

Bibliometric Analysis of Published Literature on Criminal Responsibility

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Abstract

Research on criminal responsibility was initiated in 1864. Since then, the phrase "criminal responsibility" has been widely employed by scholars to examine further development of criminal responsibility evaluations. The objective of this study is to examine the published scientific literature relating to the topic of "criminal responsibility". All relevant literature on criminal responsibility were gathered by using Scopus database. Several software tools were used, such as Publish or Perish to include the obtained data, VOSviewer to visualize the data, and Microsoft Excel to analyze the collected data. The growth of publications, research output, and citation analysis were comprehensively provided by applying standard bibliometric analysis. Based on the search results, a total of 695 documents were retrieved. It was ascertained that since the beginning of the 1990s, the growth rate of literature on criminal responsibility has dramatically increased on an annual basis. Most of the articles were published in journals and conferences, mainly in English, with the majority of the research on criminal responsibility being in the medical field. "Human" and "Forensic Psychiatry" were the most popular keywords, and represent the primary study areas comprised in the topic of criminal responsibility. A large number of the research related to criminal responsibility was conducted in the United States and multi-authored with a mean collaboration index of 2.61 authors per article. This study shows the development of scientific literature on criminal responsibility, the areas related to criminal responsibility in which researchers are currently interested in, as well as possible directions for future research on the subject matter.

KEYWORDS: Bibliometric analysis, Bibliometric method, Criminal Responsibility, VOSviewer, Scopus database.

Introduction

Criminal responsibility refers to an individual's capacity to comprehend his or her behavior at the time a crime is committed. This concept considers what a criminal is thinking when he commits a crime, or what is anticipated or predicted when a crime is committed (Grossi & Green, 2017). In other words, criminal responsibility relates to the issue of whether a defendant's state of mind, at the time of a crime, is sufficiently stable for them to be regarded as accountable for their actions (Weiner et al., 2018). To convict a person of a specific crime, there must be evidence that the actor possessed the appropriate mental state at the time the crime was committed. Consequently, a thorough evaluation of the actor's criminal responsibility is a crucial aspect of every criminal trial (Minkowitz, 2014).

Criminal responsibility research was launched in 1864. Since then, this concept has been used extensively by researchers to further explore the evolution of criminal liability. Therefore, this study aims to conduct a bibliometric analysis of the scientific literature published as regards the topic of criminal responsibility. Bibliometric analysis is a quantitative method used to examine the knowledge structure and development of research fields based on an analysis of related publications (Ahmi et al., 2019). While carrying out bibliometric analysis, the most frequently used indicators are authorship, publication classification, citations, impact, publication volume, and country of origin (Aidi Ahmi, 2019). According to Rehn et al., bibliometric evaluations of scientific research usually employ quantitative analyses of research publications. The vast majority of scientific observations and empirical findings are finally published in scientific journals, where they are accessible to other researchers who can read and cite them (Rehn et al., 2007; Sudarmo & Sari, 2021; Widodo & Hayu, 2021).

This current section describes the objective of performing a bibliometric analysis, while the next section outlines the methods utilized in carrying out this research. In the third section, the results of the essential bibliometric indicators are presented. The final section provides a summary of the conclusion, findings, and future research areas.

Methods

The bibliometric analysis method was employed to accomplish the objectives of this study. This method provides quantitative analysis for a literature review (Ding et al., 2001). The bibliometric analysis can be utilized to evaluate the performance and mapping of research trends in a certain study field in order to highlight the most recent advancements and the direction of future research gaps in that sector. The bibliometric analysis is beneficial to scholars since it directs them to the most significant papers in their field (Zupic & Čater, 2014). Literature selection is critical in bibliometric analysis in order to ensure the validity and consistency of the topic of the study. The technique shown in Figure 2 below was successful in achieving the objectives of this work. The researchers started by determining the breadth of the study and further provided the database, as well as the subject matter and the time span. After determining the progress of the study, the researchers then extracted bibliometric data in preparation for data screening. The next part of this research gives a more in-depth description of the procedures and tools that were utilized in order to collect data for this study.

Being a bibliometric study, this research significantly deals with a computer-assisted review method for finding core research or authors and their connections by looking at all publications related to a certain topic or field (De Bellis, 2009; Yang & Alves, 2021). The data for this study were taken from the Scopus database and saved on April 15, 2022. It was found that the phrase "criminal responsibility" was used as a search term in document titles from 1864 to 2022. The Scopus database was selected to perform an exhaustive search due to its extensive recognition among researchers and its high level of credibility (Sharma, 2021). Accordingly, the researchers in this study had included all the 695 documents that were identified and downloaded from the said period for further analysis, as shown in Figure 1

As a result of the exponential growth in the number of materials, studying a particular subject or area of research has become a challenging endeavor. Consequently, the bibliometric analysis stage of the preparation of a Systematic Literature Review (SLR) has developed into an essential component (Denney & Tewksbury, 2013). The Biblioshiny function found inside the R platform was utilized in order to carry out the bibliometric analysis of the compiled contributions. Firstly, a general performance study of the literature was generated using the

Biblioshiny software program. The most significant authors, citation structure, topic progression pattern, and analysis of topic trends were discovered during this study. Then, descriptive and network analyses were applied to the data.

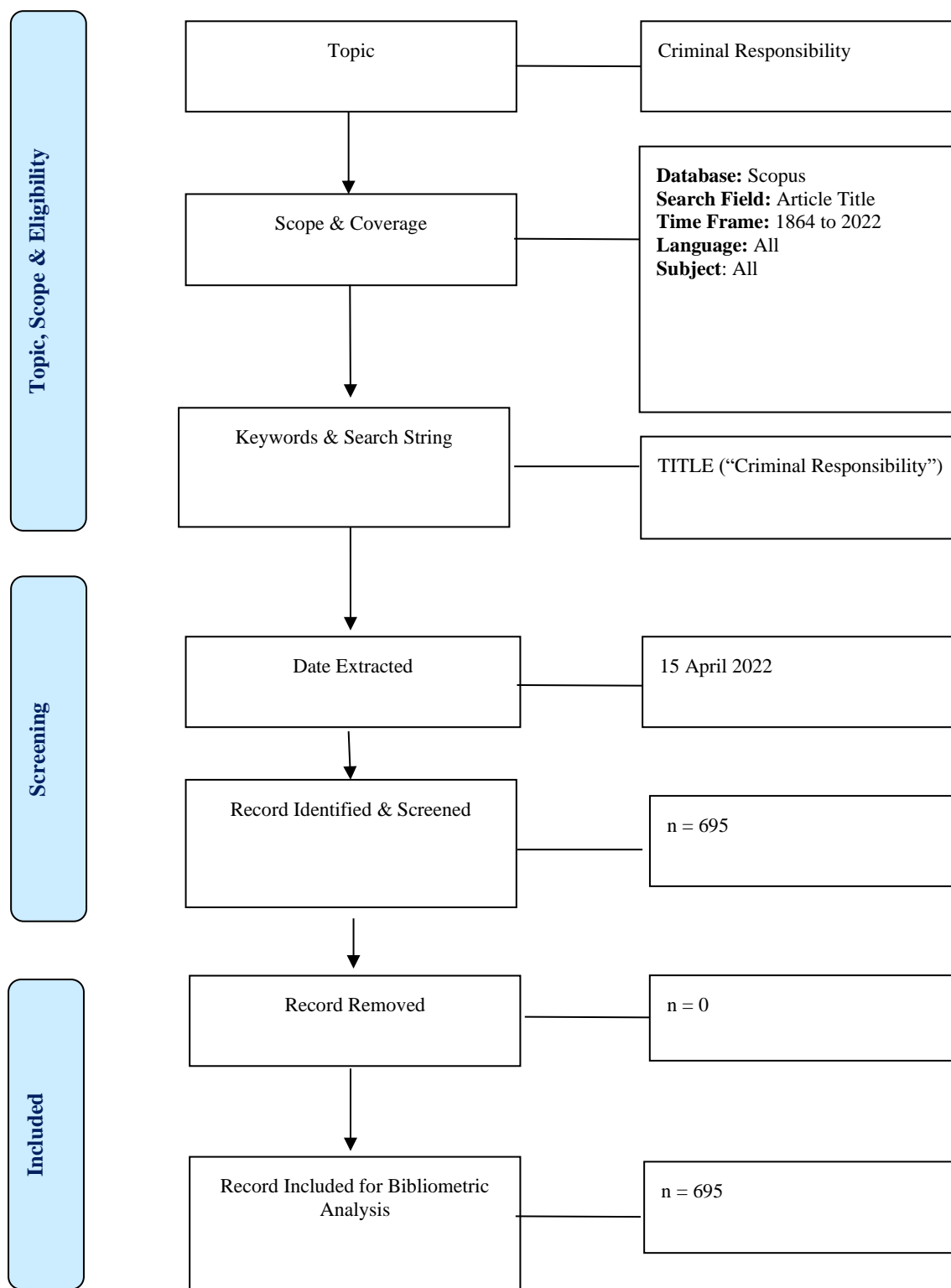


Figure 1: Research Protocol

Results

1.1. General Information

Table 1 shows certain information that was collected with Biblioshiny, being the bibliometrics analysis tool. There are a total of 695 contributions, which came from 396 unique sources. This demonstrates that publications on “criminal responsibility” are dispersed across a large number of sources, and there is no centralized location in which the works can be stored. In addition, 1023 authors contributed to these works, but only 365 were written by a single author. By virtue of the breadth and interdisciplinarity of this study area, the collaboration index is 2.61, which is regarded to be a relatively high rate. This is due to the fact that it is onerous for a single author to fully comprehend the concept of criminal responsibility in numerous regulatory settings all around the world. The collaboration of numerous authors in the preparation of a single study on the topic of criminal responsibility is therefore justified.

Table 1: General Information

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1864:2022
Sources (Journals, Books, etc.)	396
Documents	695
Average years from publication	22.1
Average citations per document	5.537
Average citations per year per doc	0.4252
References	25805
DOCUMENT CONTENTS	
Keywords Plus (ID)	1180
Author's Keywords (DE)	933
AUTHORS	
Authors	1023
Author Appearances	1225
Authors of single-authored documents	365
Authors of multi-authored documents	658
AUTHORS COLLABORATION	
Single-authored documents	443
Documents per Author	0.679
Authors per Document	1.47
Co-Authors per Document	1.76
Collaboration Index	2.61

1.2. Document and Source Type

The researchers in this study have analyzed the documents retrieved from the Scopus database by classifying the documents based on the document type, source type, and source title. Journal articles, book chapters, reviews, books, editorials, notes, conference papers, letters, or erratum are among the types of documents that are used for criminal responsibility publications. The document type analyses of this study are presented in Table 2. More than half (477, 68.6%) of the contributions relating to criminal responsibility are published in journal articles, followed by reviews (72, 10.4 percent). The short survey accounts for four of the total publications, while erratum has the fewest with only two publications.

Table 2. Document Type

Document type	Total Publications (TP)	Percentage %
Article	477	68.6%

Book	14	2.0%
Book chapter	64	9.2%
Conference paper	22	3.2%
Editorial	7	1.0%
Erratum	2	0.3%
Letter	13	1.9%
Note	20	2.9%
Review	72	10.4%
Short survey	4	0.6%
Total	695	100.0%

1.3. Languages of Documents

It is evident from Table 3 that English is widely utilized in the works in this area (559; 79.07 percent). Other commonly written languages for this subject matter include German, French, Spanish, Chinese, Japanese, Italian, Portuguese, Russian, Turkish, Polish, and Hungarian. However, only one work on criminal responsibility was published in Arabic, Bulgarian, and Serbian languages respectively.

Table 3. Languages

Language	Total Publications (TP)	(%)
English	559	79.07%
German	37	5.23%
French	27	3.82%
Spanish	16	2.26%
Chinese	15	2.12%
Japanese	12	1.70%
Italian	11	1.56%
Portuguese	8	1.13%
Russian	6	0.85%
Turkish	5	0.71%
Polish	3	0.42%
Hungarian	2	0.28%
Arabic	1	0.14%
Bulgarian	1	0.14%
Serbian	1	0.14%
Undefined	3	0.42%

1.4. Subject area

This study also included a listing of the published documents that correspond to its subject areas. Medicine accounted for 36.9 percent of the total documents on criminal responsibility, followed by Social Sciences (34.34%), Psychology, Arts and Humanities, as well as Nursing, which accounted for practically the total of the remaining research (19.8%). The other subject areas which covered criminal responsibility research are tabulated in Table 4.

Table 4. Subject area

Subject Area	Frequency	%
Agricultural and Biological Sciences	1	0.095%
Arts and Humanities	72	6.831%

Biochemistry, Genetics and Molecular Biology	17	1.613%
Business, Management and Accounting	6	0.569%
Computer Science	8	0.759%
Decision Sciences	2	0.190%
Dentistry	1	0.095%
Earth and Planetary Sciences	1	0.095%
Economics, Econometrics and Finance	8	0.759%
Energy	1	0.095%
Engineering	10	0.949%
Environmental Science	3	0.285%
Health Professions	2	0.190%
Materials Science	1	0.095%
Mathematics	2	0.190%
Medicine	389	36.907%
Multidisciplinary	3	0.285%
Neuroscience	19	1.803%
Nursing	25	2.372%
Pharmacology, Toxicology and Pharmaceutics	6	0.569%
Physics and Astronomy	2	0.190%
Psychology	113	10.721%
Social Sciences	362	34.345%

1.5. Descriptive Bibliometric Analysis

There are seven areas of the descriptive bibliometric study, comprising of annual publication trends, most prolific authors, most cited papers, publishing activity by nation, publishing activity by affiliations, journal publishing activity, and most often used keywords.

1.5.1. Number of Annual Publications

The annual publication patterns from 1864 to 2022 are depicted in Figure 2. As indicated by the trendline, the dispersion has substantially expanded over the past several years. Over the previous four decades, a rapid increase in publications has been reported (1981-1990: 40 or 5.75 percent; 1991-2000: 65 or 9.35 percent; 2001-2010: 136 or 19.56 percent; 2011-2020: 290 or 41.72 percent). In 2019, the total number of publications relating to criminal responsibility was more than 37 works for the first time in history. Overall, the number of publications published each year is increasing. This growing trend shows that researchers, practitioners, and regulators are being more attentive to the topic of criminal responsibility

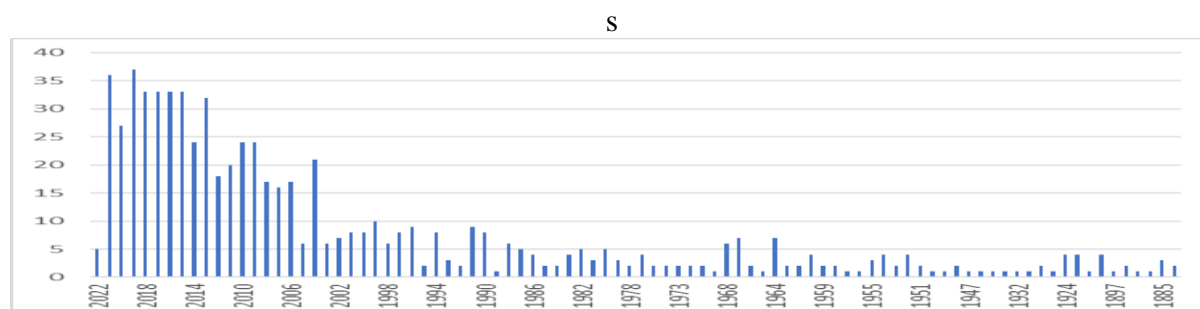


Figure 2: Number of Publications Per Year

3.5.2 Authorship Analysis

This research also identifies the most prolific authors who contributed to the publication of criminal responsibility-related studies. A total of 1023 different authors contributed to an overall of 695 contributions. Table 5 below contains a list of the 15 most productive authors on the topic of criminal responsibility. With eight publications, Meynen, G. is the most prolific author. Despite being the second most prolific author with seven contributions, Morse, S.J. has garnered the most citations (169). Ambos, K., and Briken, P., with six publications each, are the next two most productive contributors.

Table 5: Details of 15 Most Productive Authors

Author's Name	Affiliation	Country	TP	TC	h	g
Meynen, G.	Netherlands Vrije Universiteit Amsterdam	Netherlands	8	73	5	8
Morse, S.J.	University of Pennsylvania	United States	7	169	6	7
Ambos, K.	Georg-August-Universität Göttingen	Colombia	6	11	2	3
Briken, P.	Universitätsklinikum Hamburg-Eppendorf	Germany	6	42	4	6
Cai, W.X.	Shanghai Key Laboratory of Forensic Medicine	China	5	6	2	2
Guan, W.	Institute of Forensic Science	China	5	11	2	3
McSherry, B.	Melbourne Law School	Australia	5	68	4	5
Roesch, R.	Simon Fraser University	Canada	5	52	3	5
Tang, T.	Shanghai Forensic Service Platform	China	5	10	2	3
Duff, R.A.	University of Stirling	United Kingdom	4	7	2	2
Loughnan, A.	The University of Sydney	Australia	4	15	3	3
Müller, J.L.	Georg-August-Universität Göttingen	Germany	4	32	3	4
Niveau, G.	Universitaires de Médecine Légale	Switzerland	4	14	3	3
Pillay, A.L.	University of KwaZulu-Natal	South Africa	4	20	2	4
Rogers, R.	University of North Texas	United States	4	28	3	4

Notes: TP=total number of publications; TC=total citations; h=h-index; and g=g-index

3.5.3 Most Cited Papers

Table 6 shows the top 15 most cited papers from the Scopus database based on the number of citations. Using global citations makes it easier to keep track of the annual citation frequency. The most cited document is a publication written by Victor Trados in 2007 entitled "Criminal Responsibility" with 148 citations or an average of 11.384 citations per year. This is followed by "Abolish the Juvenile Court: Youthfulness, Criminal Responsibility, and Sentencing Policy" (Feld, 1997) with 101 total citations or an average of 3.884 citations annually. Subsequently, "Individual Criminal Responsibility in International Law" authored by Van Sliedregt in 2012 is the third most cited with 91 citations or an average of 8.272 citations per year.

Table 6: 15 Most Cited Documents

Document	Title	DOI	TC	TC per Year
(Victor Trados, 2007)	Criminal Responsibility	10.1093/acprof:oso/9780199225828.001.001	148	11.384
(Feld, 1997)	Abolish the Juvenile Court: Youthfulness, Criminal Responsibility, and Sentencing Policy	10.2307/1144075	101	3.884
(Van Sliedregt, 2012)	Individual Criminal Responsibility in International Law	10.1093/acprof:oso/9780199560363.001.001	91	8.272
(Fine & Kennett, 2004)	Mental Impairment, Moral Understanding, and Criminal Responsibility: Psychopathy and the Purposes of Punishment	10.1016/j.ijlp.2004.06.005	79	4.157
(Morgan, 2010)	Children's Rights and the Minimum Age of Criminal Responsibility: A Global Perspective	10.1093/bjc/azq044	73	5.214
(Aharoni et al., 2008)	Can Neurological Evidence Help Courts Assess Criminal Responsibility? Lessons from Law and Neuroscience	10.1196/annals.1440.007	73	4.866
(Eastman & Campbell, 2006)	Neuroscience and Legal Determination of Criminal Responsibility	10.1038/nrn1887	68	4
(Fried & Reppucci, 2001)	Criminal Decision Making: The Development of Adolescent Judgment, Criminal Responsibility, and Culpability	10.1023/A:1005639909226	66	3
(Bayles, 1982)	Character, Purpose, and Criminal Responsibility	10.1007/BF00143144	66	1.609
(Werle, 2007)	Individual Criminal Responsibility in Article 25 ICC Statute	10.1093/jicj/mqm059	58	3.625
(Eigen, 2004)	Unconscious Crime: Mental Absence and Criminal Responsibility in Victorian London	NA	52	2.6
(Wiener, 1999)	Judges v. Jurors: Courtroom Tensions in Murder Trials and the Law of Criminal Responsibility in Nineteenth-Century England	10.2307/744379	52	2.166
(C F Roberts & Golding, 1991)	The Social Construction of Criminal Responsibility and Insanity	10.1007/BF02074076	52	1.625
(Caton F Roberts et al., 1987)	Implicit Theories of Criminal Responsibility	10.1007/BF01044643	52	1.444
(V Trados, 2009)	Poverty and Criminal Responsibility	10.1007/s10790-009-9180-x	51	3.642

3.5.4 Most Cited Countries

Table 7 shows the countries that have contributed the most to criminal responsibility research. There are 1118 total citations in this domain from the United States, which may indicate that criminal responsibility studies in the United States are among the most prominent in the world. The United Kingdom comes in second with 427 citations. Criminal responsibility research is vital in the United States and Europe, since seven of the top 15 most productive nations are from the Western world, contributing to more than 54.96 documents.

Table 7: 15 Most Cited Countries

Country	No. of document	Total Citations
United States	142	1118
United Kingdom	78	427
Germany	48	129
Australia	32	156
France	29	34
Netherlands	27	191
Canada	26	198
China	21	13
Italy	15	30
South Africa	15	31
Japan	13	14
Spain	13	22
Brazil	10	13
Switzerland	10	31
Poland	9	2

3.5.5 Most Productive Affiliations

Table 8 indicates the fifteen most productive affiliations in the field of criminal responsibility, as well as the number of publications associated with each of the organizations. Among the prominent universities that have produced articles on criminal responsibility are Monash University, Georg-August-Universität Göttingen, University of Pennsylvania, Vrije Universiteit Amsterdam, and Shanghai Key Laboratory of Forensic Medicine. With six papers, Universitätsklinikum Hamburg-Eppendorf and Tilburg University are both in fourth place. The Universiteit Utrecht, the University of KwaZulu-Natal, the University of Toronto, Simon Fraser University, and The University of Sydney are ranked fifth place with five papers each.

Table 8: The 15 Most Productive Affiliations

Affiliations	No. of articles	Country	Percentage of articles
Monash University	13	Australia	1.87%
Georg-August-Universität Göttingen	13	Germany	1.87%
University of Pennsylvania	8	United States	1.15%
Vrije Universiteit Amsterdam	7	Netherlands	1.01%
Shanghai Key Laboratory of Forensic Medicine	7	China	1.01%
Universitätsklinikum Hamburg-Eppendorf	6	Germany	0.86%
Tilburg University	6	Netherlands	0.86%
Universiteit Utrecht	5	Netherlands	0.72%
University of KwaZulu-Natal	5	South Africa	0.72%
University of Toronto	5	Canada	0.72%
Simon Fraser University	5	Canada	0.72%
The University of Sydney	5	Australia	0.72%
Humboldt-Universität zu Berlin	4	Germany	0.58%
Universiteit van Amsterdam	4	Netherlands	0.58%
University of Michigan, Ann Arbor	4	United States	0.58%

3.5.6 Most Productive Journals

Notably, the 695 publications retrieved for this research were found in 396 distinct sources. The fifteen most active journals for publications on criminal responsibility are listed in Table 9. International Journal of Law and Psychiatry appears to be the journal that emphasizes most on the topic of criminal responsibility, with 26 contributions accounting for 3.74 percent of the total contributions. Following that, there are 14 publications devoted to British Medical Journal. With 12 contributions respectively, the Journal of Behavioral Sciences

and the Law, Journal of Psychiatry, Psychology, and Law, as well as Journal of Revue Internationale De Droit Penal come in as the third most productive journals.

Table 9: 15 Most Productive Journals

Source	No of Publications	H_index	G_index	M_index	T_C	PY start
International Journal of Law and Psychiatry	26	10	18	0.2702702357	5	1986
British Medical Journal	14	1	1	0.006289308	4	1864
Behavioral Sciences and the Law	12	8	12	0.32	213	1998
Psychiatry, Psychology and Law	12	5	8	0.172413793	76	1994
Revue Internationale De Droit Penal	12	2	2	0.090909091	12	2001
International Criminal Law Review	11	4	7	0.19047619	63	2002
Journal of the American Academy of Psychiatry and the Law	10	6	8	0.230769231	72	1997
Criminal Law and Philosophy	9	3	8	0.1875	67	2007
Forensische Psychiatrie, Psychologie, Kriminologie	9	3	4	0.1875	20	2007
Journal of International Criminal Justice	9	6	9	0.375	151	2007
The Lancet	9	0	0	0	0	1885
Journal of Psychiatry and Law	8	3	3	0.083333333	19	1987
Seishin Shinkeigaku Zasshi	8	2	2	0.0625	7	1991
Journal De Medecine Legale Droit Medical	7	1	1	0.03125	3	1991
Journal of Forensic Sciences	7	3	5	0.063829787	30	1976

3.5.7 Most Frequent Keywords

Table 10 displays the top fifteen author keywords. The most often used keyword by authors is "Human," which appears 273 times. "Article" comes in second with 191 occurrences. As demonstrated in Table 10, the constantly used keywords in criminal responsibility research with more than 90 occurrences include "Forensic Psychiatry", "Criminal Responsibility", "Humans", "Crime", "Responsibility", "Mental Disease", and "Criminal Law".

Table 10: 15 Top Keywords

0	Occurrences
Human	237
Article	191
Forensic Psychiatry	139
Criminal Responsibility	137
Humans	122
Crime	104
Responsibility	98
Mental Disease	95
Criminal Law	91
Criminal Behavior	85
Offender	79
Male	71
Insanity Defense	66
Legal Aspect	62
Adult	61

Next, the researchers examined author keywords using VOS viewer, a software tool used for constructing and visualizing bibliometric networks. (van Eck & Waltman, 2017).

Related keywords, as indicated by the same color in Figure 3, are commonly listed together. For example, criminal responsibility, assessment, accountability, schizophrenia, and violence are closely related and usually co-occur together in published works.

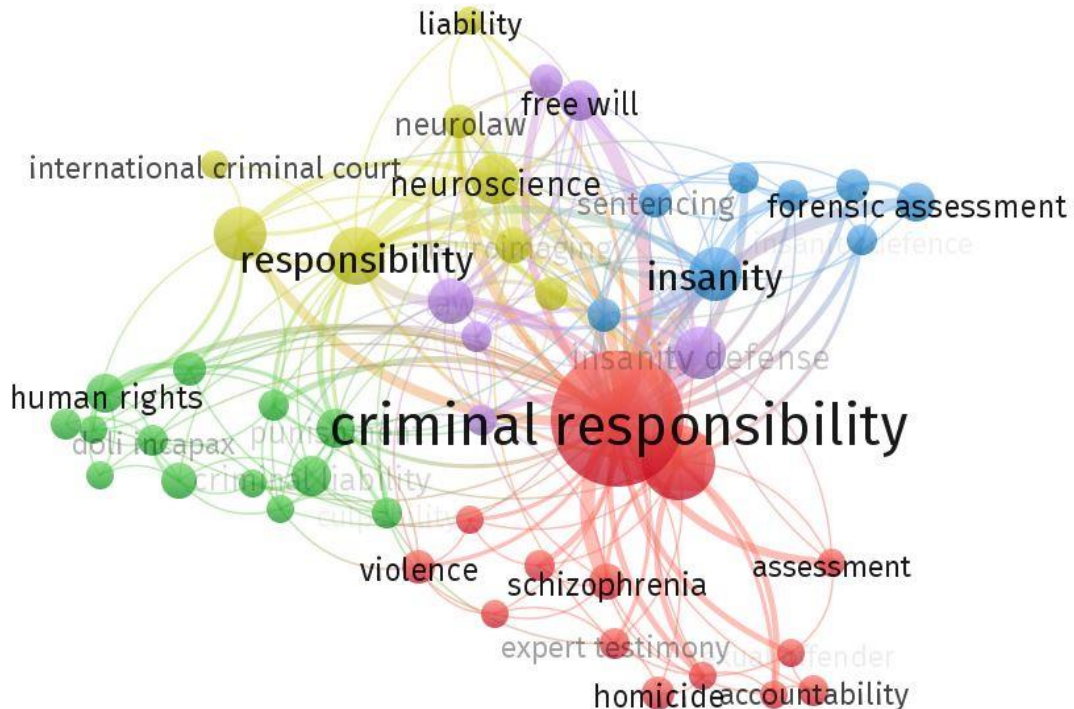


Figure 3. Word cloud of the author keywords.

Discussion

By utilizing bibliometric analysis, the primary objective of this research is to investigate the current state of research on criminal responsibility. This bibliometric analysis is able to evaluate the standard of the research and publications pertaining to a particular subject (Van Leeuwen, 2006). Bibliometric data can be utilized to assess the efficacy of a specific research field, hence supporting research-related organizations in the process of formulating scientific input and output strategies. In addition, bibliometric analysis can be used to validate a study's contribution to a scientific field and help researchers generate work that is relevant to the field (Diem & Wolter, 2013).

This study has initiated a review of various kinds of scholarly works published from the year 1864 to 2022 on the topic of criminal responsibility. In total, the bibliometric information associated with 695 different documents were retrieved from the Scopus database. According to the findings, the subject of “criminal responsibility” has been developing into a new topic since the beginning of the nineties and has experienced a significant surge in popularity in 2019. English emerges as the primary language in the published works relating to the topic. The data also demonstrates an upward trend in the number of authorships associated with each text over the course of time.

As shown in Table 4, issues regarding criminal responsibility are mainly discussed in subjects of Medicine, Social Sciences, Psychology, Arts and Humanities, Nursing, Biochemistry, Computer Science, Engineering, Business, Management, and Accounting.

However, the topic was also observed in other subject areas such as Environmental Science, Decision Sciences, Mathematics, as well as Earth and Planetary Sciences.

Table 5 lists the fifteen most productive contributors regarding the number of papers published. “Meynen, G.” is the most prolific author, with eight publications. Between 2009 and 2020, “Meynen, G.” contributed publications on Neuroscience-based Psychiatric Assessments of Criminal Responsibility, Neuroethics of Criminal Responsibility, A Neurolaw Perspective on Psychiatric Assessments of Criminal Responsibility, Decision-making, Mental Disorder, and Assessments of Criminal Responsibility. (Meynen, 2009), (Meynen, 2010), (Meynen & Oei, 2011), (Meynen, 2011), (Meynen, 2012), (Meynen, 2013), (Meynen, 2014), (Meynen, 2020). “Morse, S.J.”, comes second with seven publications. “Morse, S.J.” contributions concentrated on Neuroscience, Free Will Neuroscientific, Philosophical and Legal Perspectives, Addiction, Agency and Criminal Responsibility, Genetics and criminal responsibility, Cognitive Sciences, and the Impact of Behavioural Sciences on Criminal Responsibility. (Morse, 1999), (Morse, 2004), (Morse, 2006), (Morse, 2009), (Morse, 2011), (Morse, 2013), (Morse, 2015). Morse, S.J." has the most citations with 169.

“Ambos, K.”, and “Briken, P.” both are the third most productive with six publications each. Ambos, K. concentrated on criminal responsibility in cyberspace, criminal responsibility for cyber aggression, individual criminal responsibility in international criminal law, International Penal System. (K Ambos & Njikam, 2013), (K Ambos, 2015), (K Ambos, 2016b), (K Ambos, 2016a), (Kai Ambos, 2016), (Kai Ambos, 2021). Whereas Briken, P. focused on Predictive Validity of Operationalized Criteria for the Assessment of Criminal Responsibility, Frontiers in Psychology Criminal responsibility, Psychologie, and assessment of criminal responsibility in paraphilic disorders. (Hill et al., 2008), (Briken & Müller, 2014), (Brunner et al., 2016), (Dobbrunz et al., 2020), (Fuß et al., 2020), (Dobbrunz et al., 2021). Additionally, five authors are in the fourth place, namely "Cai, W.X.", "Guan, W.", "McSherry, B.", “Roesch, R.”, and “Tang, T.” contributed five publications each, at the next level.

Additionally, the piece of writing entitled "Criminal Responsibility" by (Victor Tadros, 2007) obtained the maximum number of citations up to this point. It is the most widely cited work, with 148 citations. This was followed by “Abolish the Juvenile Court: Youthfulness, Criminal Responsibility, and Sentencing Policy (Feld, 1997) with 101 citations, and “Individual Criminal Responsibility in International Law” (Van Sliedregt, 2012) with 91 citations.

In furtherance, the most productive authors came from the United States, followed by the United Kingdom, Germany, Australia, France, the Netherlands, and Canada. Scientific research in many different countries have definitely made important contributions to the study of criminal responsibility. These results are not surprising, since the countries involved are among the most powerful nations from a legal standpoint. These countries invest time and energy examining and scrutinizing legal issues, as well as making rules and policies, all of which are duly followed by the rest of the world.

Table 8 illustrates that Monash University in Australia and Georg-August-Universität Göttingen in Germany have the most productive affiliations, with 13 contributions each. With 8 articles, the University of Pennsylvania comes in second place. Vrije Universiteit Amsterdam and Shanghai Key Laboratory of Forensic Medicine placed third, with seven papers. Universitätsklinikum Hamburg-Eppendorf, and Tilburg University for fourth place with six articles each.

International Journal of Law and Psychiatry, which has published 26 articles and received 355 citations, has the most research publications on criminal responsibility. This was followed by British Medical Journal which had a total of 14 published articles, with four citations. In the third place, there were 12 submissions to each journal of Behavioral Sciences and the Law, as well as Psychiatry, Psychology, and Law, and to the journal entitled *Revue Internationale De Droit Penal*.

Human, Forensic Psychiatry, Criminal Responsibility, Mental Disease, Criminal Law, and Criminal Behavior are among the top fifteen keywords that have been used in relation to criminal responsibility publications.

Conclusion

In this work, the researchers assess the relevant research literature and undertake a review of the previous work that have been published on the topic of Criminal Responsibility. For the purpose of achieving this goal, a bibliometric approach or study was applied. In this particular instance, a total of 695 publications were either gathered together or found during the course of two distinct stages. Firstly, a descriptive bibliometric analysis was carried out, and secondly, a co-word analysis was conducted to identify the most important subjects in this current research data set. According to the results of the descriptive study, this research area has shown an increase in academic interest from the beginning of the nineties. This progression is confirmed by the gradual growth in publications throughout time.

Noticeably, published works that discuss criminal responsibility from varying contexts also appeared during the review of the most frequently cited papers in the current research database. For example, some researchers explored topics such as Neuroscience-based Psychiatric, Neuroethics of Criminal Responsibility, Mental Disorder, Assessments of Criminal Responsibility, Neuroscience, Free Will Neuroscientific, Philosophical and Legal Perspectives, and Genetics and Criminal Responsibility, Cognitive Sciences, Criminal Responsibility in Cyberspace, and Psychology. It is important to highlight the fact that the vast majority of these works are based on empirical research. In this current study, by using factorial maps of the text that contain the most significant contributions, the researchers examined the phrases that were used most frequently by the writers in order to have a better understanding of both the substance and the main issues involved in dealing with the concept of criminal responsibility.

Numerous investigations have been carried out in assessments of Criminal Responsibility, such as neuroethics of criminal responsibility in situations involving criminal behavior. On the other hand, there were only a limited amount of research done on attributing individual criminal responsibility to collective crimes. Future research should take into account this gap in the literature to better understand the procedures of prosecuting criminals. By presenting important theoretical insights into criminal responsibility, substantially contributes to the current body of knowledge. In particular, the results of this study should serve as a stepping stone for authors who are interested in exploring further the topic that this research investigates. Accordingly, this research provides a list of works that have been cited the most frequently, which highlights the fundamental articles that may be utilized to further explore the issue. Using a cluster analysis tool, it is clear what problems have been established, how they have been evaluated, and as a result, what areas of research still need to be examined. Additionally, by analyzing the correlations between keywords, journals, and cited journals, the determination of which journals should be considered for publication as well as which

approaches were applied to the research topic and the different points of view adopted, can be accomplished.

It is crucial to emphasize that the database employed in this investigation has a few restrictions. Most importantly, this research is limited to materials only with an obvious title mentioning the term “criminal responsibility”. Thus, other works on the concept of criminal responsibility which has no apparent or exact use of the said term in their title were ruled out. It is also significant to note that there is no single search query that can be completely relied on to provide 100 percent results accuracy. Despite these drawbacks, this study is one of the first to extensively examine the published literature's bibliometric indicators as regards the topic of criminal responsibility.

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