Internet of Things in Manufacturing: A Bibliometric Analysis

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ABSTRACT

Manufacturing industry is currently putting resources into new innovations, such as, the Internet of Things (IoT), analytics, distributed computing, and network protection to adapt to its multifaceted nature, increment in data, improving performance, and increase competitive advantage in business. Understanding the capacity of digital frameworks relies on the improvement of new strategies on the Internet of Manufacturing Things for information empowered advancements in engineering. Also in the field of manufacturing, supply chain optimization and adoption of new technologies has seen significant importance across the globe so as the big data and internet of things also. The emergent field of the Internet of Things (IoT) has been evolving rapidly and so are the publications in this field. This paper presents a bibliometric analysis of the literature on IoT advances and frameworks that are the drivers and establishments of information driven developments in smart manufacturing. The paper reviewed the articles published on IoT from 2013 to 2020 from the Web of Science database. This study distinguishes top contributing authors; key exploration themes identified with the field; the most compelling works dependent based on citations and PageRank; and set up and rising research clusters,most contributing affiliations, top themes in the research, geographical references with respect to authors and other key parameters.The study proposes a group characterization of research topics that may illuminate momentum and future exploration in IoT and areas for further research in the field of industrial applications of IoT.

Keywords

Internet of things (IoT), Bibliometric Analysis, Industrial IoT, Supply chain optimization, Industry 4.0, manufacturing, big data.

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I. Introduction

With the appearance of Industry 4.0, the general change utilizing computerized reconciliation and intelligent engineering has taken jump towards cutting edge innovation. All gadgets today are furnished with AI, robotization has become a need and consequently another mechanical and industrial transformation is really taking shape (Xu,2015). Internet of Things (IoT) has amalgamated equipment and programming with the web to make an all the more actually determined condition. Gartner predicts that by the 2020, there will be 20.4 billion IoT gadgets. Execution of IoT in medical care, keen urban areas, and manufacturing businesses has defined creative approaches to team up with these gadgets. IoT is gainful in the fields where both quicker turns of events, as well as quality of products, are the basic components for a better return on Investment (ROI). One such field is the manufacturing industry, and the Industrial Internet of Things (IIoT) has changed it with things like big data, artificial intelligence(AI), and (Sun et al., 2019) machine learning (Rao,2018). IoT has huge numbers of uses in manufacturing plants.it helps in facilitating the production flow, it can also be leveraged to control the warehouse activities and also for inventory handling activities. (Wu et al, 2018). It is one reason interest in IoT gadgets has soar in the course of recent decades. IoT in logistics, manufacturing, and transportation will ascend to $40 Billion by 2020. IoT can interlink market-prepared arrangements and the use data for board framework(Ghahramani et al., 2020). It encourages businesses to mechanize the control of IoT-empowered assembling exercises that are executed in workshops (Qiu et al,2015). Industries can get to, distinguish, and control the assembling execution measure. It helps in covering all the situations from the beginning of manufacturing to the delivery item. The data from IoT-enabled industry layers becomes the production and product-related input for the industry. IoT gadgets empower undertakings to appropriately addresses the issues identified with association, processing, and control (Fernandez-Carames2018).

Most publications in the field discuss the impact of internet of things on the operations of various industries, applications of IoT(Ben-Daya et al., 2019; Lee, 2015; Raman et al., 2018; Rejeb et al., 2019), trends and innovations in the field, Industry 4.0 and blockchain(Dai et al., 2019; Poor, 2019). Review of the existing literature in the field show that there is no comprehensive overview of the field and hence this paper fills this gap. This paper

presents a bibliometric investigation of the writing onanalysis of the literature on IoT technologies and systems that are the enablers and establishments of information based developments in smart manufacturing(Abuhasel , 2020; Contreras-Masse et al., 2020). This paper covers significant parts of IoT in the manufacturing segment beginning with the conversation on the definition. It aims at recognizing the top contributing authors, examination of the themes, most compelling work, and clustering of research dependent on bibliometric organizations and citation analysis.

This paper is composed in the accompanying segments. The main area manages the idea of IoT, the bibliometric analysis is examined in the subsequent segment, the third segment is about methodology used, bibliometric, and next section is about different analysis like source impact, authors impact, citation analysis, most frequently used words and co-word analysis the last section presents the conclusions and the discussion of future scope.

1. Bibliometric Analysis

Bibliometric Analysis is the endeavour to quantitatively evaluate the scholastic nature of journals or authors by measurable strategies, for example, reference rates, authors' effect, recurrence of keywords, affiliations, and numerous different boundaries. It is a pre-owned method in a scope of orders, as vital administration, corporate social duty, medication, science and innovation, and corporate colleges. This methodology encourages scientists to comprehend the degree of a subject, its developing patterns, and its advancement over a time. This bibliometric study is unique in a many aspects. To begin with, it applied the innovation planning approach in the assembling business comprising of bibliometric literature in the rising research space of internet of things applications in manufacturing industry and to limit inclination andsubjectivity.Second, the examination expanded the IoT innovation application planning approach with an inside and out analysis of the recognized research subjects. Third, it broke down the research themes, recognized huge research gaps, and gave future roads in the examination area of internet of things applications in the field of manufacturing. (José2016; Behnam 2015).

To address the examination inquiries of this investigation, we recognized a few exploration articles distributed inside the business and the executives field. The distributions were gotten utilizing the Web of Science information bases. Information getting from the current writing is important in the development application arranging approach since it chooses the datasets of articles from which fitting closures will be drawn. We chose the Web of Science database to due to exhaustiveness of the database in comparison to other databases such as EBSCO or others.

Table 1. Information index

Description	Results	Document contents	
MAIN INFORMATION ABOUT DATA		Keywords Plus (ID)	522
Timespan	2013:2020	Author's Keywords (DE)	1093
Sources (Journals, Books, etc.)	137	AUTHORS	
Documents	299	Authors	1055
Average years from publication	1.65	Author Appearances	1225
Average citations per documents	18.26	Authors of single-authored documents	19
Average citations per year per doc	5.269	Authors of multi-authored documents	1036
References	12854	AUTHORS COLLABORATION	
DOCUMENT TYPES		Single-authored documents	20
Article	269	Documents per Author	0.283
article; early access	4	Authors per Document	3.53
article;	6	Co-Authors per	4.

proceedings paper	
editorial material	1

Documents	1
Collaboration Index	3.71

Figure 1 gives insights regarding the methodology and stream utilized in this paper for the general analysis. The keyword search in Web of Science was set to consolidate titles, edited compositions, and catchphrases to recoup each huge circulation The request time period was set to join articles disseminated between January 1, 2013, to 2020. Simply English-language appropriations were considered for the audit cycle. The underlying hunt appeared more than 361 papers, yet sifting the outcomes to just the business research region gave 299 papers published in the Web of Science databases. We removed the duplicate articles from further analysis. A total of 299 different researchers published articles in time spanning2013 to 2020, related to IoT applications in the manufacturing business and management function. (Surabhi,2020; Naveen,2019). Table1 gives the all main information related to selected research articles for bibliometrics analysis from the web of science database. Information like timespan, sources, documents, average year of publication, citations per publications, information about authors, co-authors, collaboration index, and many other things. Table1 provides an overview of all the major parameters in the bibliometric analysis on which we base our further analysis.

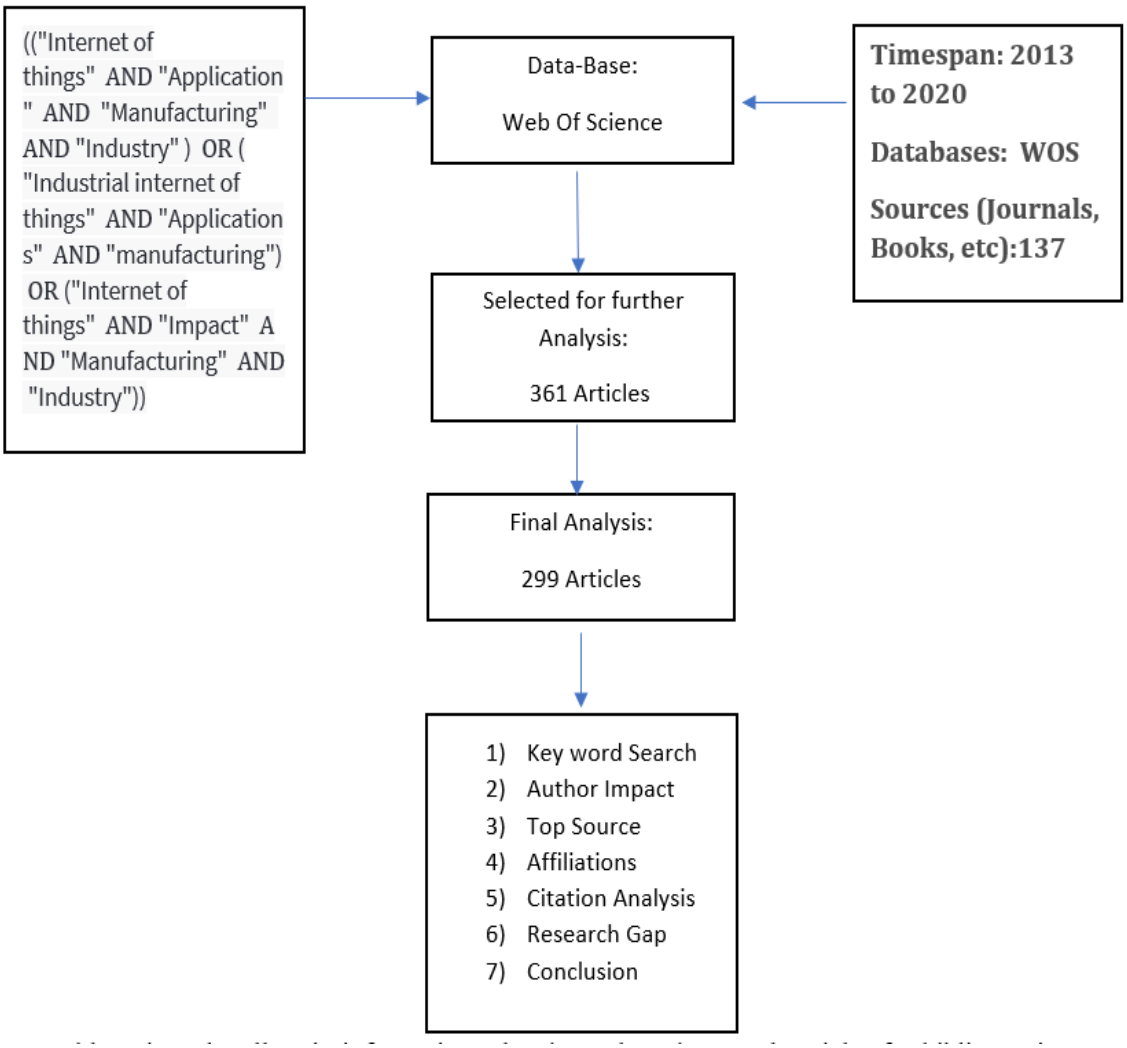

Figure 1. Flowchart showing the flow of activities for Bibliometric analysis

The screening cycle extracted 299 articles distributed inside the set timeframe from 137 unique sources, 45 nations, and 448 distinct establishments. This shows the flexibility and transparency of specialists over the world to take a gander at IoT applications in the field. Further, the outcomes show that this field is in the advancement stage, as there are relatively few

basic researchers yet. Additionally, investigator with various foundations have added to this field.

2. Methodology

We scanned the existing literature identified with IoT applications in the manufacturing sector from the Web of Science information base utilizing keywords identified with IoT applications. The keywords utilized for data collection include - “Internet of Things”, “Applications”, “Manufacturing”, “Industry”.

Below are the Combination of this keywords used in the data collection process

(1) "Internet of things"AND "Application" AND "Manufacturing" AND "Industry"

(2) "Industrial Internet of things" AND "Applications" AND "manufacturing",

(3) "Internet of things"AND "Impact" AND "Manufacturing" AND "Industry".

We guaranteed that IoT application, its effect, and right now existing applications are totally covered by the keywords which we picked. For instance, IoT comprises of all the industry 4.O innovation in assembling/manufacturing, operations, buying, sourcing, execution estimation, product advancement, and product configuration are completely covered in the manufacturing sector.All the selected articles from the Web of Science search utilizing the above keywords, which are in the English language was imported to Endnote book reference programming, the disposal of papers was finished in Endnote and the arrangement was reconverted to .txt(ANSI) format. The subsequent document was utilized for additional information investigation in Biblioshiny utilizing R studio library. For Co-Word examination VOS viewer was used with .csv information record of a similar information from Web of Science.

2.1. Source Impact:

Figure 2 shows the pattern in the number of articles published. While the field is still in its initial development and extension period, these outcomes show that exponential development in distributions is happening. The underlying measurements show that 137 journals have added to the publication of 229 papers. It was discovered that 10 journals have distributed 135 of these distinguished articles(Table), speaking to roughly 45% of all papers distributed. Table 2 shows the journal where these papers showed up. IEEE Access, Sensors, IEEE Transactions On Industrial are a portion of the significant wellsprings of the articles.Table 2 gives a review of the most compelling journals, of which just 4 journals with the most elevated H-index are introduced here. In spite of the fact that the H-index can't fully reflect the quantity of a journal in light of the fact that a high number of publications may impact the H-index, it gives an estimation that is nearer to the quality as seen by established researchers than the outcomes found with the effect factor. By positioning the journals as indicated by the H-index,IEEE Access, Sensors and IEEE Transactions on Industrial Informatics, obtain the first 3 positions in the ranking. Figure 2 shows the pattern of the ongoing 8 years in the quantity of articles published from 2013 to 2020. It is seen that the quantity of articles published year on year are expanding, from 2016 sharp increment has been watched and in 2018highest number of articles publishedfollowed by a slight decrease in number.

Table 2. Top sources

Sources	**Articles**
IEEE Access	28
Sensors	18
IEEE Transactions On Industrial Informatics	15
International Journal Of Production Research	12
IEEE Internet Of Things Journal	11
International Journal Of Advanced Manufacturing Technology	9
International Journal Of Computer Integrated Manufacturing	9
Applied Sciences-Basel	8
IEEE Network	8
Computers in Industry	5
Business Process Management Journal	4

Computers & Industrial Engineering	4

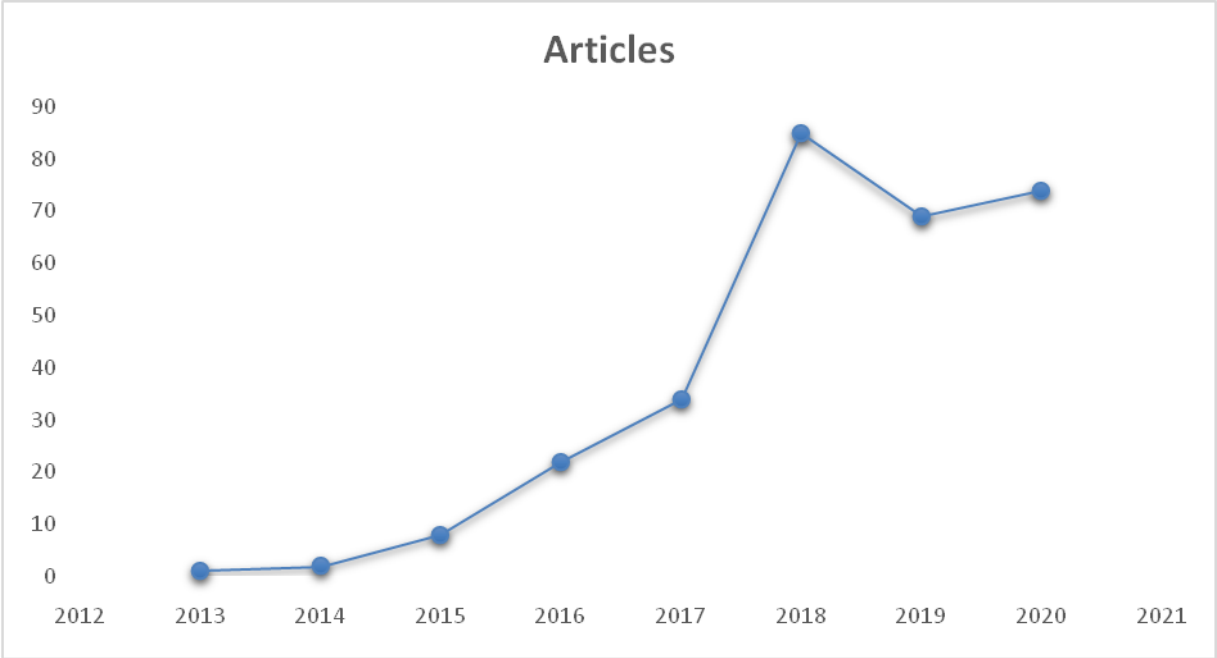

Figure2. Year-wise trend of publications

Table 3 gives quantitative details of the top sources and its impact. In any case, by looking at the impact factor, a few different journals are ranked more exceptionally. We find that the ranking found with the H-index gets results like other ranking records. The g-index is determined dependent on the dispersion of references got by a given analyst's publications, IEEE Access, IEEE Transactions on Industrial Informatics, and International Journal of Production Research are the best three sources having top g-list. The m-index is ratio of h to the number of articles published since start.

Table 3. Top sources impact

Source	**h_index**	**g_index**	**m_index**	**TC**	**NP**	**PY_start**
IEEE Access	9	19	1.5	370	28	2015
Sensors	5	10	0.83	115	18	2015
IEEE Transactions on Industrial Informatics	9	15	1.8	331	15	2016
International Journal of Production Research	7	12	1.4	300	12	2016
IEEE Internet of Things Journal	4	10	1.33	114	11	2018
International Journal of Advanced Manufacturing Technology	2	3	0.66	11	9	2018
International Journal of Computer Integrated Manufacturing	7	9	1.16	309	9	2015
Applied Sciences-Basel	3	4	0.75	18	8	2017
IEEE Network	3	4	1	22	8	2018
Computers In Industry	4	5	1	293	5	2017

Source impact, top sources, and its dynamics help to understand what is a trend in topic internet of things applications of manufacturing, how much is the impact of the sources on this topic, how the articles increasing and more and more study is going on in the applications part of IoT in different manufacturing sectors, companies.

Figure 3 shows the trend of the top 5 sources IEEE Access, IEEE Internet of Things Journal, Sensors, IEEE Transactions on Industrial Informatics, International Journal of Production Research. The trend for each of the sources from 2013 till 2020 is shown to understand the growth of the research articles on the topic of the internet of things application in the respective sources year on year.Figure 3 gives the Source Dynamics for the top 5 sources, which gives information about the trend of sources from 2013 to 2020, how the number of articles is increasing/decreasing for the topic of the internet of things applications in the field of manufacturing. IEEE Access, IEEE Internet of Things Journal, Sensors, IEEE Transactions On Industrial Informatics, International Journal of Production Research are the top 5 sources having the highest h, g, and m index.

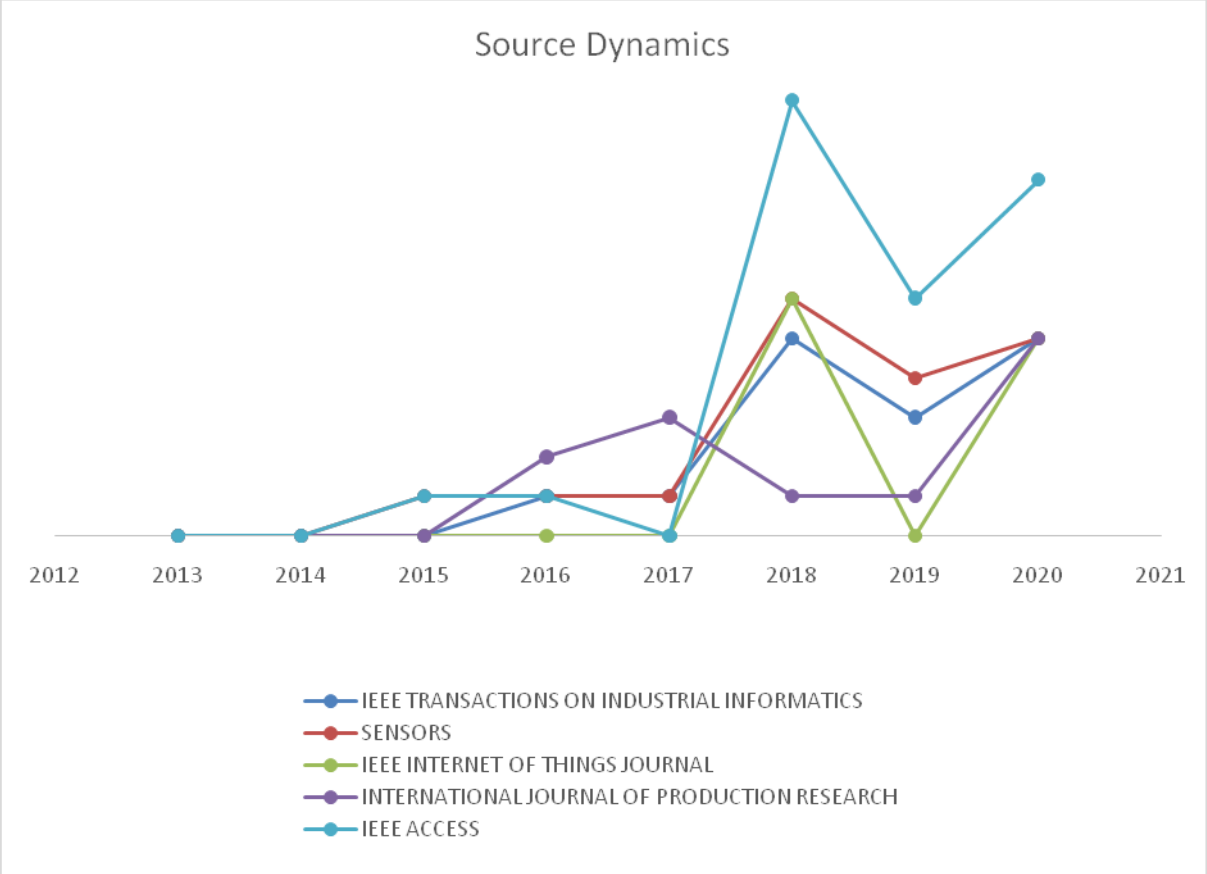

Figure3. Source dynamics

2.2. Authors Impact

The author's impact is similar to the impact of the source, it gives the quantitative measures based on the h, g, and m index of the authors. The g-index is determined dependent on the appropriation of references got by a given scientist's distributions. Table 4 gives the analysis of the top 14 authors and the impact measurement criteria for them in the research area of IoT applications in the field of manufacturing. It gives the current trend and helps to understand the scope for improvement in this field in terms of qualitative aspects of the authors in this research domain. PY start is the publication year start of that particular other and TC is the total citation. Li D, Wan JF, Imran M, Tao F, and Liu Y are the top 4 impactful authors having the highest h-index as well as g index.

Table 4. Authors impact

Author	h_index	g_index	m_index	TC	NP	PY_start
Li D	7	9	1.4	711	9	2016
Wan Jf	6	9	1.2	808	9	2016
Imran M	3	6	1	127	6	2018
Tao F	5	6	1.25	349	6	2017
Liu Y	4	5	0.8	157	5	2016

Voigt Ki	4	5	0.8	252	5	2016
Arnold C	3	4	0.6	158	4	2016
Huang Gq	3	4	0.5	164	4	2015
Kiel D	4	4	0.8	249	4	2016
Kim H	4	4	0.8	318	4	2016
Liu Cl	4	4	1	135	4	2017
Zhang Yf	4	4	1	118	4	2017
Chen Bt	3	3	1	164	3	2018
Chen X	2	2	1	8	3	2019

It is observed that most of the impactful authors on these topics have started publications around the year 2016 and it is increasing after that. Likewise, the quantitative analysis for the top 14 authors is given in the above table on the articles related to the internet of things applications in the field of manufacturing. Further, if required detail analysis of top impactful authors with respect to country, quantitative score, affiliations, qualifications can also be done to in-depth analysis of the author's impact and trend in that respective topic.

Figure 4 shows the most relevant countries by authors, which providesan idea on how many authors are from a particular country amongst the given authors of thearticles. 83 articles from authors from China, 30 from the USA, German authors contributed to 21 and 19 articles from Korea. These are the 4 major countries contributing to 51% of articles. Apart from these top 4 countries, we can see the increasing trend in European countries the research domain of the IoT application, though china is a major cluster when it comes to the author other Asian countries like Korea, India Brazil are also increasinglycontributing to the field of IoT application in manufacturing.

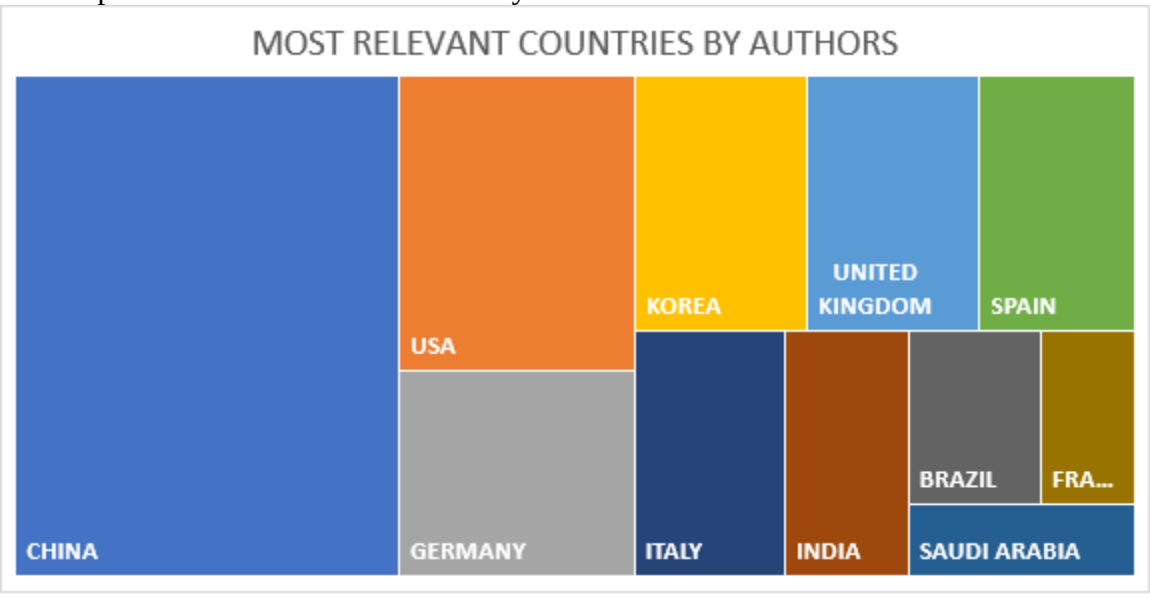

Figure 4. Most relevant countries by Authors

2.3. Key Word Analysis

Keyword analysis gives the idea about the most frequently used words in the 299 articles on the topic of the internet of things applications in the field of manufacturing. Internet, systems, things, management, architecture, design, model, system, framework, big data, challenges, optimization, networks, performance, future, technology, cyber-physical systems, analytics, etc. are the most frequent used words based on ascending order of the frequency of the word(Figure 5). It helps in understanding what are the major areas, technology, or other aspects of management, the authors and articles have coveredin this field of research. Keyword analysis helps to understand the subtopics and themes under the research area of IoT applications in the manufacturing field on the Web of Science database.

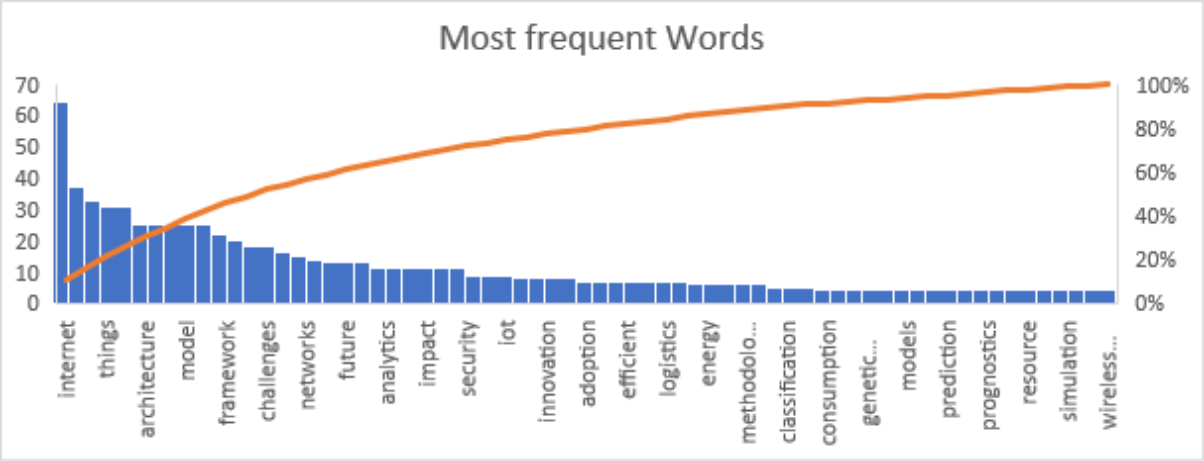

Figure 5. Most frequent words

Figure 6 is the word cloud which gives the pictorial representation of the words based on the frequency of the word, higher the font size higher is the frequency of that word in the articles and likewise, to the lower font, it represents lower frequency. Internet, systems, big data, management, framework, optimizations, architecture are some of the most frequent words as per the word cloud. It helps to understand what are the major area, technology, field, management aspect overall all the authors and articles have cover under the research on the internet of things applications in the field.

Figure6. Keyword cloud

2.4. Citation Analysis

Citations analysis include analysis of the number of citations from 2013 till 2020 , fig shows the increasing trend in number of citations per year , though there was slight decrease followed by the increase in the number again from 2019 .Bibliometric analysis showed the most cited sources in the study of 299 articles in the study for internet of things applications in the field of manufacturing, it is observed that IEE IND INFORM , IEEE ACCESS , INT J PROD RES and PROC CRIP are the top sources with highest citations for different articles.

Table 5. Citation sources

Sources	Articles
IEEE T IND INFORM	401
IEEE ACCESS	240
INT J PROD RES	209
PROC CIRP	186
IEEE INTERNET THINGS	148
INT J ADV MANUF TECH	144

J CLEAN PROD	132
COMPUT IND	131
SENSORS-BASEL	129
IEEE COMMUN MAG	128
INT J PROD ECON	117
LECT NOTES COMPUT SC	115
J IND INF INTEGR	105
ROBOT CIM-INT MANUF	105
COMPUT NETW	95
CIRP ANN-MANUF TECHN	89
J MANUF SYST	87

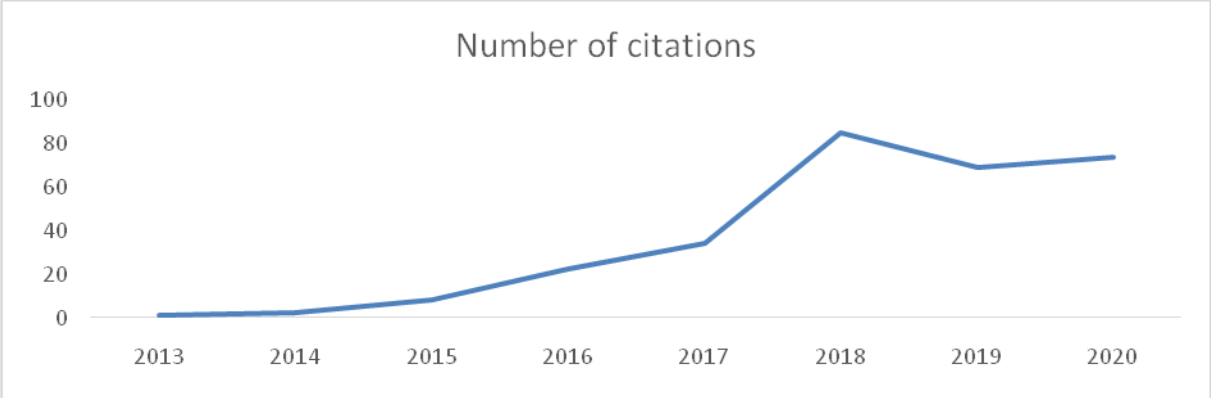

Figure7. Year wise citation

Figure 7 shows the trend of number of citations per year since 2013 to 2020, which shows a continuous increase in the publications for the period.Bibliometric analysis also gives the data of the citations from authors from countries across world, it helps to understand the number of citations, average citations for that country. China, Germany, USA and Korea are top contributing countries. Table shows the top14 countries, total citations and average article citations.Citation analysis is done using the R studio and the cluster analysis is done using VOS viewer, combined together gives us the overall citation analysis for the given dataset of literature on the research topic of internet of things application in the field of manufacturing.

Table 6. Country-wise citations

Country	**Total Citations**	**Average Article Citations**
China	1861	22.42
Germany	799	38.05
USA	527	17.57
Korea	438	23.05
United Kingdom	326	17.16
Switzerland	259	259.00
Italy	141	8.81
Spain	140	8.24
Brazil	122	12.20
Chile	122	61.00
France	103	14.71
New Zealand	101	101.00
Saudi Arabia	86	12.29
India	85	6.54

In citation analysis, a study of the quality of an article, an investigation of the nature of an article,

a writer, or an establishment is finished. In light of the occasions the article or potentially writers have been referred to, they are characterized into a few clusters. Citation analysis is performed to find the impact an article or author or institution had on another author to include it in their article or cite it. VOS-viewer tool was used for citation network analysis. While creating a network map, 'citation' was chosen as an analysis type and 'documents' as the unit of analysis. Only the articles that have a minimum of 10 citations were considered for citation analysis. Out of the 299 articles, 98 articles met the threshold and were taken forward for analysis. Of the 98 articles selected, only 44 articles were connected. Fig. 8 shows the network map consisting of only 44 articles being divided into 8 clusters depending upon their closeness with other articles. Only five clusters are further analysed. On the left side of the Figure 8 clusters were analysed based on the above-mentioned criteria.

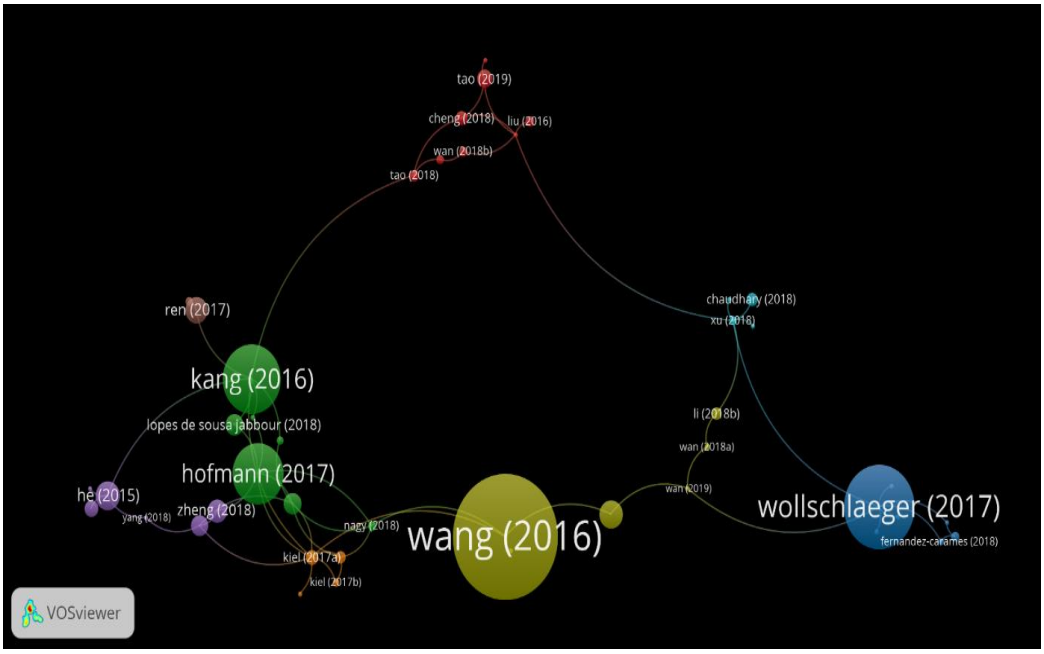

Figure8. Citation cluster analysis

2.5. Co-Citation Analysis

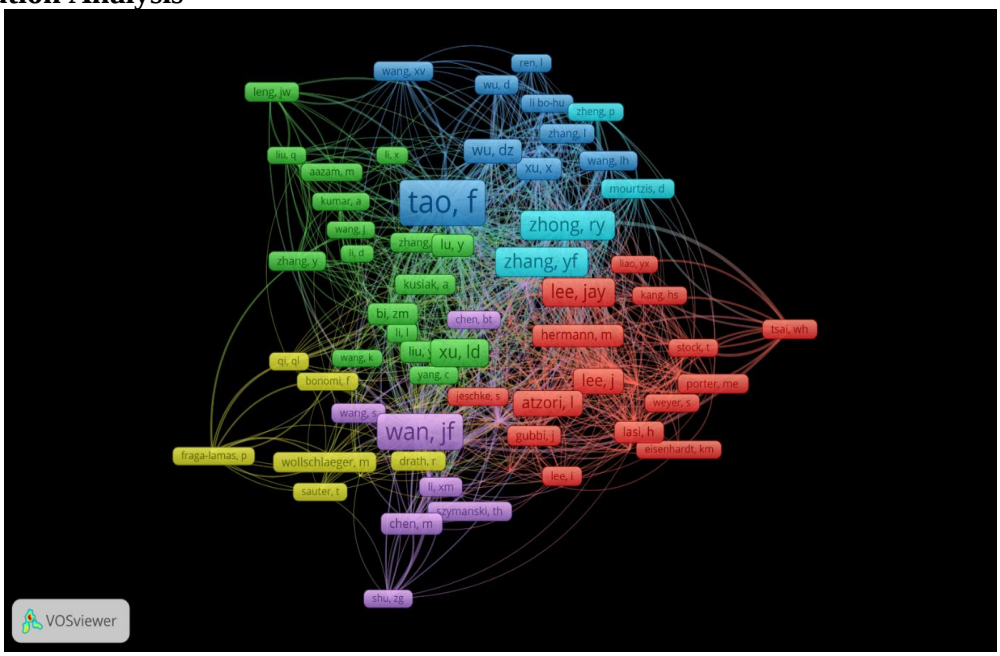

Figure9. Co-citation analysis

Figure 9 represents the Co-citation analysis, like Bibliographic Coupling, is a semantic closeness measure for records that utilizes reference connections. Co-reference is characterized as the recurrence with which two archives are referred to together by different records. Co-reference

examination includes ordering the logical writing into little gatherings of papers that compare to explicit issues. VOS-viewer tool was used for Co-citation network analysis. While creating a network map, 'Co-citation' was chosen as an analysis type and 'documents' as the unit of analysis. Only the articles that have a minimum of 10 citations were considered for citation analysis. Out of the 9967 articles, 83 authors met the threshold and were taken forward for analysis. Only one cluster is found for analysis.

2.6. Author Affiliations

The top 14 affiliations contributing to the field are as mentioned in Table 7 below. For each affiliation across the globe, the number of publications was analysed. Further,a detailed analysis of university rank, author, author impact from that university can be conducted to gain an in-depth understanding of the affiliation and its contribution. One can go beyond the affiliations to link the world rankings, countries to it to understand the global trends in this field and the top contributors. South China University of Technology with a contribution of about 4% i.e. 12 articles in this domain, the north western polytechnical university is contributing to about 3% of the articles i.e.3 articles, Shanghai JiaoTong University, and King Saud University are among the top 4 affiliations.

Table 7. Top affiliation

Affiliations	**Articles**
South China University Technology	12
North Western Polytech University	10
Shanghai Jiao Tong University	9
King Saud University	8
Beihang University	7
Guangdong University Technology	6
UniversityPolitecn Valencia	6
Beijing Jiaotong University	5
City University Hong Kong	5
SungKyunKwan University	5
Cranffeld University	4
Nanyang Technology University	4
Penn State University	4
SP Jain School of Global Management	4

2.7. Co-word Analysis

Co-word analysis is a bibliometric strategy used to recognize the fundamental topics. This permits us to measure and visualize the topical development of the IoT application in the field of assembling. It additionally serves to the two specialists and amateurs to comprehend the present status of the IoT applications use in assembling and to anticipate where future examination could lead. Figure9 gives top themes in the bibliometric analysis on the topic of the internet of things applications in the field of manufacturing. Information technology, adaptation, supply chain, optimization, industry 4.0, big data, prediction models, internet are major themes in the literature analysis. Cluster, betweenness, and closeness in the theme give the relations between themes and closeness value and based on similarity themes are divided into clusters.

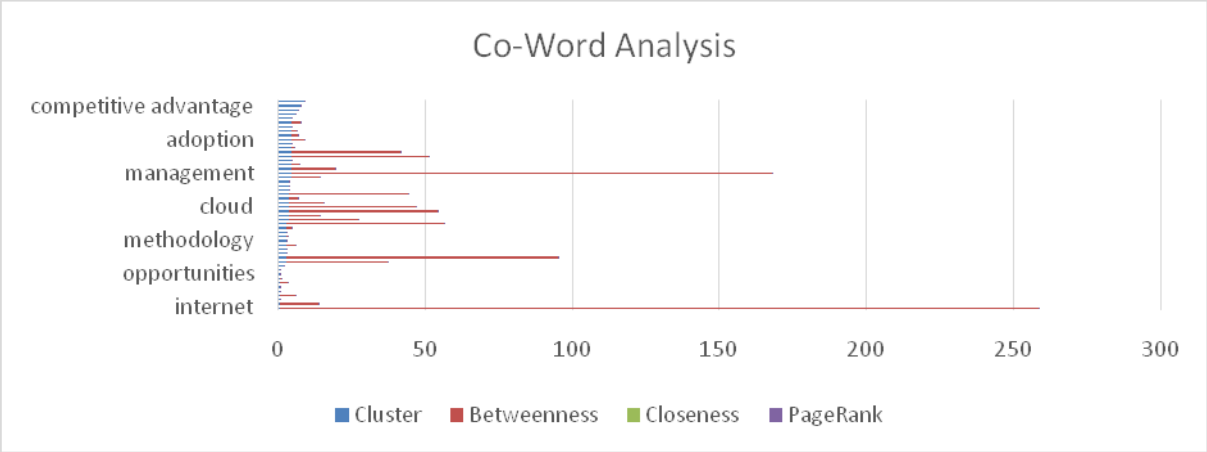

Fig 10. Co word analysis

The co-word analysis helps in the clustering and giving a quantitative relationship between top themes in the research work on the topic. Co-Word Analysis is done in biblioshiny in R studio, there is another software available like VOS viewer which also can be used to do the Co-word analysis.

3. Conclusion and Future Research Directions

This paper introduced an organized audit of the Internet of things application in the assembling field writing. There have been several papers distributed here, a large number of them in the previous years. Albeit a couple of writing surveys on IoT and Industrial IoT have been distributed, an intensive bibliometric and organization examination to diagnostically and impartially distinguish compelling works and writers and developing exploration groups have not been finished. This central exertion shows a progression of the persuading articles and adds to the field by further organizing the relationship among the higher effect works. Our revelations see that there is an overall centralization of the more remarkable works among a small bunch of scientists.However, as the field keeps on developing, numerous extra creators have joined this sub-order of the internet of things growing the work in an assortment of territories. A considerable lot of the more compelling papers appeared to have happened in the last 5-6 years. This outcome isn't unexpected since it was around this period that the thoroughness of the exploration began to increment. The as of late distributed works, inside the last 3–4 years, have not gotten an opportunity to pick up as much foothold since references presently can't seem to collect, given that administration and business research normally requires a more extended chance to manufacture references. The geographic scattering of the works showed that China, however with exceptionally powerful distributions, appeared to have the best number of works, with USA Next to it. The dispersion of the work into other Asian nations and Europe is additionally beginning to happen.

Thispaper summaries of the new exploration sub-themes identified with IoT applications in manufacturing field. These rundowns ought to give a strong premise to propelling research in these spaces. The advancement of the internet of things to the modern internet of things writing in the business space shows an unmistakable example. To begin with, the decent variety of themes and sub-points tended to by researchers identified with the internet of things emergency is exponentially expanding from 2013 to date, showing that exploration on the applications over the various topographies is expanding(Bai, 2018; Contreras et al., 2017; Zhu et al., 2020). The effect of the IoT particularly in the field of the mechanical area has demonstrated the huge positive effect on the organizations is consistently pulling in specialists, who are welcoming new points of view on research. Second, while the assorted variety of exploration territories is expanding, a couple of wide examination sub-points are developing all the more fundamentally. These centre themes incorporate IIOT in the field of flexibly chain the executives(Ardanza et al., 2019), coordination's, straightforwardness, quality administration, advancement, administration industry, and work. Accordingly, the bibliometric aftereffects of this examination give proof that the internet of things application is step by step

developing as a talk in the assembling industry region. The recognized theme points fill in as pathways for experts and academicians meaning to direct future examination. This bibliometric study uncovered that over the most recent 8 years 299 extraordinary archives were distributed in Web of Science from 137 distinct diaries, 458 unique establishments, and 45 unique nations. The discoveries distinguish the most dynamic creators and subareas of examination on business viewpoints identified with the Internet of things applications in the field of manufacturing domain.(Romeo et al., 2020). Subsequently, this investigation has distinguished potential information areas in the field of business and the board of assembling. Finally, co-word examination dependent on Keywords gave bits of knowledge into the principle research subjects/sub-zones identified with the effect of IoT applications in manufacturing(Bai, 2018). This assessment is an early undertaking to increment recognizing pieces of information into the insightful structure of the Industrial Internet of things applications research in the field of manufacturing business using bibliometric examination. The revelations of this examination supplement existing unique and evaluative composing reviews on IoT applications in collecting research. Journals covered in the Web of Science data bases are disseminated and assessed each year to ensure their high bore. This examination utilized extraordinarily on these data bases to assemble data, anyway the nonappearance of changed data bases, like Google Scholar, EBSCO, and PubMed, may have influenced the data depiction. Likewise, future examinations need to adequately cover these data bases to accumulate more comprehensive data and evade inclination.

Acknowledgments

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