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BIBLIOMETRIC ANALYSIS OF JOURNAL OF CHEMINFORMATICS (2012-2021)

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ABSTRACT

This paper presents a bibliometric analysis of the Journal of Cheminformatics (JOC) for the period of 10 years (2012-2021). To complete the study total no. of 348 research articles have been taken up for data analysis. The aim of this paper is to analyze the forms of articles, distribution of the articles, authorship pattern, geographical distribution, institutional contribution, reference distribution pattern, and ranking of leading authors. It is found from the analysis that at the starting time the journal was not so popular. But with the time being the journal become more and more popular among the academicians. There are a most extreme number of 80(22.99%) articles that were contributed with the joint effort of 3 writers followed by 68(19.54%) by 4 writers and 47(13.51%) by 2 writers. The USA is the top giver with 65(18.68%) research articles commitment. Universities are the biggest benefactors with 183(52.59%) articles contributing out of 348 chose articles. An all-out number of 17314 references were referred to in 348 articles. It implies each article gets a normal of 49.75 references. There are two authors, Isidro Cortes-Ciriano and Sunghwan Kim have contributed 4(1.15%) articles each and got the first position.

Keywords: Bibliometric, Cheminformatics, authorship pattern, reference distribution, Drug Discovery, Biochemistry, Reference length.

1. INTRODUCTION

Cheminformatics is a relatively new field of information technology that focuses on the collection, storage, analysis, and manipulation of chemical data. The chemical data of interest typically includes information on small molecule formulas, structures, properties, spectra, and activities (biological or industrial). Cheminformatics originally emerged as a vehicle to help the drug discovery and development process; however, cheminformatics now plays an increasingly important role in many areas of biology, chemistry, and biochemistry. The intent of this unit is to give readers some introduction into the field of cheminformatics and to show how cheminformatics not only shares many similarities with the field of bioinformatics, but that it can also enhance much of what is currently done in bioinformatics.(Wishart, 2007). As it is one of the new fields of knowledge. Therefore, only one journal has been published till today. The journal of cheminformatics was published in 2009. It became popular among the academic community. To make it more popular the researcher has chosen this journal for bibliometric analysis. The term 'Bibliometrics' defined as 'the application of mathematical and statistical methods to books and other communication medium' by Pritchard, A. (1969). Bibliometric methods are used in studies of properties and behavior of recorded knowledge for analysis of the structures of scientific and research areas, and for evaluation of research activity and administration of scientific information. Various statistical methods are applied to study to measure, authorship, citation and publication pattern, and the relationship within

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scientific domains and research communities and to structure of specific fields. In this sense, bibliometrics is also relevant for researchers, policy and decision makers and also researchers outside the library and information science (LIS) field to track the trend in the specific field in their research work. (Velmurugan & Radhakrishnan, 2016)

1. Genesis of the Journal

The Journal of Cheminformatics is a peer-reviewed open access scientific journal that covers cheminformatics and molecular modelling. It was established in 2009 with David Wild (Indiana University) and Christoph Steinbeck (then at EMBL-EBI) as founding editors-in-chief, and was originally published by Chemistry Central. At the end of 2015, the Chemistry Central brand was retired and its titles, including Journal of Cheminformatics, were merged with the Springer Open portfolio of open access journals. As of 2016, the editors-in-chief are Rajarshi Guha (National Center for Advancing Translational Sciences) and Egon Willighagen (Maastricht University). The journal has issued a few special issues ("article collections") in 2011 and 2012, covering topics like PubChem3D, the Resource Description Framework, and the International Chemical Identifier. The journal is abstracted and indexed in Chemical Abstracts Service, Current Contents/Physical, chemical & Earth Science, and in scopus. According to the Journal Citation Reports, the journal has a 2018 impact factor of 4.154. The most cited paper is on a cross-platform molecule editor and visualizer called Avogadro, which has been cited more than 1800 times as of September 2019 according to the Web of Science.("*Journal of Cheminformatics*," 2021)

2. Review of Related Literature

Lots of study conducted regularly on bibliometric analysis on various journal publications or on research literature. A few of them has been provided here: Das, (2021) has conducted a bibliometric study on "Journal of Informetrics" for a period between 2016-2020. The examination centers around essential bibliometric investigation structures, origin design investigation, year-wise conveyance of articles, issue-wise circulation of articles, single and multi-wrote papers. In the wake of investigating the information, he tracked down that the greatest number of articles were distributed in the year 2018 (85) and the base in the year 2019 (75) articles. The greatest number of articles were contributed by four writers and more with 119 articles (29.45%). Out of 404 articles, joint authors contributed 339 (83.91%) articles while the rest 65 (16.09%) articles were contributed by a single author. The level of cooperation in the Journal of Informetric is 0.83.(Das, 2021). Mondal, (2020) has conducted a study on bibliometric analysis of the Issues in Science and Technology Librarianship (ISTL) journal for the period of 10 years (2010-2020). Subsequent to dissecting 224 articles of 35 issues he tracked down that single author commitment during the entire term endures at half fixate the most noteworthy position contrasted with the gift of two author articles which kept on being 30%. The year 2020 has most elevated normal 31.20 followed by 2017 and 2019 with normal 23.64 and 22.59 reference per article. On account of reference dissemination, an absolute number of 3512 references were referred to in 310 articles. There are an absolute number of 430 authors have contributed in 224 articles.(Mondal, 2020). Tyagi and Bharadwaj, (2021) present a bibliometric analysis of the research journal titled "TulsiPrajna". The examination tracked down that the greatest number of distributions was recorded in 2019 (49 articles, 40.5%) while the base was in the year 2017 (12 articles, 9.9%), and the yearly

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normal development pace of 24.5%. The most elevated extent of papers was by single author (79.3%). A decent number of references was in 2019 (1195 references) trailed by 2020 with (589 references).(Tyagi & Bharadwaj, 2021). Mitch Wilson…et.al, (2021) has examined the publication patterns for neurology publications in general medicine journals. They found that the *New England Journal of Medicine* (*NEJM*) published more neurology articles than other journals. In the top 5 general medicine journals, there were more publications in neurology than in immunology, endocrinology, gastroenterology, or pulmonology.(Wilson, Sampson, Barrowman, & Doja, 2021). Raza and Malik, (2019) have conducted a bibliometric analysis of the journal of Knowledge management to identify the most popular form of contributions, publication pattern, highly cited articles and most prolific countries and institutions. During the period from 2009-2016 they found that the contributions from USA&UK was highest with 126 (24.8%) publications collectively. The two leading contributing institutions, i.e., Lakehead University and McMaster University were both from Canada and the top two contributing authors were also from these two universities.(Raza & Malik, 2019). After thorough review of the literature on bibliometric the researcher did not find any work on 'Bibliometric analysis of Journal of Cheminformatics'.

3. Methodology

To retrieves the data the researcher has used Publish or Perish software program as well as the website of Journal of cheminformatics. The entire process of data collection was completed in 31st May 2021. After collecting data, it is analyzed using excel as well as Publish or Perish software. Total no of 876 articles was found with different forms of publications during the period study from 2012 to 2021. But only 348 Research articles are considered for the present study because the articles in the forms of 'Research Articles' are the major constituent of the Journal of Cheminformatics.

4. Objectives

The objectives of the study are as follows:

1. To examine year-wise various forms of articles published in Journal of Cheminformatics during 2012-2021.
2. To study distribution of selected articles by year.
3. To study year-wise authorship pattern of the articles.
4. To find out year wise authors productivity.
5. To study geographical distribution of the contributors.
6. To study type of institutional contribution of paper.
7. To examine reference distribution pattern of the articles.
8. To find out range of references of published papers in JOC &
9. To examine the ranking of authors (in terms of contributions).

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5. Analysis

To break down information for the current examination all the assortment has been placed into dominate arrangement to ascertain a basic activity like expansion, substruction, duplication, division, normal, rate, and so on. Up to two decimal spot esteems has been considered for executing rate and mean worth.

6.1 Forms of Publications:

Table 1: Year-wise forms of publications

Forms	Year										Total Articles	%
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
Research articles	31	43	50	43	36	37	34	28	28	18	348	39.73
Research supplement	0	0	0	0	0	2	15	1	2	1	21	2.40
Poster presentation	0	0	0	0	0	0	0	62	53	62	177	20.21
Oral presentation	0	0	0	0	0	0	0	26	20	28	74	8.45
Software	7	10	14	14	10	19	16	10	11	8	119	13.58
Editorial	1	3	2	1	2	8	0	0	1	2	20	2.28
Methodology	1	3	3	4	8	0	3	6	2	8	38	4.34
Preliminary communication	1	2	1	0	2	2	0	0	0	0	8	0.91
Educational	0	4	0	0	0	0	0	0	0	0	4	0.46
Review	0	6	2	1	1	0	3	1	3	0	17	1.94
Correction	0	2	2	0	2	0	0	0	0	0	6	0.68
Database	1	1	3	2	5	5	6	3	4	1	31	3.54
Letter to the editor	0	0	2	0	0	0	0	0	0	0	2	0.23
Commentary	0	0	1	2	1	0	1	0	1	1	7	0.80
Book report	0	0	0	0	0	0	0	0	1	1	2	0.23
Meeting Report	0	0	0	1	0	1	0	0	0	0	2	0.23
Total	**42**	**74**	**80**	**68**	**67**	**74**	**78**	**137**	**126**	**130**	**876**	**100.00**

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Table1 shows various forms of publication of the Journal of Cheminformatics throughout the year under study. It is seen from the table that the journal has published a maximum number of 348(39.73%) Research Articles during the period 2012-2021. The articles in the form of Poster presentations of various authors have secured the second-highest position with 20.21% of total publication followed by articles in the form of 'Software' (13.58%) and 'Oral presentation' (8.45%). Three types of form viz., 'Letter to the editor', 'Book report' and 'Meeting report' has got the minimum score with (0.23%) out of 876 publications during the period under study. It is also seen from the table that out of 876 highest number of 137 articles published in the year 2019 followed by 130 articles in the year 2021 and 126 articles in 2020. A minimum number of 42 articles has published in the year 2012. Therefore, it may be concluded that the growth of publications of articles has gradually increased but not consecutively.

6.2 Distribution of selected articles:

Table 2: Distribution of selected articles under study

Year	Vol. no	No. of articles	%
2012	4	18	5.17
2013	5	28	8.05
2014	6	28	8.05
2015	7	34	9.77
2016	8	37	10.63
2017	9	36	10.34
2018	10	43	12.36
2019	11	50	14.37
2020	12	43	12.36
2021	13	31	8.90
Total		**348**	**100**

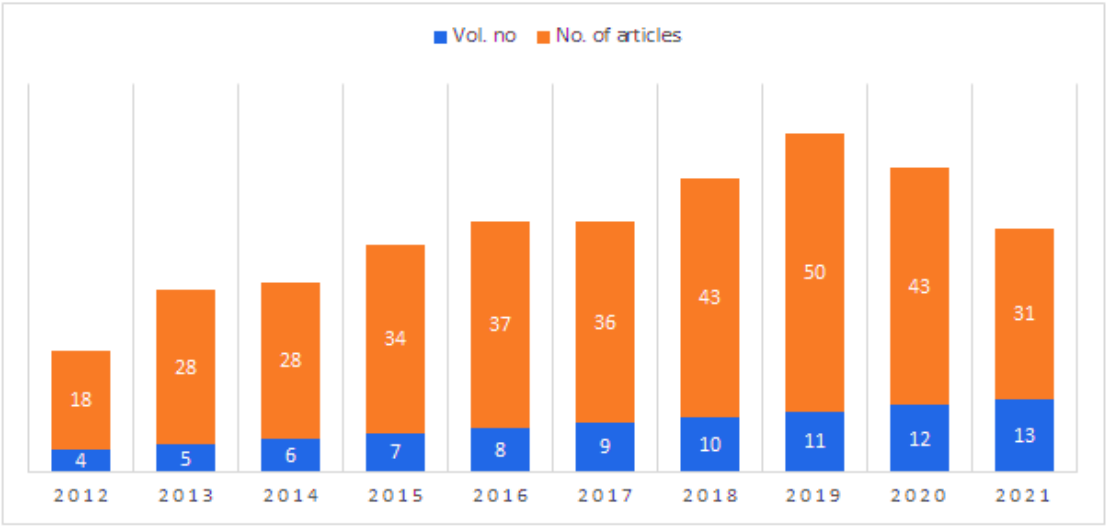

Figure 1: Distribution of selected articles under study

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Table 2 and Figure 1 show the distribution of selected articles that are taken to conduct the study. There is a total number of 876 articles (with various forms) published in the Journal of Cheminformatics (JOC) during the study period from 2012 to 2021. It is clear that Research Articles are the major constituent of the Journal of Cheminformatics. Therefore only 348 Research articles are considered for the present study. Out of 348 articles, a maximum number of 50(14.37) articles was published in 2019 followed by 2018 and 2019 with the same number of 43 (12.36) articles was published. On the other hand, the lowest number of 18(5.17) articles was published in 2012. It can be said that at the starting time the journal was not so popular. But with the time being the journal become more and more popular among the academician.

6.3 Authorship pattern:

Table 3: Year-wise authorship pattern of the articles

Authorship	Number of articles published (n=348)										Total Articles	%
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
Single	3	2	-	-	1	2	1	3	2	-	14	4.02
2 authors	1	3	5	3	6	4	9	8	4	4	47	13.51
3 authors	4	12	5	10	9	6	10	6	9	9	80	22.99
4 authors	1	1	8	6	7	5	11	10	13	6	68	19.54
5 authors	5	5	3	6	4	7	4	5	2	5	46	13.22
6 authors	2	1	5	6	6	4	3	4	5	1	37	10.63
7 authors	2	1	-	-	3	-	3	7	3	2	21	6.03
8 authors	-	3	-	1	-	3	-	2	3	2	14	4.02
9 authors	-	-	-	1	1	2	-	4	-	-	8	2.3
10 authors	-	-	1	-	-	-	1	1	1	1	5	1.44
>10 authors	-	-	1	1	-	3	1	-	1	1	8	2.3
Total articles	18	28	28	34	37	36	43	50	43	31	348	100
%	5.17	8.05	8.05	9.77	10.6	10.3	12.4	14.4	12.4	8.91	100	

Table 3 shows the year-wise creation example of the articles. It is seen from the table that out of 348 articles there are a most extreme number of 80(22.99%) articles were contributed with the joint effort of 3 writers followed by 68(19.54%) by 4 writers and 47(13.51%) by 2 writers. Then again, there are the most minimal number of 5(1.44%) articles were contributed based on cooperation of 10 writers. It is the green sign of most extreme joint effort among creators. It is striking here that the single writer commitment (14 articles) was extremely minor. It presumably occurs in uncommon cases.

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6.4 Authors Productivity:

Table 4: Year wise author productivity

Year	Total no of Papers	Total no. of authors	Average author/paper	Productivity per author
2012	18	72	4	0.25
2013	28	110	3.93	0.25
2014	28	123	4.39	0.23
2015	34	154	4.53	0.22
2016	37	154	4.16	0.24
2017	36	190	5.28	0.19
2018	43	173	4.02	0.25
2019	50	237	4.74	0.21
2020	43	203	4.72	0.21
2021	31	146	4.71	0.21
Total	**348**	**1562**	**44.48**	**2.26**

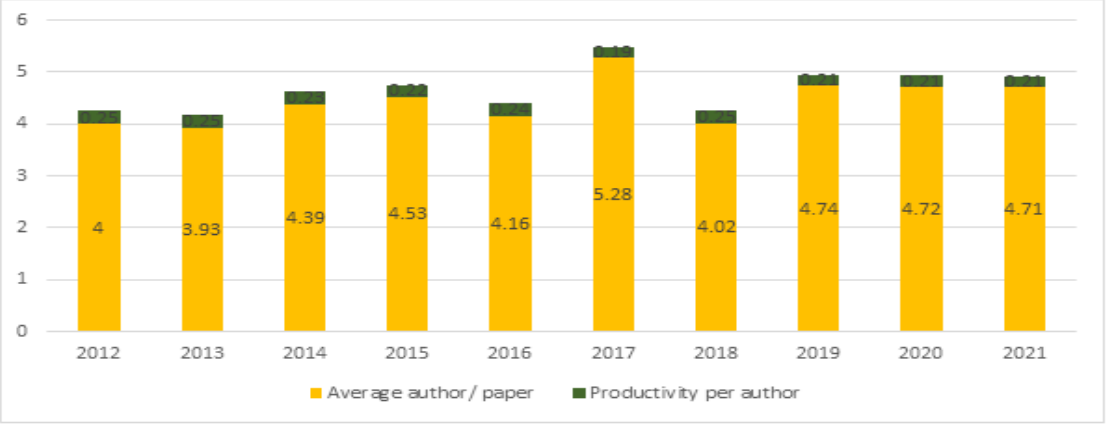

Figure 2: Year wise author productivity

Table 4 and figure 2 shows year-wise creators' usefulness. It is seen from the table and figures that the normal number of creators per paper is most elevated (5.28) in the year 2017 followed by 2019 with 4.74 and 2020 with 4.72. The most reduced normal creator per paper is found in the year 2013 with just a 3.93 mean worth. On the off chance that we take care of the efficiency per creator. Extremely minor changes occurred. Usefulness per creator was something very similar and most noteworthy in the year 2012, 2013, and 2018 with a mean worth of 0.25. In 2017 least efficiency was found with a mean worth of 0.19.

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6.5 Geographical distribution of articles:

Table 5: Geographical distribution of the contributors

S.N.	Name of the country	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	Total	%	Rank
1	USA	6	8	5	10	6	9	7	4	5	5	65	18.68	1st
2	UK	3	1	8	8	7	4	8	5	6	3	53	15.23	2nd
3	Germany	3	6	4	2	2	6	3	3	3	2	34	9.77	3rd
4	China	3	5	6	4	4	5	2	2	1	1	33	9.48	4th
5	Switzerland	0	3	4	1	4	0	1	1	1	0	15	4.31	5th
6	Sweden	1	4	5	2	1	1	0	0	0	0	14	4.02	6th
7	France	0	2	2	0	1	3	3	1	0	0	12	3.45	7th
8	Portugal	2	1	1	4	0	0	0	0	2	0	10	2.87	8th
9	Japan	1	1	1	0	2	0	0	2	1	0	8	2.3	9th
10	Netherlands	0	1	2	0	1	0	1	0	2	1	8	2.3	9th
11	Czech Republic	1	2	0	0	0	0	2	1	1	0	7	2.01	10th
12	Poland	1	1	0	0	0	1	2	1	1	0	7	2.01	10th
13	Republic of Korea	2	1	2	1	0	0	1	0	0	0	7	2.01	10th
14	Canada	0	0	0	0	2	0	1	2	0	1	6	1.72	11th
15	Italy	1	0	1	1	0	0	0	1	2	0	6	1.72	11th
16	Spain	0	1	3	2	0	0	0	0	0	0	6	1.72	11th
17	Saudi Arabia	2	1	0	0	0	2	0	0	0	0	5	1.44	12th
18	Colombia	0	0	1	0	0	2	0	1	0	0	4	1.15	13th
19	India	0	1	0	2	0	0	0	0	0	1	4	1.15	13th
20	Taiwan	0	0	0	1	2	0	0	0	1	0	4	1.15	13th
21	Hungary	0	0	1	1	0	0	1	0	0	0	3	0.86	14th
22	Israel	0	0	1	0	1	0	1	0	0	0	3	0.86	14th
23	Malaysia	0	0	0	0	0	0	0	1	1	1	3	0.86	14th
24	6 Countries that contributed 2 articles each	2	1	1	3	2	1	0	1	0	1	12	3.45	15th
25	19 Countries that contributed 1 article each	3	3	2	1	1	3	1	2	1	2	19	5.46	16th
Total		31	43	50	43	36	37	34	28	28	18	348		

Table 5 shows the topographical circulation of the contributors. During the examination time frame from 2012-2021 of the Journal of cheminformatics, there are 48 contributing nations. Out of 48 contributing nations, the USA is the top giver with 65(18.68%) research articles commitment. The Unified Realm, Germany, and China were put second, third, and fourth position in the positioning request with 53(15.23%), 34(9.77%), and 33(9.48%) commitments. Other than these 4 nations, 9 different nations go under the main ten contributing nations. Among them, two nations Japan and Netherlands have a similar number of 8(2.3%) commitments and got ninth position. The other three nations viz, Czech Republic, Poland and Republic of Korea protected 10 positions with 7(2.01%) commitment. Other than these Switzerland, Sweden, France, and Portugal positioned fifth, sixth, seventh, and eighth

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with 15(4.31%), 14(4.02%), 12(3.45%), and 10(2.87%) commitments. Out of 348 commitments under examination 6 nations contributed 2 articles each is in the most minimal position with a 3.45 % score and another 19 nations with 1 article each are in the second-least position having a 5.46 % score.

6.6 Contribution by type of Institutions:

Table 6: Contribution by the type of Institutions

Type of Institutions	No. of Contributions	%
Universities	183	52.59
Research and development Centre	47	13.51
Institutions	45	12.93
Laboratories	17	4.89
Limited Company	13	3.74
Libraries	11	3.16
Hospitals	4	1.15
Others	28	8.05
Total	**348**	**100.00**

Table 6 Shows sorts of Institutions or associations adding to the Journal of Cheminformatics during the period 2012-2021. It is seen from the table that Universities are the biggest benefactors with 183(52.59%) articles contributing out of 348 chose articles followed by different sorts of Research and Development centers and Institutions with 47(13.51%) and 45(12.93%) articles. Hospitals are the least patron among them contributing just 4(1.15%) articles.

6.7 Reference Distribution pattern:

Table 7. Reference distribution pattern

Year	No. of Articles	No. of References	Percentage	Avg. reference per article
2012	18	693	4.00	38.50
2013	28	1165	6.73	41.61
2014	28	1317	7.61	47.04
2015	34	1600	9.24	47.06
2016	37	1710	9.88	46.22
2017	36	1920	11.09	53.33
2018	43	2402	13.87	55.86
2019	50	2709	15.65	54.18
2020	43	2337	13.50	54.35
2021	31	1461	8.44	47.13
Total	**348**	**17314**	**100.00**	**49.75**

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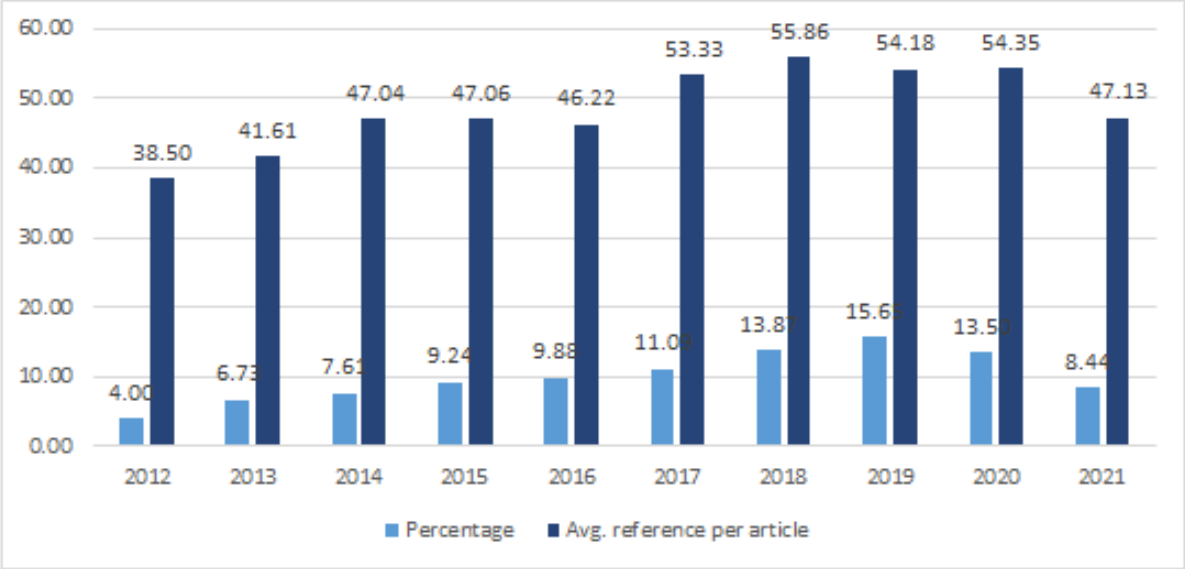

Figure 3: Reference distribution pattern

Table 7 and Figure 3 show the example of reference dissemination in the most advantageous manner. It is seen from the table that an all-out number of 17314 references were referred to in 348 articles. It implies each article gets a normal of 49.75 references. The year 2018 has the most noteworthy normal 55.86 followed by 2020 and 2019 with a normal of 54.35 and 54.18 references per article. Then again, the year 2012 addresses the most minimal normal of 38.50 references per article. The most reduced reference (4.00%) rate has seen in 2012 in opposition to the 15.65% reference found in 2019.

6.8 Length of References:

Table 8: Length of references

Reference length	No. of Articles	%
0-20	15	4.31
21-40	112	32.18
41-60	143	41.09
61-80	50	14.37
81-100	16	4.60
101-120	5	1.44
121-140	4	1.15
141-160	3	0.86
Total	**348**	**100**

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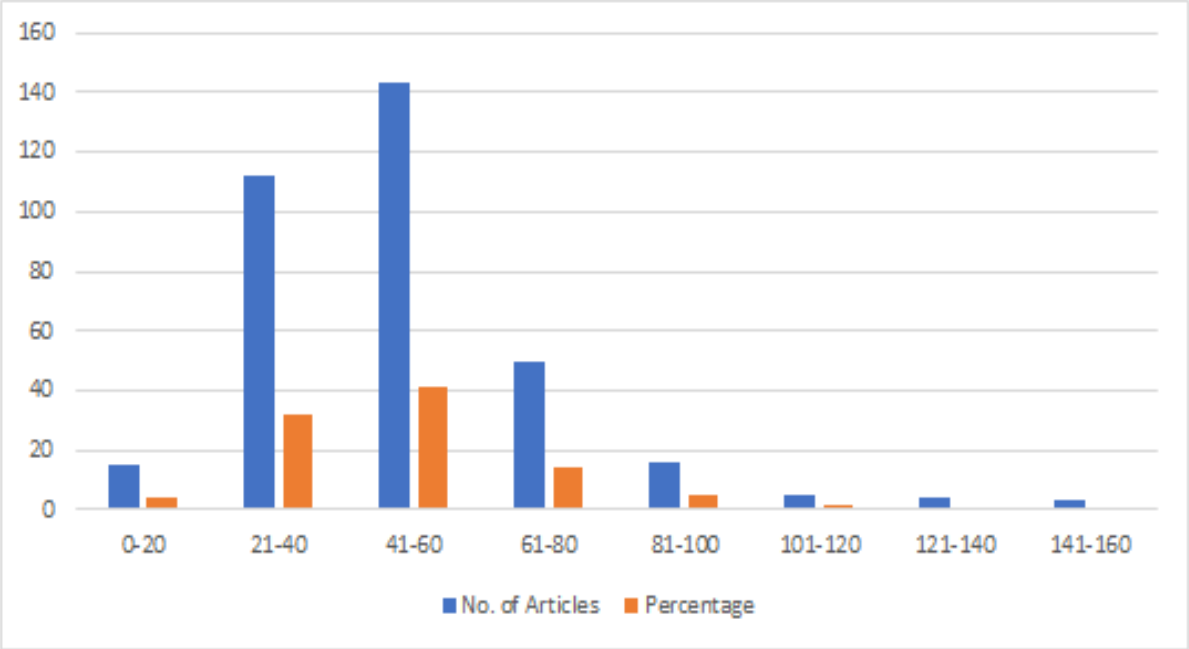

Figure 4: Reference length

Table-8 and Figure 4 show for each article references in the paper distributed in JOC and uncovers that most of papers 143 (41.09%) had 41-60 references followed by 112(32.18%) articles had 21-40 references and 50(14.37%) articles got 61-80 references. Then again, 3 (0.86%) papers got just 141-160 references.

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6.9 Ranking of Authors:

Table 9: Ranking of authors (in terms of contribution)

Sl.no	Name of the author	No. of Contributions	%	Rank
1	Isidro Cortes-Ciriano	4	1.15	1st
2	Sunghwan Kim	4	1.15	1st
3	Alex M Clark	3	0.86	2nd
4	Francois Berenger	3	0.86	2nd
5	JosepArús-Pous	3	0.86	2nd
6	LudovicChaput	3	0.86	2nd
7	Matthew J Harvey	3	0.86	2nd
8	Yongbeom Kwon	3	0.86	2nd
9	Andrea Morger	2	0.57	3rd
10	Andrés M Castillo	2	0.57	3rd
11	César R. García-Jacas	2	0.57	3rd
12	Daniel Probst	2	0.57	3rd
13	Dejun Jiang	2	0.57	3rd
14	Domenico Gadaleta	2	0.57	3rd
15	Emma L. Schymanski	2	0.57	3rd
16	George Van Den Driessche	2	0.57	3rd
17	Gerard JP van Westen	2	0.57	3rd
18	Gergely Zahoránszky-Kőhalmi	2	0.57	3rd
19	Hamse Y Mussa	2	0.57	3rd
20	Janna Hastings	2	0.57	3rd
21	Kamel Mansouri	2	0.57	3rd
22	Leen Kalash	2	0.57	3rd
23	Lindsey Burggraaff	2	0.57	3rd
24	Mark I Borkum	2	0.57	3rd
25	Melvin J Yu	2	0.57	3rd
26	Ming Hao	2	0.57	3rd
27	Nicolas Bosc	2	0.57	3rd
28	Noel M O'Boyle	2	0.57	3rd
29	PhyoPhyo Kyaw Zin	2	0.57	3rd
30	Ramón Alain Miranda-Quintana	2	0.57	3rd
31	Robin Haunschild	2	0.57	3rd
32	Saber A Akhondi	2	0.57	3rd
33	Samantha Kanza	2	0.57	3rd
34	Samina Kausar	2	0.57	3rd
35	ShardulParicharak	2	0.57	3rd
36	Stefan Senger	2	0.57	3rd
37	Thierry Hanser	2	0.57	3rd
38	Volker D Hähnke	2	0.57	3rd
39	WahedHemati	2	0.57	3rd
40	Other authors that contributed 1 article	260	74.71	4th
Total		**348**	**100.00**	

Table 9 shows the positioning of authors/contributors of articles based on their commitments. There are two authors in particular, Isidro Cortes-Ciriano and Sunghwan Kim have contributed 4(1.15%) articles each and got first position. Six authors in particular, Alex M Clark, Francois Berenger, JosepArús-Pous, LudovicChaput, Matthew J Harvey and

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Yongbeom Kwon have gone under second position contributed with 3 (0.86%) articles each. Then again, 31 writers have gone under third position contributed with 2(0.57%) articles each. 260 different authors have contributed 1 article each during the time of study.

Findings

After the assessment of data got from the Journal of Cheminformatics for the period 2012 to 20121, here are presented following fascinating real factors, revelations, or discoveries is given under:

1. The Journal of Cheminformatics has distributed a greatest number of 348(39.73%) Research Articles during the period 2012-2021. Out of 876 distributed articles most elevated number of 137 articles distributed in the year 2019 followed by 130 articles in the year 2021 and 126 articles in 2020. A base number of 42 articles has distributed in the year 2012. In this way, it very well might be presumed that the development of distributions of articles has slowly expanded yet not successively.
2. It is clear that Research Articles are the major constituent of the Journal of Cheminformatics. Therefore only 348 Research articles are considered for the present study out of 876 articles.
3. Out of 348 articles, a maximum number of 50(14.37) articles was published in 2019 followed by 2018 and 2019 with the same number of 43 (12.36) articles was published. On the other hand, the lowest number of 18(5.17) articles was published in 2012. It can be said that at the starting time the journal was not so popular. But with the time being the journal become more and more popular among the academician.
4. Out of 348 articles there are a most extreme number of 80(22.99%) articles were contributed with the joint effort of 3 writers followed by 68(19.54%) by 4 writers and 47(13.51%) by 2 writers. Then again, there are the most minimal number of 5(1.44%) articles were contributed based on cooperation of 10 writers. It is the green sign of most extreme joint effort among creators. It is striking here that the single writer commitment (14 articles) was extremely minor. It presumably occurs in uncommon cases.
5. The normal number of creators per paper is most elevated (5.28) in the year 2017 followed by 2019 with 4.74 and 2020 with 4.72. The most reduced normal creator per paper is found in the year 2013 with just a 3.93 mean worth. On the off chance that we take care of the efficiency per creator. Extremely minor changes occurred. Usefulness per creator was something very similar and most noteworthy in the year 2012, 2013, and 2018 with a mean worth of 0.25. In 2017 least efficiency was found with a mean worth of 0.19.
6. USA is the top giver with 65(18.68%) research articles commitment. The Unified Realm, Germany, and China were put second, third, and fourth position in the positioning request with 53(15.23%), 34(9.77%), and 33(9.48%) commitments.
7. Universities are the biggest benefactors with 183(52.59%) articles contributing out of 348 chose articles followed by different sorts of Research and Development centers

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and Institutions with 47(13.51%) and 45(12.93%) articles. Hospitals are the least patron among them contributing just 4(1.15%) articles.

8. An all-out number of 17314 references were referred to in 348 articles. It implies each article gets a normal of 49.75 references. The year 2018 has the most noteworthy normal 55.86 followed by 2020 and 2019 with a normal of 54.35 and 54.18 references per article.

There are two authors in particular, Isidro Cortes-Ciriano and Sunghwan Kim have contributed 4(1.15%) articles each and got first position. Six authors in particular, Alex M Clark, Francois Berenger, JosepArús-Pous, LudovicChaput, Matthew J Harvey and Yongbeom Kwon have gone under second position contributed with 3 (0.86%) articles each.

CONCLUSION

Bibliometrics is a required discipline of information science as it represents a completely unique set of techniques for determination of various scientific indicators, assessment of scientific output and choice of a journal for libraries, monitoring, and evaluation of resources, control of information in social and organizational contexts(Haque, Islam, Hasan, &Akanda, 2019, pp. 2014–2018). Cheminformatics is a notably new area of facts generation that specializes in the collection, storage, evaluation, and manipulation of chemical data. The Journal of Cheminformatics is one of the main peer-reviewed open access scientific journals in the area of cheminformatics. The Journal of Cheminformatics is one of the leading peer-reviewed open access scientific journal journals in the field of cheminformatics. It covers cheminformatics and molecular modeling. It started its journey in 2009. The present bibliometric study from the period 2012-2021 of the journal aims to reveal the image of the journal in the field of chemical science. This may be helpful for the librarian to make a decision in their acquisition policy. After completion of the study, it is found that there are 876 articles available in the journal during the year 2012 to 2021 onwards in various forms. Out of these only 348 articles have been selected for the study. Out of 348 articles, a maximum number of 50(14.37) articles was published in 2019 followed by 2018 and 2019 with the same number of 43 (12.36) articles was published. There are a most extreme number of 80(22.99%) articles that were contributed with the joint effort of 3 writers followed by 68(19.54%) by 4 writers and 47(13.51%) by 2 writers. The USA is the top giver with 65(18.68%) research articles commitment. The Unified Realm, Germany, and China were put second, third, and fourth position in the positioning request with 53(15.23%), 34(9.77%), and 33(9.48%) commitments. Universities are the biggest benefactors with 183(52.59%) articles contributing out of 348 chose articles followed by different sorts of Research and Development centers and Institutions with 47(13.51%) and 45(12.93%) articles. The year 2018 has the most noteworthy normal 55.86 followed by 2020 and 2019 with a normal of 54.35 and 54.18 references per article. There are two authors, in particular, Isidro Cortes-Cipriano and Sunghwan Kim have contributed 4(1.15%) articles each and got the first position. Six authors, in particular, Alex M Clark, Francois Berenger, JosepArús-Pous, LudovicChaput, Matthew J Harvey, and Yongbeom Kwon have gone under the second position contributed with 3 (0.86%) articles each.

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