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Web Services in Cloud Computing research: Insights from Scientometric

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Abstract:

The research is the outcome of the investigation of 4035 papers on web services and cloud study, as covered in the Web of Knowledge core collection database during 2010 - 2019, going through an overall group author contribution of 29.00% during the period, Iosup, Alexandru, et al with a citation impact per paper of 44.10% and a journal impact per paper of 5.768 by Future generation computer systems-the international journal of science. The world's web services and cloud research output is diverse, with the top three open access research journals accounting for 66.59% (All Open Access 44.03%, DOAJ Gold 17.41%, Green Published 14.37%).Conference Proceedings Citation Index-Science of global output during different periods. The foremost institutional contribution to web services and cloud research comes from universities, followed by Tsinghua University, Wuhan University, Chinese Academy of Science, and The University of Melbourne, Australia during the periods. During 2004-13, India's global publication share was 5.66%, and it ranked fourth in global publication output. The top ten authors have 188 citations, and Buyya R, (132 citations), Dean J, (97 citations), Zeng LZ, (82 citations), and Mell Peter, (76 citations) share respectively during the periods. This study consequently increases the side by side of the wakefulness of web services and cloud computing and helps structure the knowledgeable success of web services through cloud computing.

Keywords: Cloud, Web Services, Web Services in library, Cloud computing, Library Cloud, and Scientometric.

Introduction

Cloud computing can be defined as the collection of processing administration as a utility, for example, programming as on-demand assistance.(Vogels WA. 2008; Armbrust M et al 2009; Fernando N, Loke SW, Rathayu W. 2013). In Cloud computing, applications are conveyed as an assistance over the web and the necessary equipment and framework programming that are situated in far-off server farms give application services (Armbrust M et al 2009; Fernando N, Loke SW, Rathayu W. 2013). Also called "on request processing", "utility registering" or "pay more only as costs arise", rethink it as a far off utility from a far off information/asset administration provider (Fernando N, Loke SW, Rathayu W. 2013). The three primary cloud computing paradigms are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) (SaaS). Infrastructure as a Service (IaaS): It offers the required basis for successful innovation, server farms, employees, memory, organisations, and other equipment in anticipation of cloud administration customers on the IT platform. Amazon's Elastic Computing Cloud (EC2), Cisco Unified Service Conveyance, and Flexi scale are three examples. Platform as a Service (PaaS): This improves the environment for applications by utilising the Internet, working framework, and associated administrations, and customers are not required to have programmes on their PCs; for example, Google Apps Engine, Amazon Web Services. The goal of basic distributed computing is to eliminate the requirement to claim a neighbourhood calculation foundation in favour of using Web Services and Microsoft Azure. Programming as a Service (SaaS) is a method of product distribution. The expert co-op creates web-based solutions for customers and supports Web Services and administration-based engineering (SOA). Saleforce.com and IBM Lotus Live are used in the models. Anything as a Service (Xaas): This refers to the many models of data innovation that are based on the sought advantages that may be delivered via the distributed computing stage. Daramola O and Ibukun E (2015).

The target of the current investigation is to give a refreshed and deliberate assessment of the turn of events and the present status of examination profitability in web administration and cloud research. Such an examination is both ideal and significant, providing a truly necessary proof foundation for educational momentum and future endeavors to advance research plans in the subjects.To accomplish this even-handed, we utilize the world's biggest ordered data set (Web of Knowledge) to quantitatively audit the exploration efficiency in web administrations and cover it in the course of a very long time in different orders, sum up the nature of such

examination utilizing regular measurements of exploration quality, and look at the exhibition of web administrations and cloud to its geographic district, just as in different nations with prominent development in research profitability over a similar period.

Research Methodology

Thomson ISI Online for Science (WoS) was deliberately selected as the database in this research to extract the most relevant papers on the subject of web services through cloud computing. It revealed the distributing communities of various essential journals, including Elsevier, ASCE Library, EBSCO, Emerald, IEEE Explore, ProQuest, Springer Link, Taylor & Francis, Wiley Online Library, and others. The ISI web of science was certified at the time when it was assessed as the most extensive database for top to bottom superb methodical articles and comprehends the most powerful articles and journals, which verify the highest level of scientific healthiness of WoS. (Olawumi and Chan, 2018). The Web of Science Core Collection has authorised the purchase of the gathered works search, reclamation, data mining, and indexing the significant publications: Science Citation Index Expanded (SCIEXPANDED) --2000-2018, Conference Proceedings Science Citation Index (CPCI-S) —2000-Present and Emerging Sources E-Science Citation Index (ESCI) - 2005-2014 Using a search engine, search for "Web Services" and "cloud" in the article's keywords, abstract, or title from 2010 to 2019. (10 years). Information such as the year of publication, name and postal address of the first author, affiliation (S) of the first author, and keywords were extracted and indexed from each article. The search results were narrowed down to include only journal articles and conference papers published in English that had previously been peer-reviewed. The HistCite programme (12.03.17), SPSS Version 23.0, and Microsoft Excel 10 were utilized for the scientometric investigations, and the WoS records were taken, stored in WoS "Clear Angle," and downloaded and recorded as research data for usage according to the HistCite instructions. We investigated the trend by linear regression and displayed the data to evaluate the trends of publications during the period of interest and the number of published articles throughout the years. Based on the location of the associated author's institutions, the nations with the highest number of publications were found. The research design used in this study is shown. As shown in the graph, indicators such as keywords, cited authors, cited journals, scientific categories, document citations, nation and area, authors, document type, and publication year were employed for scientometric analysis.

Analysis and Results

Table 1. Source Wise Distribution on Web Services through the cloud computing Output

S.No.	Document Type	Recs	Percent	TLCS	TGCS
1	Proceedings Paper	2759	68.40	521	7870
2	Article	1173	29.10	763	17623
3	Article; Proceedings Paper	42	1.20	9	321
4	Review	36	0.90	43	1051
5	Editorial Material	18	0.40	1	176
6	Article; Book Chapter	2	0.00	1	3
7	Meeting Abstract	2	0.00	0	0
8	Book Review	1	0.00	0	1
9	Reprint	1	0.00	0	2
10	Review; Book Chapter	1	0.00	0	2
	Total	**4035**	**100.00**	**1338**	**27049**

A total of 4035 publications on Web Services through cloud computing research were separated into ten manuscript groups from 2010–2019. Among those, 68.40 percent of publications were in the form of Proceedings Papers (2759 Papers, TLCS 521, and TGCS 7870), leading to the top input. followed by Article, Article; Proceedings Paper, Review, Editorial Material, Article; Book Chapter, Meeting Abstract, Book Review, Reprint, and Review; Book Chapter. Accordingly, we only appropriated 4035 proceedings papers to get more respect. Table 1 displays Total Publications (TP), Total Local Citations Score (TGCS), and Total Global Citations Score during the 10-year study period.

Fig. 1 shows an example of a formalized formal the amount of time periods that separate the two time series is referred to as the lag. The number of delays is set to ($-\sqrt{n+7}$ to $\sqrt{n+7}$). The correlation between the observations of two time series, y_{t+k} and x_t separated by k time units (the correlation between y_{t+k} and x_t) is the cross correlation function. To see whether there is a link between two time series, use the cross correlation function. To see whether there is a link between the two series, look for a high correlation with correlations on both sides that fast $= \sqrt{\frac{2}{7-|2|}}$ become non-significant. A correlation is usually considered significant when the

absolute value is larger than, $2/\sqrt{n-|k|}$, where n is the number of observations and k is the lag. This is a rule-of-thumb computation based on large-sample normal approximation. If the Web Services through cloud computing cross correlation of lag k is zero for $= 2/\sqrt{7-|2|}$ k = 1, 2…, then $r_{xy}(k)$ will be nearly normally distributed, with mean (μ) zero and standard deviation "σ") $1/\sqrt{n-|k|}$. Because 95 percent of cloud computing Web services are within standard deviations of the mean, a test that rejects the hypothesis that the population cross correlation of lag k equals zero when $|r_{xy}(k)|$ is larger than $2/\sqrt{n-|k|}$) has a significance level (α) of around 5%, or about 0.41. The association is significant since 0.41 > 0.5. We may infer that for years, Web services have been subjected to cloud computing from upstream to downstream

Lag	Cross Correlation	Std. Errora
-7	0.49	0.71
-6	0.36	0.58
-5	0.20	0.50
-4	-0.02	0.45
-3	-0.35	0.41
-2	-0.69	0.38
-1	-0.97	0.35
0	-0.56	0.38
1	-0.13	0.41
2	0.08	0.45
3	0.28	0.50
4	0.41	0.58
5	0.37	0.71
6	0.00	0.00
7	0.00	0.00

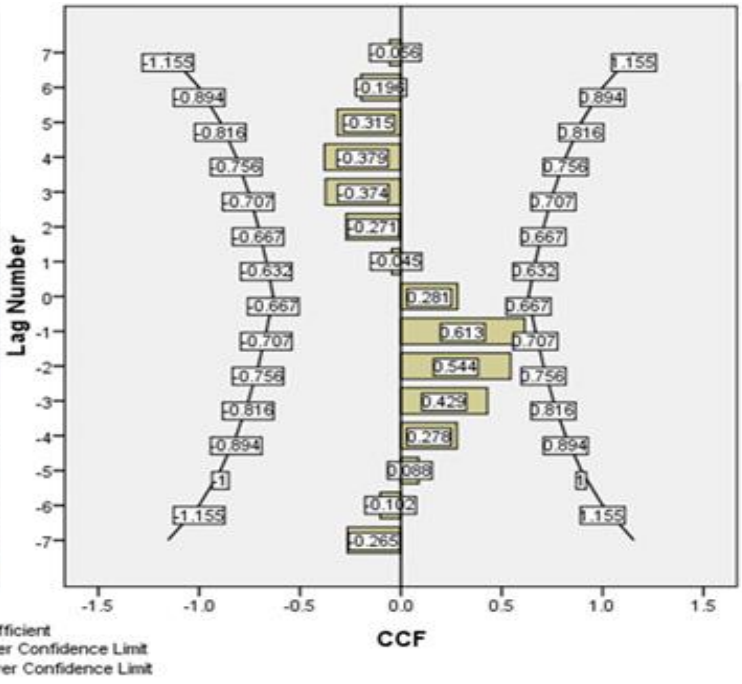

Figure 1. Publication Year wise Time Series analysis Web Services the Cloud computing

Fig. 2 English is the major language of literature (99%). Spanish (5%), Portuguese (2%), Korean and Russian (1% respectively), Arabic, Turkish, Chinese, French, Italian and Serbian (0% respectively). Buyya R, from the University of Melbourne, Australia, with 23 records, he was the most prolific author in this area. Tsinghua University, Haidian District, Beijing (China) produced the highest number of Web services through cloud computing publications with 43 articles. Authorship is acknowledged under the customary categories, specifically, Single, Double, Three, and more than three categories. Table 3 reveals the authorship pattern's qualifying strong points. It was found that more than three authors formed 10066 records of the whole research output, while three authors formed 3180

records. Double authorship had a score of 1724 records. It was smaller than the number of single authors and had a score of 239 records. Further, it was found out that the multiple-author ship was the dominant one. The results regarding more than three authors prove the hypothesis is positive. The year-wise distribution of author groups and their publication count over a period of eleven years revealed interesting results. Single authored papers showed a growing trend during the years 2010-2019 and later there was a decline and the number of publications was reduced. The maximum productivity was 33 in the year 2015, while in the year 2019 it reached a minimum, indicating that single authorship did not keep pace with time in its growth. Concerning two (Double) authored publications, the maximum output recorded was 244 with repeating performance during the years 2010-2019, followed by 242 publications with repeat performance during the years 2010-2019. The annual cumulative figures for two authored publications were found with mixed results of increases and decreases. Publications by categories of three authors produced the highest output of 495 in 2015, followed by 471 in 2014.There was a sudden drop in the declining trend, and there was very little publication in 2019.In the category of more than three authors, the highest output was recorded in 2016 (1610), followed by 1485 counts in 2018.

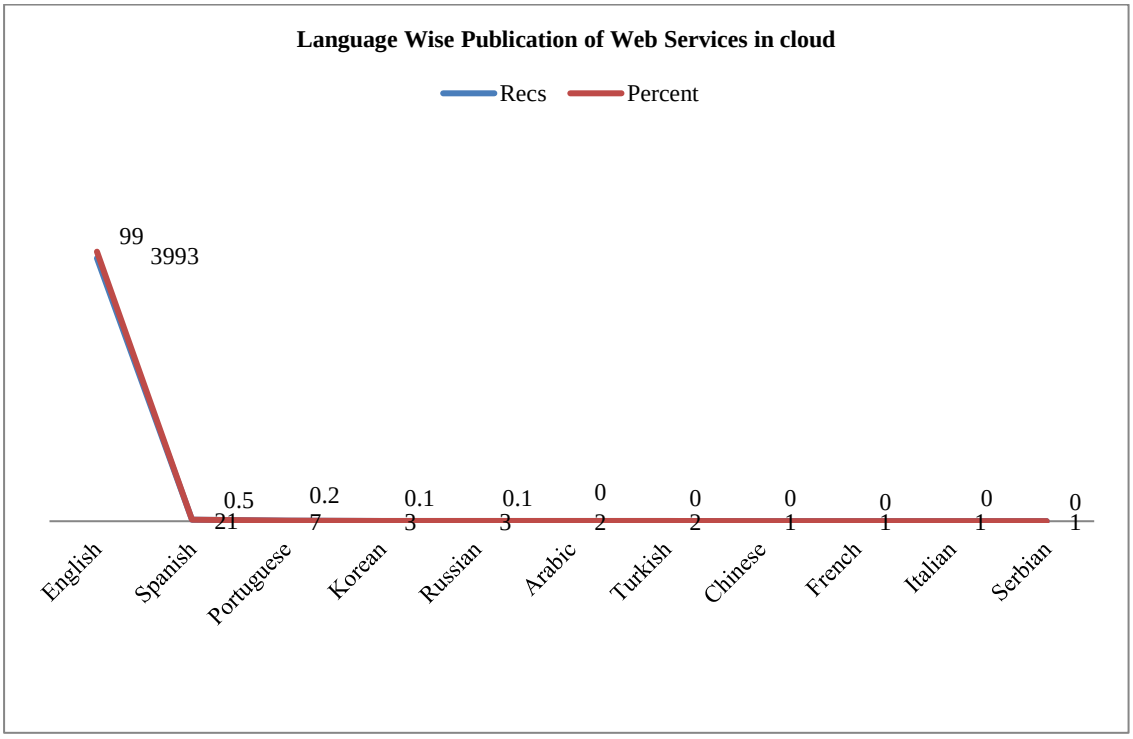

Figure 2. Language Wise Publication of Web Services through the cloud computing

Table 2. Year wise Authorship Patten of Web Services through the cloud computing Research output

Year/ Authorship	Single Author	Double Author	Three Author	More than Three Author	Total	Percent
2010	**17**	**60**	**105**	**278**	**460**	**3.02**
2011	**22**	**94**	**144**	**493**	**753**	**4.95**
2012	**26**	**148**	**285**	**738**	**1197**	**7.87**
2013	**37**	**216**	**339**	**1030**	**1622**	**10.66**
2014	**23**	**244**	**471**	**1183**	**1921**	**12.63**
2015	**33**	**242**	**495**	**1384**	**2154**	**14.16**
2016	**25**	**238**	**414**	**1610**	**2287**	**15.04**
2017	**31**	**218**	**426**	**1477**	**2152**	**14.15**
2018	**22**	**206**	**393**	**1485**	**2106**	**13.85**
2019	**3**	**58**	**108**	**388**	**557**	**3.66**
Total	**239**	**1724**	**3180**	**10066**	**15209**	**100.00**

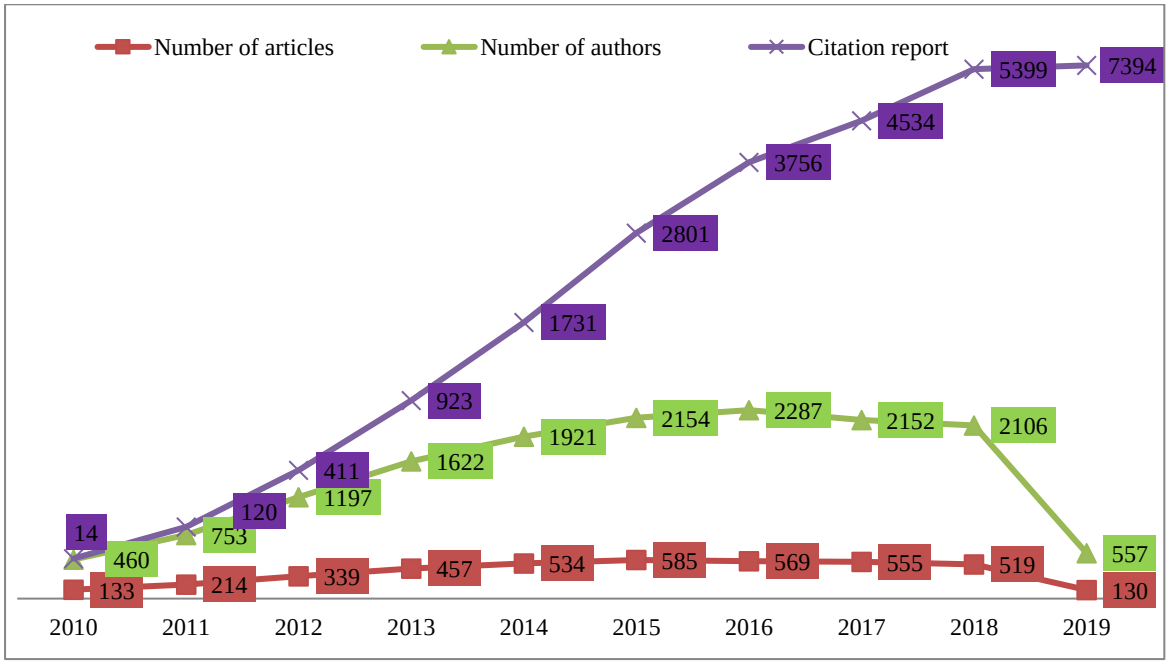

Figure 3. Showing Year wise Number of articles, Authorship and Citation reports in Web Services through the cloud computing research output

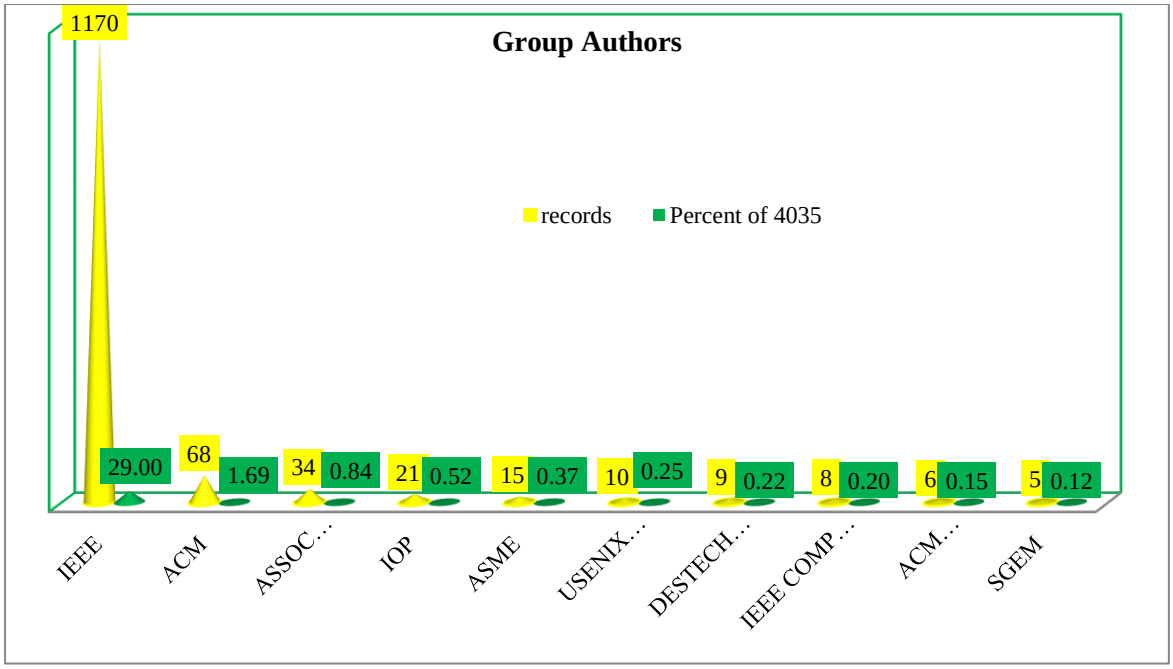

Figure 4. Contributed of Group Authors

Fig. 3 depicts the year-by-year global distribution of research output in Web Services through cloud computing during a ten-year period from 2010 to 2019. The entire publication sum total was found to be 4035 and the maximum productivity happened in the year 2015, numbering 585, and this formed 14.50 percent of the whole productivity. The smallest calculation of total productivity was in the year 2019 at 3.22 percent. The total amount contributed by the authors was discovered to be 15209, with the highest contribution occurring in the year 2016, numbering 2287 and accounting for 15.04 percent of total productivity. The most recent total output calculation was in 2010, with a 3.02 percent increase. The total number of citations calculated was 27083, with the most cited in 2019 being 7394, accounting for 27.30% of all cited reports. The most recent calculation of the total number of cited reports was in 2010, at 0.05.02 percent.

Fig. 4 explains the top ten group authors in different disciplines of Web Services through cloud computing. The accumulation of records over a ten-year period revealed a total of 4035 articles. The IEEE group author has the highest number of contributors with 1169 articles, followed by the ACM group author with 67 articles, followed by the Association of Computer Machinery group authors with 34 articles. According to the results of the above analyses, Astronomy & Astrophysics is the leading group of authors, with 1169 articles.

Table 3. Top 10 Institutions output of Web Services through the cloud computing

S.No.	Institution	Records	Percent	Citations	H-
1	Tsinghua University	43	1.10	1127	13
2	Wuhan University	37	0.90	1200	11
3	Chinese Academic Science	36	0.90	1081	12
4	University Melbourne	31	0.80	1279	15
5	Huazhong University Science &	28	0.70	568	6
6	Beijing University Posts &	27	0.70	544	7
7	Shanghai Jiao Tong University	25	0.60	745	7
8	Unknown	25	0.60	364	7
9	Beihang University	24	0.60	512	9
10	National Institute Technology	22	0.50	585	5

Table 4. Agglomeration schedule for single linkage solution in Country

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	6	7	.000	0	0	5
2	9	10	.000	0	0	4
3	4	5	.000	0	0	7
4	8	9	.001	0	2	5
5	6	8	.002	1	4	6
6	6	11	.005	5	0	7
7	4	6	.010	3	6	8
8	3	4	.087	0	7	10
9	1	2	.091	0	0	10
10	1	3	.573	9	8	0

From 2010 to 2019, the top ten most prolific universities interested in Web Services via cloud computing research produced 3367 papers. Table 3 shows the publishing profiles of these ten institutions, as well as their research output, citations received, and h-index values. These 10 institutions collected have contributed 1.10% share (with 43 articles) the cumulative output of

Tsinghua University productivity during 2010–19. During the year, two institutions contributed (0.90%) more than the average productivity of Wuhan University, and Chinese Academic Science, University of Melbourne, contributed 0.80%.These are Huazhong University Science & Technology, Beijing University Posts & Telecommunication with 0.70%, (28 and 27 articles) and Shanghai Jiao Tong University, Unknown, Beihang University contributed (0.60%), National Institute Technology and lowest (0.50%) publication in the field of Web Services through cloud computing.

Table 5. Top 10 Journals Research output of Web Services through the cloud computing

S.No.	Journal	Records	Percent	H-Index	Impact Factor
1	Future generation computer systems-the international journal of science	65	1.6	21	5.768
2	Concurrency and computation-practice & experience	33	0.8	9	1.167
3	Journal of network and computer applications	24	0.6	15	5.273
4	Journal of supercomputing	23	0.6	8	2.157
5	IEEE transactions on services computing	22	0.5	11	5.707
6	IEEE access	18	0.4	6	4.098
7	Cluster computing-the journal of networks software tools and applications	16	0.4	5	1.901
8	IEEE transactions on parallel and distributed systems	15	0.4	11	3.402
9	Computers & electrical engineering	14	0.3	8	2.189
10	Journal of universal computer science	14	0.3	5	0.910

The agglomeration schedule is a mathematical approximation of the cluster answer. On the main stage, items 6 and 7 are joined for the reason that they have the lowest distance. The cluster formed by their subsequent linking resembles a stage of 5.In stage 5, the clusters produced in stages 1 and 4 are linked. The resulting cluster now resembles stage 6.This tabletop is relatively long when there are several belongings, but it could be relaxed by examining the coefficient column for large gaps rather than scanning the dendrogram. A respectable cluster

answer appreciates a sudden jump (gap) in the distance coefficient. The gap solution specifies a respectable solution. The major gaps in the coefficient column take place between stages 7 and 8, indicating an 8-cluster solution. These are similar to people who respond to the dendrogram. This is, to some extent, an unacceptable response because there is no heavy-duty group. Effort is a solution using a whole connection (Extreme neighbor) as the cluster technique.

Table 6. Top 10 Meeting Titles output of Web Services through the cloud computing

Meeting Titles	**Records**	**Percent of 4035**
4th IEEE international conference on cloud computing technology and science cloud communication	13	0.321
11th IEEE international conference on cloud computing cloud part of the IEEE world congress on services	10	0.247
5th IEEE international conference on cloud computing technology and science IEEE cloud communication	10	0.247
IEEE 8th international conference on cloud computing	10	0.247
IEEE international conference on systems man and cybernetics SMC	10	0.247
10th IEEE international conference on cloud computing cloud	9	0.222
11th IEEE international conference on services computing SCC	9	0.222
IEEE international conference on cloud engineering IC2E	9	0.222
21st IEEE international conference on web services ICWS	8	0.198
11th international conference on service oriented computing ICSOC	7	0.173

Founded on the outcomes obtained from HistCite software on the occurrence of modules of Web Services through the cloud computing journals, Table 5 was created. By way of example, the ten most frequent components of Web Services through cloud computing journals are Future generation computer systems-the international journal of science (with a frequency of 65 and 21 H-Index), Journal of network and computer applications, and Journal of supercomputing (with a frequency of 24 and 15 H-Index). Future generation computer systems-the international journal of science (5.768) was ranked first among the top ten journals that received the impact factor of journals, followed by IEEE transactions on service computing (5.707), while third-place Journal of network and computer applications (5.273), IEEE access (4.098), and other journals are ranked below the top four impact factors in the world.

The 4035 articles are scattered over 1234 Meeting Titles classify the top 10 meetings. The publication frequency of research organizations in various systematic sub-fields is shown in table 6. The most visible institutions in Web Services through cloud computing research-oriented meeting are highly active in the 4th IEEE international conference on cloud computing technology and science cloud communication in the field contact meeting (13 records and 0.321) in the fi one or both of the 11th IEEE international conference on cloud computing cloud, part of the IEEE world congress on services, 5th IEEE international conference on cloud computing technology and science IEEE cloud communication, IEEE 8th international conference on cloud computing and IEEE international conference on systems man and cybernetics SMC (10 records and 0.247) in fields as well, 10th IEEE international conference on cloud computing cloud, 11th IEEE international conference on services computing SCC and IEEE international conference on cloud engineering IC2E (9 records and 0.222) in the field of Web Services through the cloud computing-based contact meeting, 21st IEEE international conference on web services ICWS (8 records and 0.198) and 11th international conference on service-oriented computing ICSOC (7 records and 0.173) in the field of Web Services via cloud computing contact meetings from 2010 to 2019.

Table 7. Top 10 Editors output of Web Services through the cloud computing

Editors	Records	Percent of 4035
Barolli L	41	1.01
Xhafa F	30	0.74
Takizawa M	26	0.64
Enokido T	25	0.62
Zhang J	22	0.54
Hu X	19	0.47
Liu L	18	0.45
Chang CK	16	0.40
Pu C	14	0.35
Cicinsain M	13	0.32

To ensue more with this analysis, the table 7 results obtained from WoS core collection were measured, in line for to the statistic that these collected information have features

supporting to do an effective evaluation between the editors who are productive in performing research in this field of Web Services through the cloud computing. Now immediate, Barolli L (frequency of 41, Percent of 1.01), Xhafa F (frequency of 30, Percent of 0.74) Takizawa M (frequency of 26, Percent of 0.64), Enokido T (frequency of 25, Percent of 0.62), Zhang J (frequency of 22, Percent of 0.54) were the greatest far and wide contributed editors in Web Services through the cloud computing related publications for during the years 20102019.

At the moment, Web of Science categorises open access publications as ‘DOAJ Gold,' ‘Other Gold,' ‘Bronze,' ‘Green Published,' or ‘Green Accepted.' Articles classified as gold open access (229 percent) in Web of Science are all those that have been discovered as being freely accessible from the publisher. There is no difference between papers in gold open access journals, Other Gold (82%) journals, or subscription journals that make (some) articles freely accessible but without a licence for re-use (read-only), frequently after a specific length of time (delayed open access). Bronze open access (167%) articles scholarship do not employ constitutional rights at all. It may not even be evident that the articles may be lawfully downloaded and saved from the journal's website. There are no rights to share or redistribute them in any way. This whole group is referred described as ‘all gold' open access. Articles labelled ‘Green Accepted' (189%) or ‘Green Published' (71%), in Web of Science, are all articles for which either the accepted version (manuscript after peer review, but without publisher formatting) or the published version (with publisher formatting) can be retrieved from a repository curated by the publisher (table 8).

Table 8. Open Access research output in Web Services through the cloud computing

Open Access	**Records**	**Percent**
All Open Access	581	44.03
DOAJ Gold	229	17.41
Other Gold	82	6.08
Bronze	167	12.70
Green Published	189	14.37
Green Accepted	71	5.40
Total	**1315**	**100.00**

Table 9. Top 100 Web of Science Index during Years in Web Service in cloud

Web of Science Index	Records	Percent
Conference Proceedings Citation Index-Science	2812	66.59
Science Citation Index Expanded	1112	26.33
Emerging Sources Citation Index	164	3.88
Social Sciences Citation Index	68	1.61
Conference Proceedings Citation Index-Social Sciences and Humanities	62	1.47
Book Citation Index–Science	3	0.07
Arts and Humanities Citation Index	2	0.05
Total	**4223**	**100.00**

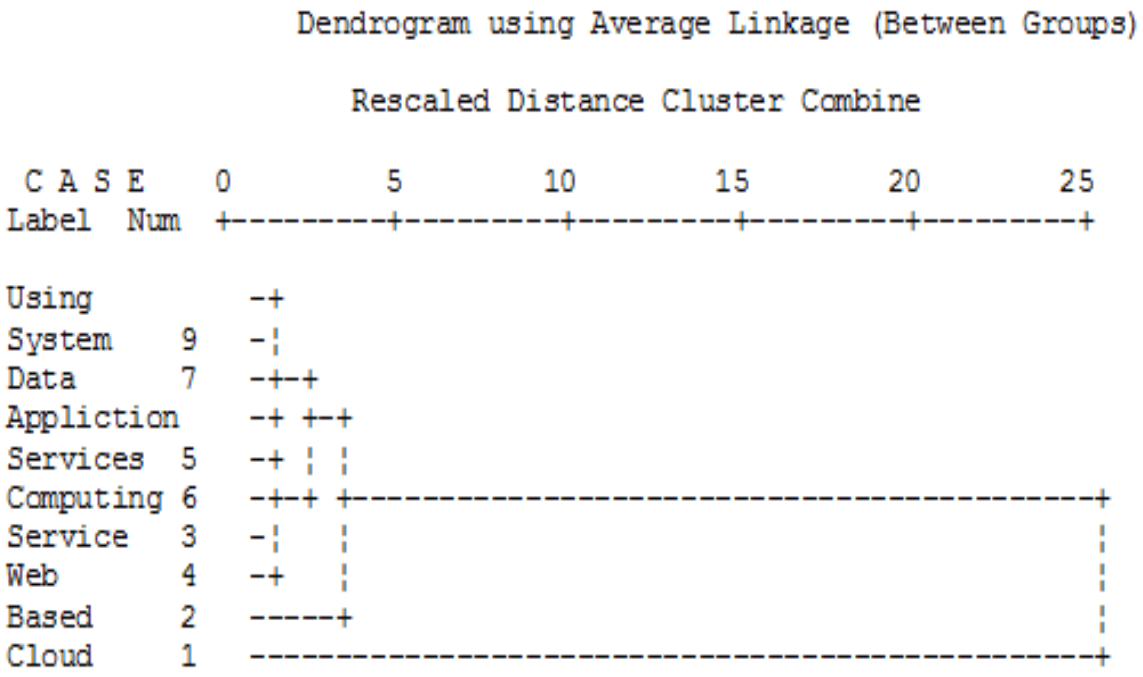

Figure 5. Dendrogram using Average Linkage (Between Groups) in Key word wise Web Services through the cloud computing

Table 9 also shows that when all three databases are used to discover indexing for an article effort, the number of indexes increases significantly in the WOS compared to using only one database. More information on this is provided below, demonstrating the difference it makes when expanding the index sources beyond the Web of Science. The impact of separating different indices is highly dependent on the research area (s) of an article, just as it is with straight counts. Use of the Web of Science increased the Conference Proceedings Citation Index-Science by 66.59%, that of the Science Citation Index Expanded by 26.33%, the Emerging Sources Citation Index by 3.88%, the Social Sciences Citation Index by 1.61%, the

Conference Proceedings Citation Index-Social Sciences and Humanities by 1.47%, the Book Citation Index–Science by 0.07% and the Arts and Humanities Citation Index by 0.05%, respectively.

Fig. 5 It is significant to know that the dendrogram is immediate to the distance matrix, and, as follows with the greatest reviews, information is lost. The dendrogram suggests that 2 and 4 are much closer to each other than 2 to 1, but the original data (publicized in the scatterplot) shows that this is not correct. To use specific jargon, a dendrogram is perfect when data fulfills the ultra-metric tree disparity, and this is doubtful for real-world data. The significance of the data loss is that the dendrograms are most accurate at the foot, viewing which articles are similar.

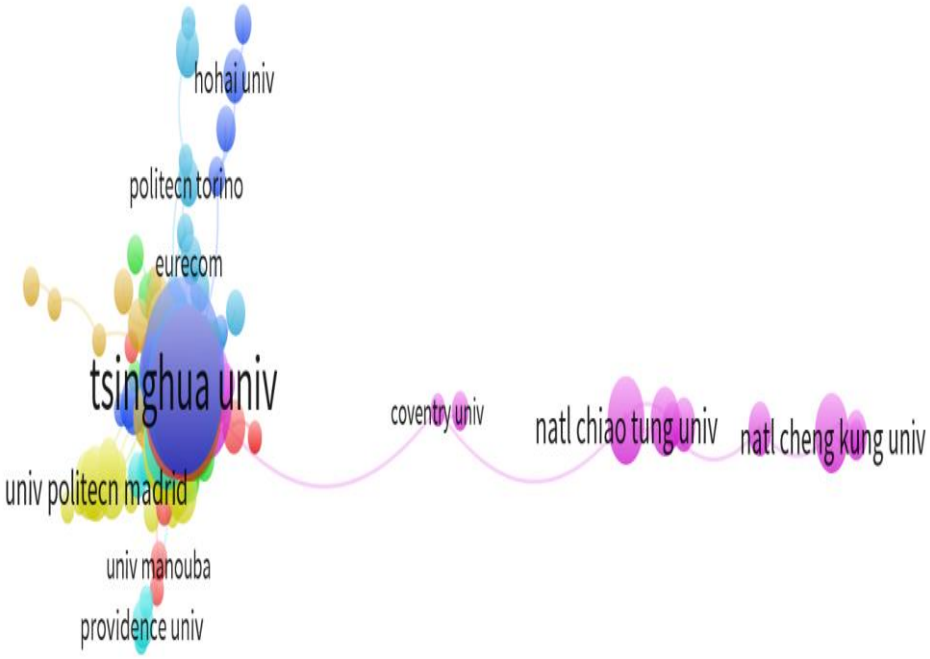

Figure 6. Collaborations of institutions researched in Web Services through the cloud computing

Analysis at the institutional level of 4035 institutions around the world engaged in Web Services through cloud computing research, and the top 10 most productive institutions are presented above the figure. Two of the top ten institutes are from Chinese universities. This may explain why China was the most generous contributor to the institutions. It can be seen that Tsinghua University took first place with 43 articles, followed by Wuhan University. Similar to institutional cooperation analysis, we also have the collaboration of Web Services

through the cloud computing of the top 20 institutions. (1) Overall, the cooperation relationships between the top 10 institutions were relatively intimate; (2) Wuhan University played a key role in Web Services through cloud computing and collaborated with most institutes, particularly; (3) the relationships between the Chinese Academy and science; and (4) some institutes needed to improve their collegiality.

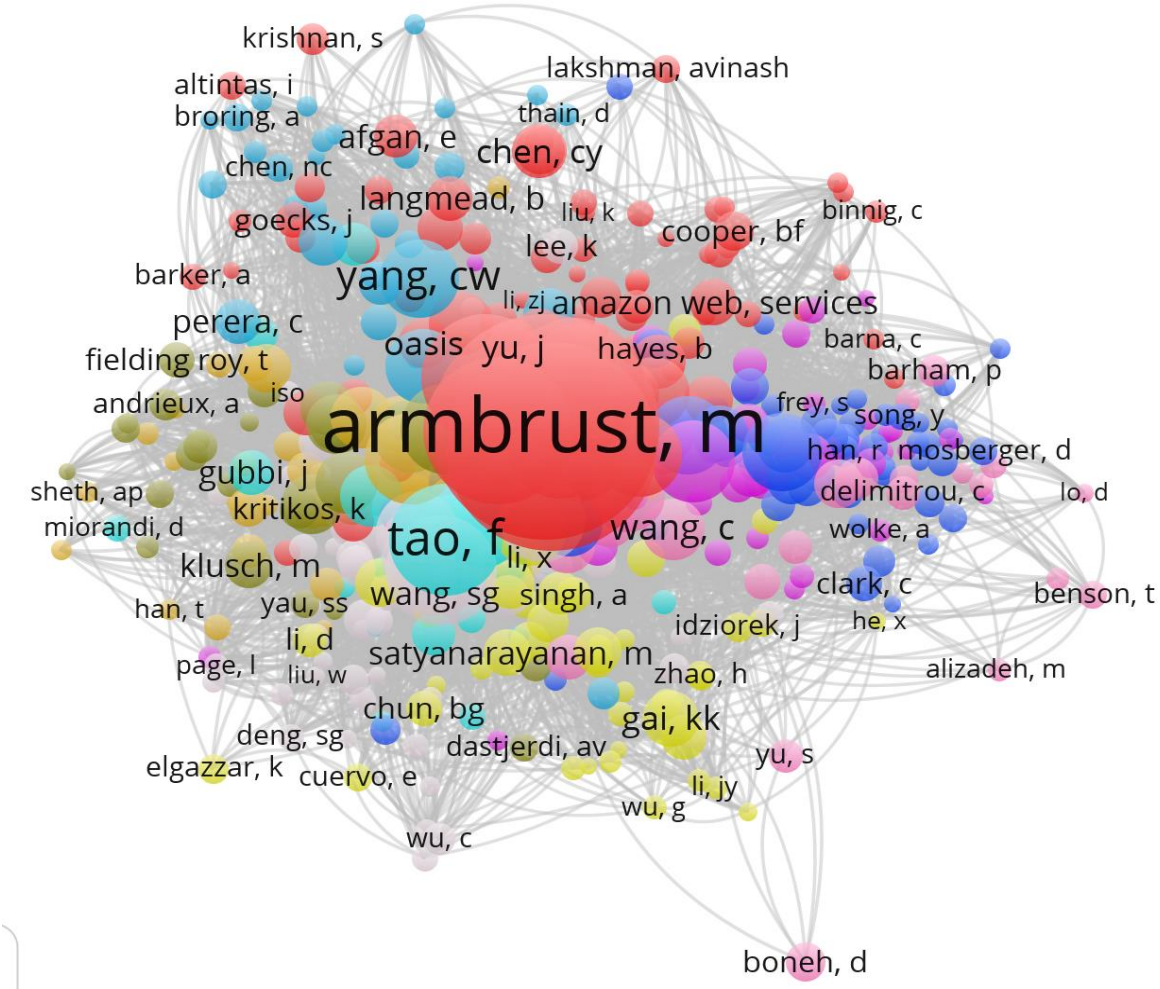

Figure7. Co-citation wise cited author only researched in Web Services through the cloud computing

Author co-citation analysis: More than 15209 authors contributed to these 4035 articles. These authors were ranked according to the citation number of their published articles. The co-citation cited author link shows the top 969 authors above in Figure 7. The largest node was found for Armbrust, M. (188 citations), indicating his essential contribution to Web Services through cloud computing. The size of the circles represents their citation number; the larger the circle, the more the citations are. A shorter distance suggests a stronger and higher co-citation relationship between the two authors. Circles of the same color were classified as a similar field. In the above figure, five clusters of authors have been distinguished. The leading

researchers were Buyya R, (132 citations), Dean J, (97 citations), Zeng LZ, (82 citations), Mell Peter, (76 citations), and Vaquero LM, (74 citations), respectively, in each cluster. Other researchers were directly or indirectly associated with one of these leading researchers.

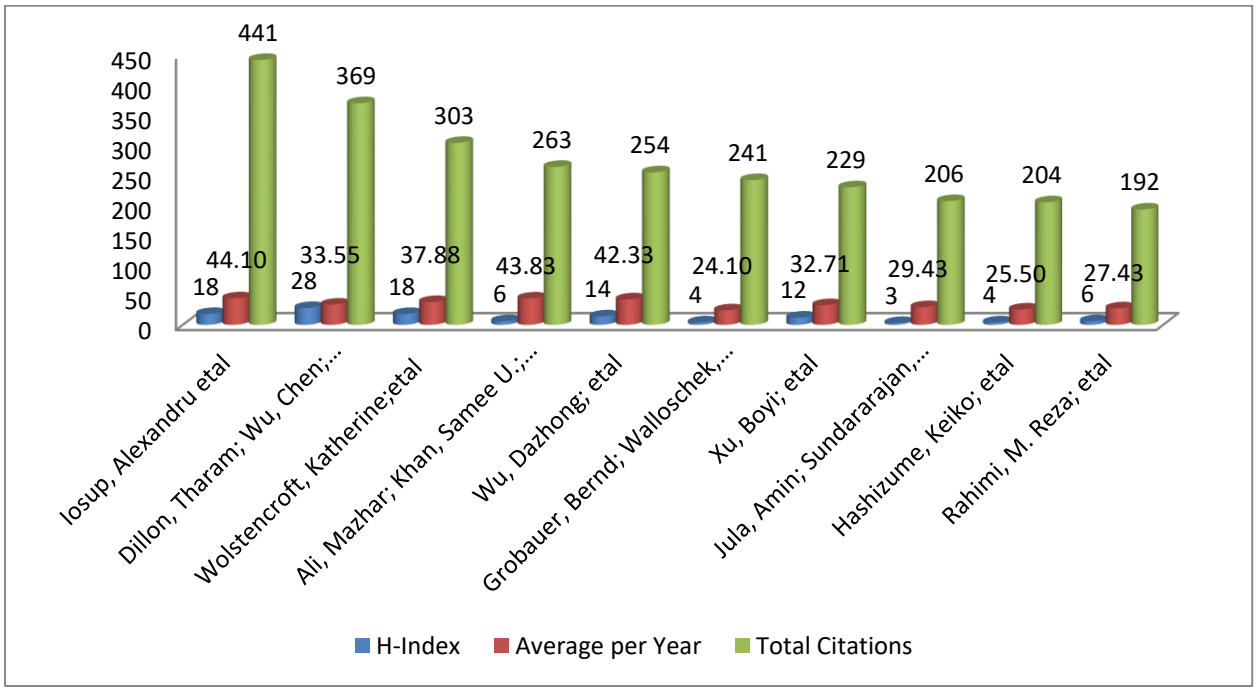

Figure 8.Year wise Top 10 Citation Reports in Web Services through the cloud computing

Fig. 8. The 4035 total publications contributed by the top 10 authors have received 27131 citations, registering a citation impact per paper of 6.7. Ten authors have registered a higher impact than the average citation impact per paper of all authors. They are Iosup, Alexandru et al with a citation impact per paper of 44.10, followed by Dillon, Tharam et al (33.55), Wolstencroft, Katherine et al (37.88), Ali, Mazhar et al (43.83), Wu, Dazhong et al (42.33), Grobauer, Bernd et al (24.10), Xu, Boyi (32.71), Jula, Amin (29.43), Hashizume, Keiko et al (25.50) and (Rahimi, M. Reza et al (27.43) have averagely increased. The top 10 most productive authors, five authors, have registered a higher value than the h-index. They are Dillon, Tharam et al with an h-index value of 18, followed by Iosup, Alexandru et al, and Wolstencroft, Katherine et al (18), Ali, Mazhar (14) and Xu, Boyi, et al (12).

Conclusions

Because of cloud computing, high usability, language independence, and platform independence, Web Services may be used to construct a completely transparent and uniform software interface layer that provides user complete channel data collecting, modification, and monitoring operations. The statistical study not only takes a historical look into the area of Web

Services through cloud computing, but it also looks forward to the future of Web Services through cloud computing. Despite the fact that identifying the evolutionary designs and emerging motions in Web Services via cloud computing research is a visible, independent, and comprehensive technique, this study discovers the important information building. While this study looked at significant Web Services through cloud computing collected works from the previous three decades, our findings couldn't tell the difference between likely publications and peer-reviewed journal and conference paper publications, especially in the field's younger collected works. This scientometric review might be expanded in the future to concentrate on the sub-themes of Web Services via cloud computing research, taking into consideration a broad variety of current literature or the most recently released content.

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