frameworks

support or hinder scientific advancement.

7. Biodiversity and IPR: The link between "biodiversity" and IPR may indicate a research gap in how intellectual property laws affect the conservation and use of genetic resources.
8. Food Security: The appearance of "food security" suggests research potential in understanding how IPR relates to agricultural productivity and access to food.

4.5 Practical Implication

The comprehensive bibliometric analysis conducted in this study provides valuable insights with significant practical implications for various stakeholders involved in intellectual property rights (IPR) research and policy-making. By examining the productivity, impact, and collaboration dynamics within the scholarly landscape of open access publishing in the IPR domain, researchers, policymakers, and practitioners can make informed decisions regarding funding allocation, publication strategies, and access to IPR-related knowledge. The identification of central themes, emerging trends, and potential research topics, such as the economic impact of IPR, global trade implications, access to medicine, and the intersection of IPR with human rights and innovation, offers a roadmap for future research endeavors and policy interventions. Additionally, the visualization of network clusters and density patterns facilitates a nuanced understanding

of the interconnectedness of different thematic areas within IPR, thereby guiding interdisciplinary collaboration and fostering dialogue across diverse domains. These insights serve to promote transparency, accessibility, and evidence-based decision-making in the realm of intellectual property, ultimately contributing to the advancement of knowledge and innovation in the global knowledge economy.

5. CONCLUSION

In conclusion, the bibliometric evaluation of open access publishing in the field of intellectual property rights (IPR) has provided a comprehensive understanding of the landscape, trends, and potential research avenues within this domain. The analysis highlights the significant impact and collaborative nature of scholarly endeavors in IPR, as evidenced by the high citation rates and author collaborations. Through network visualization, cluster analysis, and trend examination, key themes such as the economic implications of IPR, its intersection with global trade, biotechnology, and human rights have emerged, offering valuable insights for researchers, policymakers, and practitioners. Moving forward, leveraging these findings can facilitate evidence-based decision-making, foster interdisciplinary collaboration, and promote accessibility and transparency in the dissemination of IPR-related knowledge, ultimately contributing to the advancement of innovation and intellectual property protection in the modern knowledge economy.

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