

# Decoding The Dynamic of Judicial Decision-Making Experiment: A Bibliometric Exploration

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## Abstract

This research presents a bibliometric analysis to map the development and direction of research on experiments in decision-making in courts, which focuses on publications indexed in the Scopus database from 1973 to 2024. 1973 was chosen as the start of the period because the first publication was found in that year. Bibliometric analysis methods were used, with data filtered using the Boolean search engine from the Scopus database, and analysis was carried out on June 7, 2024. Tools used for analysis included R, VosViewer, Mendeley, and Microsoft Excel. The results show fluctuations in the number of publications, with the highest peak occurring in 2022-2023 and declining in 2024. Most documents are in the field of Social Sciences, followed by Psychology, Mathematics, and Neuroscience. The United States dominates the most publications, while the main authors who contributed the most include Jones, A., along with several other authors. The University of Nebraska–Lincoln is in the top spot for a number of documents published. This research also provides an overview of research trends and collaboration in this area and can help plan future research.

Keywords: experiment, decision making, court, bibliometric analysis, Scopus, scientific publications, research trends, academic collaboration.

## Introduction

Decision-making is the study of identifying and selecting alternatives based on the values and preferences of the decision-maker (Taylor et al., 2012). Decision-making implies the existence of alternative choices that must be taken into consideration. (Hasna, 2022). In making decisions, it must begin with identifying decision-makers (Earwaker et al., 2020) and stakeholders in decision-making, thereby reducing the possibility of disputes regarding problem definitions, requirements, objectives, and criteria (Scarffe et al., 2024).

In this research, the justice system generally analyzes scientific publications, citations, and author networks related to this topic. Some of the principles that underlie the justice system include the diversity of the legal system; the justice system in various countries is very diverse because it is influenced by the history and politics of each country; other principles are multidiscipline and justice and efficiency (Supriyatni, 2017). The study of the justice system involves a variety of disciplines, including law, sociology, political science, and economics (Enggarani, 2019).

Carrying out critical analysis of existing research findings is important to pave the way for further research (M. S. Aprianoro, Faradilla, et al., 2024). Various previous studies have identified several factors that influence decision-making, for example, research by (Adebola Olaborede & Liriek Meintjes-van der Walt, 2021) on how cognitive heuristics influence judicial decision-making with seven general manifestations of heuristics, while research by (Opportunities & Challenges, 1993) examines how technology can improve the decision-making process in courts. This study aims to

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contribute to the existing literature by adopting an innovative experimental approach, as well as offering recommendations for decision-making practice in courts (Fine & Marsh, 2024).

Bibliometric indicators are one of the tools that play a role in evaluating scientific research results; they examine the interaction between science and technology, produce mapping of scientific fields, track/trace the development of new knowledge in certain fields, and are indicators for the future in making strategic plans by Belmonte et al., 2020; Boquera et al., (2021); Zheng et al., (2019).

This research aims to map the development and direction of research regarding Experiments in Decision Making in Courts in publications indexed by the Scopus database from 1973 - 2024. The development of experimental decision-making research from 1973 to 2024 has experienced significant development. 1973 was chosen as the starting year based on findings in the Scopus database, which found the first publication in that year. You can also find out which country is the most dominant in research publications on related themes. Bibliometric analysis in this research also functions to see the direction and trends of research networks and collaboration in decision-making or research carried out by researchers in the field, helping to answer circumstances and conditions related to research problems and various materials for planning future projects and research (M. S. Aprianoro et al., 2022) .

## Method

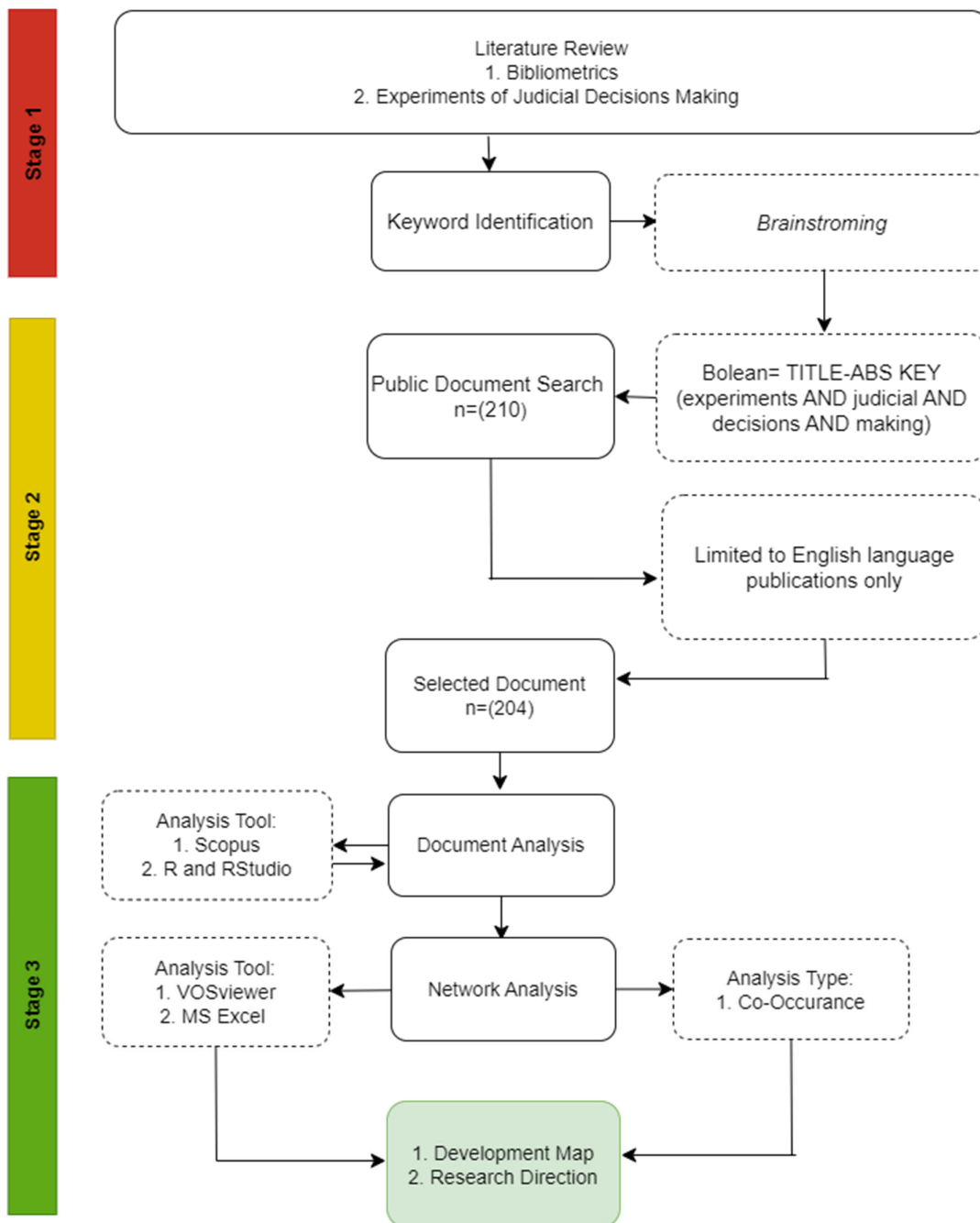
The method used in this research is a bibliometric analysis method using a Boolean search engine to filter the Scopus database from 1973 to 2004 (M. Aprianoro et al., 2023). Researchers searched for data on June 7, 2024, at around 14.30 WIB. The tools used by researchers to analyze citations, document content, and networks include R, VosViewer, Mendeley, and Microsoft Excel (Subhi Aprianoro & Herviana, 2023). In processing the data, researchers used three stages, namely:

In the first stage, the researcher first conducts a literature review regarding the theme to be researched (Alam et al., 2024). A literature review is a crucial stage in bibliometric research to ensure research is relevant, focused and has a strong theoretical basis (Fadilah et al., 2023). Apart from that, choosing the right keywords is also important to facilitate information searching and bibliometric data analysis (M. S. Aprianoro, Diniyah, et al., 2024; M. S. Aprianoro, Herviana, et al., 2023; M. S. Aprianoro, Kaloka, et al., 2023; M. S. Aprianoro, Muthoifin, et al., 2023; M. S. Aprianoro, Pradana, et al., 2023; M. S. Aprianoro & Diniyah, 2024).

Second Stage: This second stage shows a systematic and structured data search and filtration process to obtain relevant and quality bibliometric data. Researchers used the Boolean operator TITLE-ABS KEY (experiments AND judicial AND decisions AND making) to search for data on Scopus and produced 210 documents. Next, filter using the Boolean operator (LIMIT-TO ( LANGUAGE , "english" ) ) to limit only articles in English, resulting in a final document of 204 documents. The use of Boolean operators and appropriate search criteria helps narrow the scope of the research and produces data that focuses on the main topic (Yan et al., 2024).

In the third stage, at this stage the researcher carries out an analysis of the final document search using Scopus analyzer and Microsoft Excel to determine document growth per year, number of documents based on subject, title source, document type, country, author, and affiliation (Guo et al., 2024). And then carry out analysis at the document network level with visualization using VOSviewer as well as Microsoft Excel data processing (Delcea et al., 2024).

This research procedure can be seen in Figure 1 below:



**Figure 1.** Research procedure graph.

Result and Discussion

Document Analysis

Document by Year

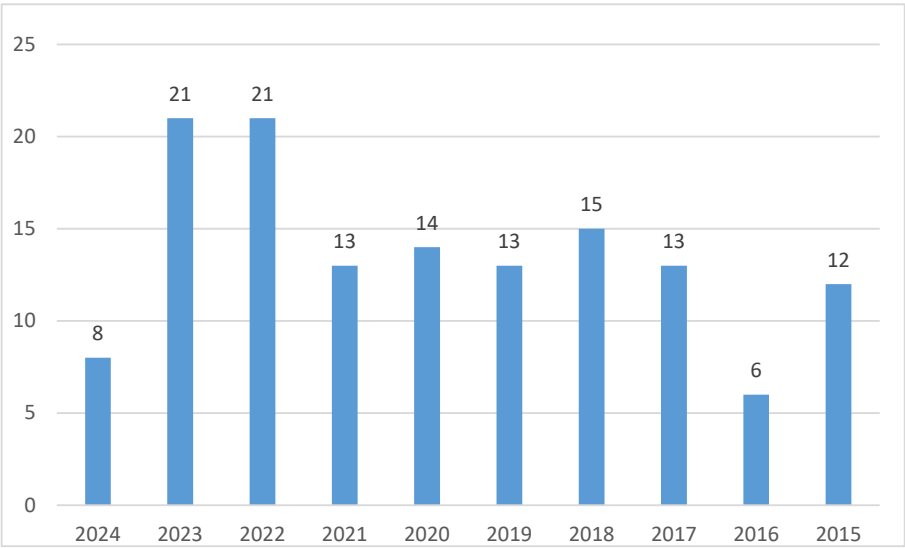


Figure 2. Publication Growth by Year.

Based on Figure 2 above, it explains the increase and decrease in publication growth seen in the last 10 years. In 2015, there were 12 documents, while in 2016, it decreased to 6 documents. Then, in 2017-2021, there was an increase and decrease with a difference of 1 to 2 documents, and the highest publication was in 2022-2023, with 21 documents. In 2024, it will decrease to only 8 documents.

Documents by Subject

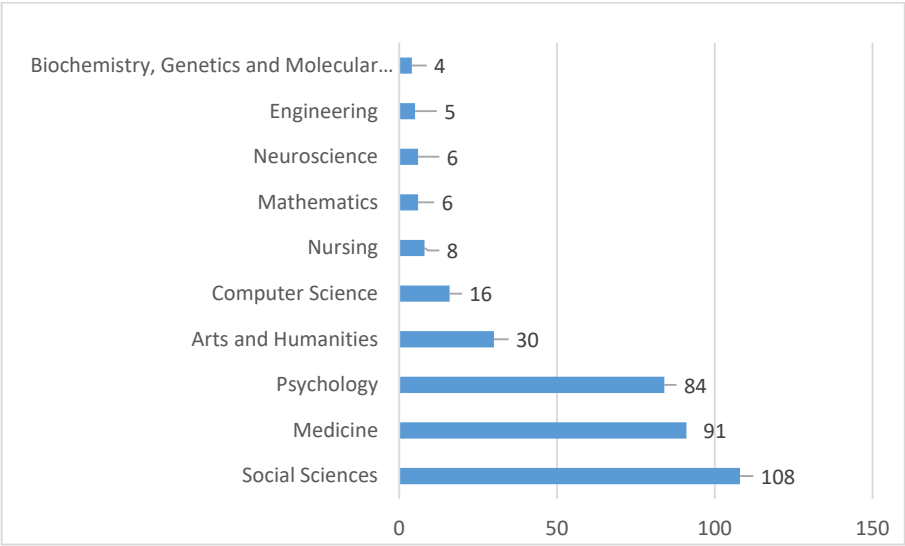
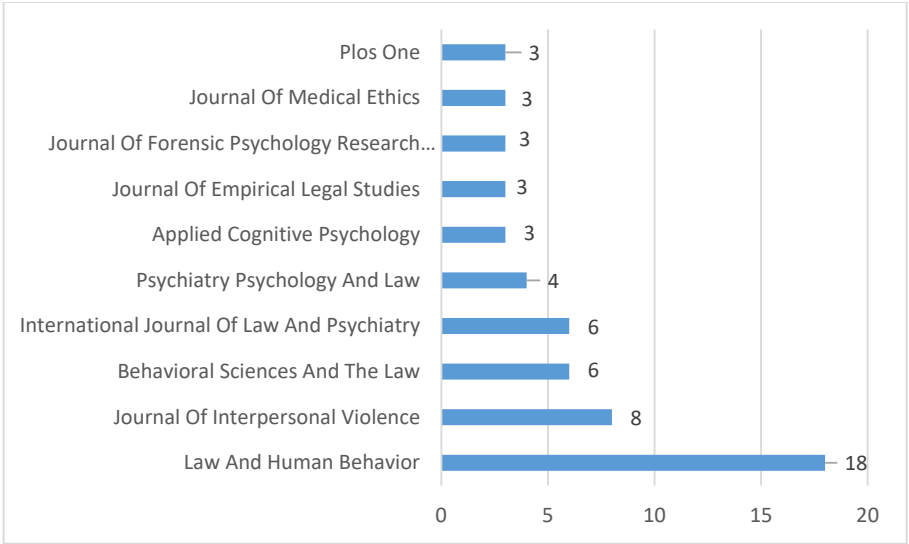


Figure 3. Number of Publications by Subject.

Figure 3 explains the classification of documents based on Scopus-indexed subjects. The most documents are in the subject of Social Sciences with 108 documents, Psychology with 84 documents, Mathematics and Neuroscience with six documents, and Engineering with only four documents, and there are other fields such as nursing, computer science, arts and humanities, and medicine.

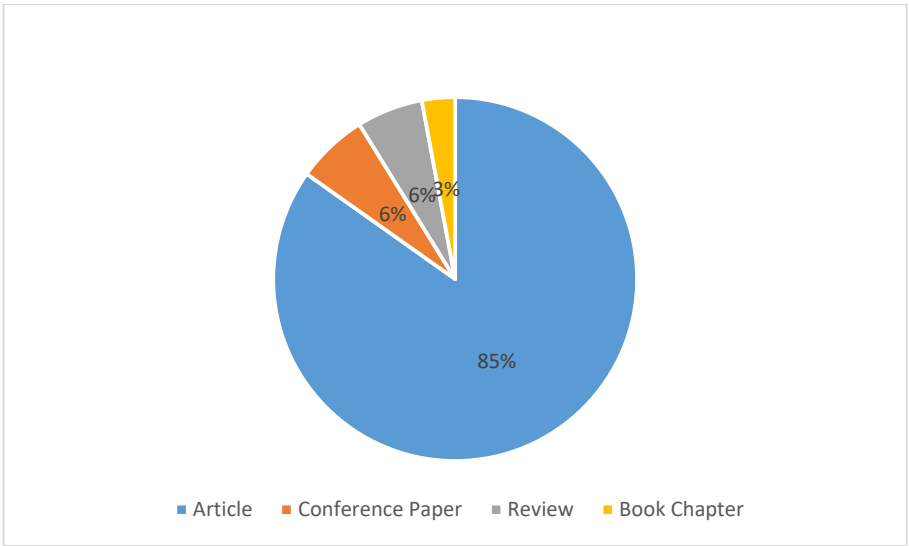
**Document Based on Title Source**



**Figure 4.** Classification of Publications Based on Title Source.

In Figure 4, the top 10 articles are explained based on the source titles indexed by Scopus, including Plos One, Journal of Medical Ethics, Journal of Forensic Psychology Research, Journal of Empirical Legal Studies, and Applied Cognitive Psychology, each containing 3 documents. It is also the most dominant law and human behavior research journal, with 18 articles related to experiments in judicial decision-making.

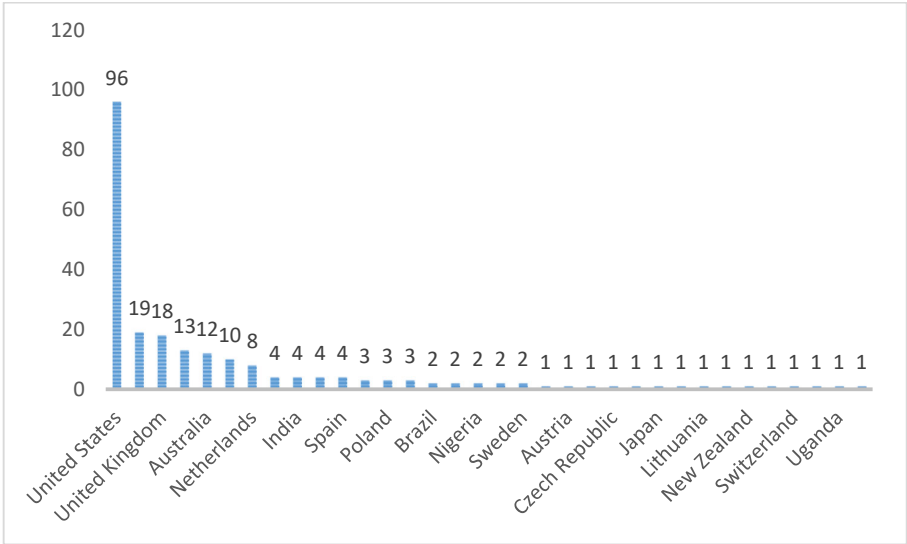
**Documents by Document Type**



**Figure 5.** Percentage of Publications Based on Document Type.

Based on Figure 5, the number of research publications based on document type explains that articles are the most widely used with 85% or 173 documents, conference papers 6% or 13 documents, then reviews with 6% or 12 documents and show the fewest are book chapters. with 3% or 6 documents.

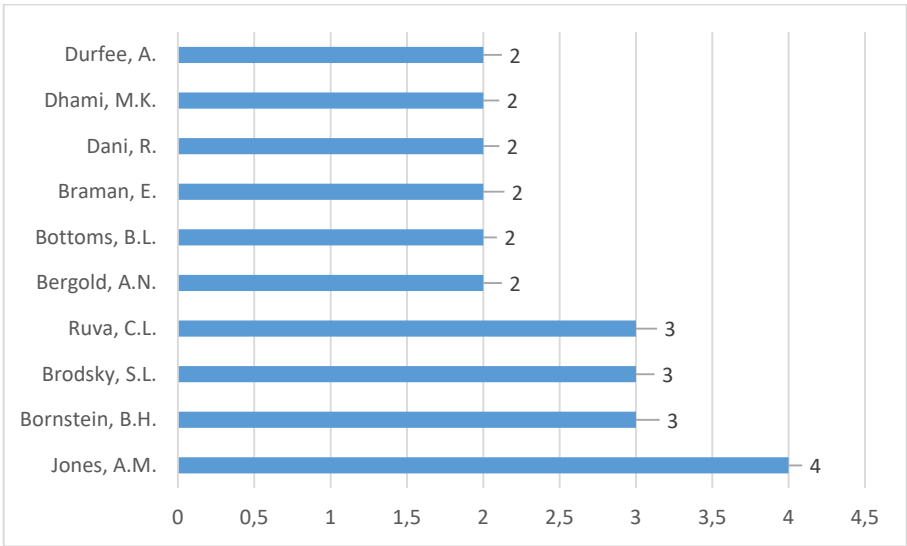
**Documents by Country**



**Figure 6.** Classification of Publications by Country.

Figure 6 above explains the comparison of documents in several countries regarding experiments in judicial decision making. The United States dominates with 96 documents. Then continued with the United Kingdom with 18 documents, and the fewest were countries such as Austria, Czech Republic, Japan, Uganda, each of which contributed only 1 document.

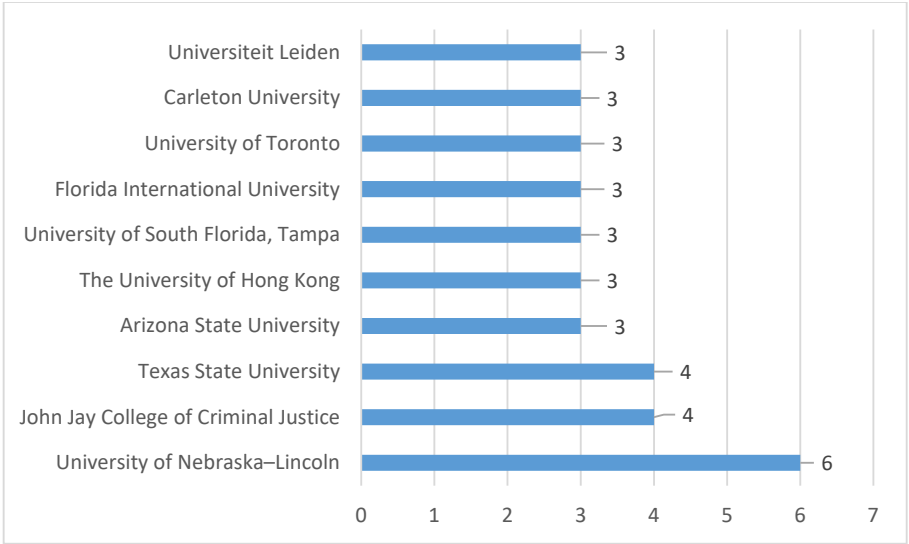
**Documents by Author**



**Figure 7.** Number of Publications by Author.

In Figure 7 you can see the authors of the top 10 publications indexed by Scopus regarding experiments in judicial decision making. The most publications on this image are Jones, A. with 4 documents, then Bomstein, B.H., Brodsky, S.L, Ruva, C.L with 3 documents each, and continued by Bergold, A.N., Bottoms, B.L., Braman, E., Dani , R., Dhami, M.K., and Durfee, A. with 2 documents.

**Documents by Affiliation**

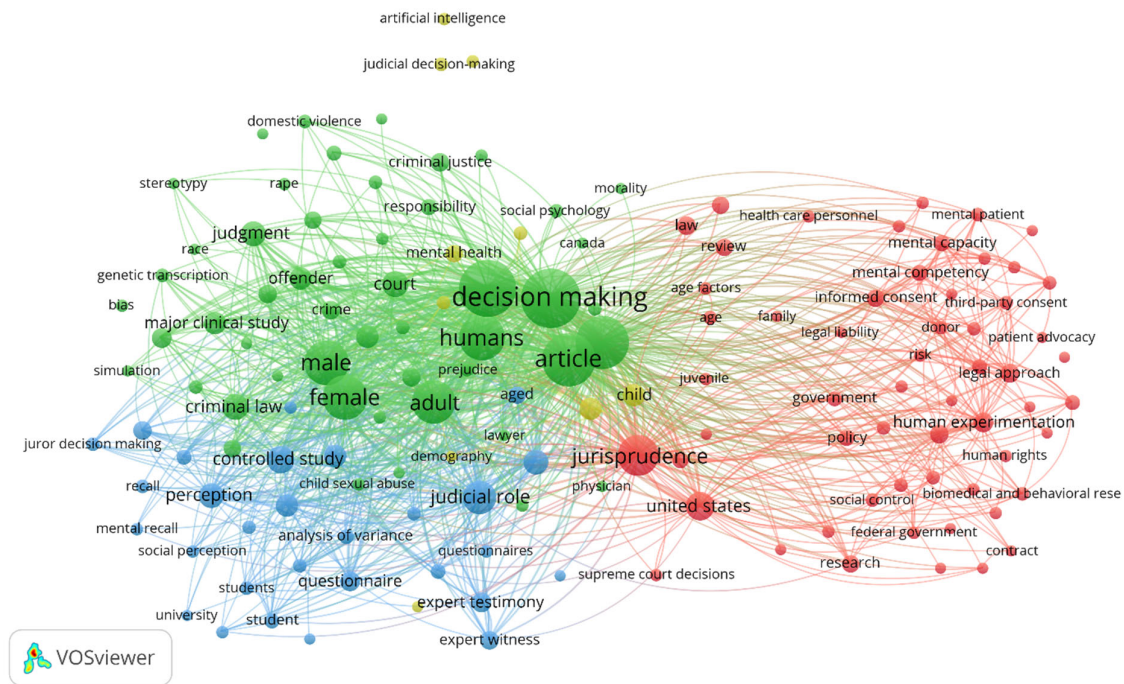


**Figure 8.** Classification of Publications Based on Affiliation.

Based on Figure 8, we can observe the top 10 affiliations regarding Experiments in judicial decision-making. The University of Nebraska – Lincoln took the top position with six documents, followed by second and third positions John Jay College of Criminal Justice and Texas State University with four documents; there are other affiliates such as Arizona State University, University of Hong Kong, University of South Florida, Tampa, University Florida International, University of Toronto, Carleton University, and Universiteit Leiden with 3 documents each.

## Network Analysis

### Occurrence (network)



**Figure 9.** Network visualization based on events.

Figure 9 shows an analysis of events from experimental research in decision making in court, with a minimum size of 5 and 4 clusters, the 4 clusters in which have several different items. For example, cluster 1 has 58 items, cluster 2 has 51 items, cluster 3 has 29 items, and cluster 4 has 10 items. In the 4 clusters there are different dominant keywords, in cluster 1 the dominant keyword is jurisprudence, in cluster 2 the dominant keyword is decision making, in cluster 3 the dominant keyword is judicial role, and the dominant keyword in cluster 4, namely the legal aspect.

The VOSviewer visualization displays a complex network of concepts. Central nodes include 'decision making', 'humans', 'article', 'adult', 'female', 'male', 'child', 'aged', 'lawyer', 'physician', 'jurisprudence', 'judicial role', 'expert testimony', 'expert witness', 'questionnaire', 'analysis of variance', 'social perception', 'recall', 'perception', 'controlled study', 'criminal law', 'simulation', 'bias', 'genetic transcription', 'offender', 'crime', 'court', 'responsibility', 'mental health', 'social psychology', 'canada', 'mortality', 'health care personnel', 'mental patient', 'mental capacity', 'informed consent', 'third-party consent', 'patient advocacy', 'legal approach', 'risk', 'donor', 'legal liability', 'family', 'age factors', 'review', 'law', 'juvenile', 'government', 'policy', 'human experimentation', 'human rights', 'biomedical and behavioral rese', 'federal government', 'research', 'contract', 'supreme court decisions', 'united states', 'physicalian', 'demography', 'child sexual abuse', 'recognition', 'major clinical study', 'rape', 'domestic violence', 'stereotype', 'race', 'judgment', 'artificial intelligence', and 'judicial decision-making'.

The bibliometric visualization of research related to decision-making, particularly in judicial contexts, provides a comprehensive overview of the key themes and trends in the field. Central topics such as "decision making," "humans," "jurisprudence," and "article" dominate the network, indicating their significance in the body of research. Additionally, terms like "judicial decision-making" and "criminal law" emerge in related clusters, linking to concepts such as "responsibility," "court," "offender," and "judgment." The color-coded clusters reveal thematic groupings: the green cluster focuses on decision-making processes involving humans, such as male, female, adult, judgment, and controlled study, while the yellow cluster highlights issues like criminal law, stereotype, and bias. The blue cluster, on the other hand, is more concerned with government policies, human experimentation, and legal liability.

Key research topics include "judgment," "bias," "offender," "mental health," and "jurisprudence," which highlight the critical areas of focus in judicial decision-making research. Emerging themes, such as "criminal justice," "domestic violence," and "responsibility," signal newer areas of study and growing interest, especially in recent years. The appearance of "artificial intelligence" as a recent theme suggests its increasing relevance in judicial processes. Additionally, the network

visualization shows interdisciplinary links between law, psychology, criminal justice, and neuroscience, reflecting the diverse nature of research in this field. This analysis offers valuable insights into the evolution of research trends, highlighting emerging topics and interdisciplinary connections that may guide future studies in judicial decision-making.

### Occurrence (density)



**Figure 11.** Density visualization.

Figure 11 shows that this area has the highest density of values, namely the keywords decision making, people and articles. These are all keywords that have been researched extensively. Meanwhile, keywords that are rarely researched and have low value density include artificial intelligence, contracts, jury decision making, and so on.

### Conclusion

The development and direction of experimental research in decision making in court using bibliometric analysis of publications indexed in the Scopus database from 1973 to 2024 shows that since 1973, research in this field has experienced significant development, with fluctuations in the number of publications from year to year . Although there is a peak in publications in 2022-2023, there will be a decrease in the number of publications in 2024.

Bibliometric analysis revealed that the most published documents focused on Social Sciences and Psychology, with the largest contribution from the United States, f ollowed by the United Kingdom. The University of Nebraska–Lincoln is the top affiliate in terms of number of publications. The most widely used document type is journal articles, while other document types such as conference papers and reviews have a smaller contribution. This research also emphasizes the importance of conducting critical analysis of existing research findings to pave the way for further research. This study recommends the use of innovative experimental approaches and technologies to improve decision-making processes in courts, as well as contributes to the existing literature by providing a mapping of trends and collaborations in this area.

Thus, this research not only enriches understanding of experiments in judicial decision making, but also provides a basis for strategic planning and future research.

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