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# A bibliometric analysis of Journal of Advances in Library and Information Science (JALIS) from 2016-2020: an international online journal

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# A bibliometric analysis of Journal of Advances in Library and Information Science (JALIS) from 2016-2020: an international online journal

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**Abstract**

The study analyses papers published in Journal of Advances in Library and Information Science (JALIS) using bibliometric techniques for the period of 2016 to 2020 (5 years). The study examines that, publication growth, degree of collaboration, authorship pattern of the articles and reference distribution. The study has analysed that the highest number of articles was published during the year of 2017 followed by 2016. The degree of collaboration ranges from 0.70 to 0.78 and its mean value is 0.74. The findings indicate that a total of 431 authors produced 243 articles with an average of 0.53 percentage of per author and majority of articles published by joint authors. Subject analysis showed that Bibliometrics/Scientometrics and Electronic Resources occupied top position having maximum contributed papers.

**Keywords:** Bibliometrics, authorship pattern, degree of collaboration, research articles, length of pages and references

## 1. Introduction

The field of library and information science (LIS) has developed several quantitative methods to study the various aspects of subjects. The metrics of LIS are continuously increasing, starting from librametrics, bibliometrics, scientometrics, informetrics, webometrics, netometrics to cybermetrics (Khan, 2016). Bibliometrics involves the use of statistical tools and techniques for analysing the published literature in a discipline. The term "Bibliometrics" was first used by Alan Pritchard in a paper published in 1969, titled "Statistical Bibliography or Bibliometrics?." He defined the term as "the application of mathematics and statistical methods to books and other media of communication". Also, Potter (1981) has defined "Bibliometrics is, simply put, the study and measurement of the publication patterns of all forms of written communication and their authors. Primary journals are a vital source of information and are considered as the main vehicle for disseminating research results and information about new ideas in a discipline and it also help for the in-depth study of a subject in its totality and are the indicators of literature

growth in any field of knowledge (Garg, Lamba & Singh, 2020). In the present paper depicts that scholarly communication to the Journal of Advances in Library and Information Science (JALIS) during 2016-2020. JALIS is an International peer reviewed online journal in Library and Information Science since 2012 on the Quarterly basis. JALIS has covered most of the professional areas in LIS with a good number of issues dedicated to topics like mapping of global research, performance in e-resources, Information and communication technology, Institutional repositories and much more (Source: http://jalis.in/index.html) and the Journal also covers technology and interdisciplinary research. The present study was attempt to analyse publication distribution in the journal namely; Journal of Advances in Library and Information Science (JALIS) for the period 2016-2020. In this paper examines year-wise, Subject-wise, degree of collaboration among authors, authorship pattern and length of the articles. In the present study proceeds as follows: Section 2 discusses the literature study, Section 3 presents Objectives of the study, Section 4 exhibits methodology and data, Section 5 presents the data analysis and Section 6 highlights the findings and conclusions.

**2. Literature Review**

During the last few decades, many articles have addressed the bibliometric aspects of journals in many fields across the world. Some of the particular studies are; Koley & Sen (2003); Young (2006); Davarpanah, & Aslekia (2008); Narang & Kumar (2010); Thavamani (2013); Autor (2012); Singh (2013); Ramasamy (2017); Mondal & Jana (2018); Vishwakarma & Mukherjee (2019); Karkeea & Sinha (2020); Sab et, al., (2020) and Donthu, Kumar & Pattnaik (2020).

According to **Ratten, et al.,** studied the Journal of Family Business Management. It has published 158 articles published in the journal with 659 total citations. United States and the United Kingdom are the most productive countries followed by countries in Europe including Germany, Spain, Austria and Sweden. Also, he examined the ranking of authors, Index and degree of collaboration amongst the authors, most productive institutions and countries, prolific authors and most cited journals, etc.

**Vellaichamy & Jeyshankar** investigated that a total of 158 papers were published in the Journal of Webology from 2004-2013. The degree of collaboration ranges from 0.182 to 0.693 and its mean value is found to be 0.44. Web analysis (24.68 %) and social media (15.82 %) papers are the top most publications in subject-wise analysis. India has contributed more number of articles compared to any other countries such as Iran, UK, USA and Australia.

**Martinez-Lopez, et al.,** examined most cited documents, most productive authors and journals, most productive and influential institutions, most productive and influential countries, bibliographic coupling of institutions and countries, most cited journals and citations earned by the articles of e European Journal of Marketing.

**Hajam** examined authorship pattern, institution-wise distribution of articles, geographical distribution of articles, volume-wise average length of articles in terms of pages, volume-wise average citations per articles of Journal of Social Work.

.**Raza and Malik** analysed bibliometric analysis of the journal of knowledge management during the period 2009-2016. A total of 1214 authors from 57 countries and 584 institutions published 508 papers in the journal from 2009 to 2016. A contribution from USA and the UK got first and second rank in five indicators. Australia was ranked 3rd in total articles and collaborative articles, while it got 4th rank in single country articles and corresponding author articles. Although India was ranked 9thin terms of total articles, but its single country articles percentage is highest among all the top 10 countries.

**Vellaichamy & Esakkimuthu** carried out bibliometric analysis of the International Journal of Robotics Research during the period 2010-2019. A total of 983 publications were published and it is observed that degree of collaboration ranges from 0.92 to 0.99 and its mean value is found to be 0.97. The study concluded that the maximum number of articles was published in 2019 and the maximum number of contributions has the length of 16-20 pages, and majority of the authors preferred to publish their research in the form of Articles.

**Donthu, Kumar and Pattnaik** conducted 45 years bibliometric analysis of the journal of business research. They have noted that, Michel Laroche and Jean-Charles Chebat have the most JBR publications, with 39 articles each, followed by Arch G. Woodside, with 30. Among the authors' affiliated countries, the United States (4810) and the United Kingdom (2817) are the highest in JBR publications. Also, they examined co-authorship and bibliographic couplings of authors and their affiliated institutions and countries, co-citations of journals, and co-occurrence of author-specified keywords.

**Garg, Lamba and Singh** examined the pattern of growth, geographical distribution of the articles; identified the prolific authors & institutions, and their output; and the pattern of citations of the papers and identified most cited authors. The study noted that, highest number of articles was published during 2012-2015 followed by 2016-2019. Indian authors published the highest percentage (86.1 %) of articles followed by USA and had the highest value of CPP and RCI.

**Vellaichamy & Jeyshankar** studied the Journal of Ornithology from 2000-2015. A total of 1353 articles were published and Germany produced 26.53%, USA 15.52% and UK 10.94% of the articles in total output. Also, they examined authorship pattern, degree of collaboration, form of documents, language output, most productive authors and geographical distribution of articles, most prolific authors and institutions, etc.

**Sujatha and Padmini** studied the journal of IEEE Transactions on Antennas and Propagation. It has published 3442 papers during 2010-2014 with maximum number of 789 articles in 2014 and an average of 688 papers per year. They have noted that, 3442 articles were contributed by 86 countries with a maximum number of 57 countries in the year 2013 and most of the contributions (921) are from USA followed by China (572); India stands in the 21st position with 52 articles.

The review of literature indicates that, the above mentioned studies have analysed data that publication pattern of various journals. Although, Verma and Shukla conducted a bibliometric study on research publications trends in the journal of advances in library and information science (JALIS) during 2012-2016, they did not use subject analysis, degree of collaboration among authors. Thus, the present study is an expansion of the above mentioned study period from 2016 to 2020.

## 3. Objectives

The study has been designed with the following objectives with respect to bibliometric indicators as reflected in Journal of Advances in Library and Information Science (JALIS) during 2016-2020. The study was undertaken with an aim to analyse the trends in published research

1. Study the publication output
2. Subject-wise research output
3. Study the Pattern of authorship
4. Find out the Collaboration pattern
5. Examine the length of articles and
6. Examine the references distribution by the articles

## 4. Methods and Data

A bibliometric method originates from research in the library and information sciences that involve large volume of bibliographic materials (Broadus, 1987; Pritchard, 1969). Precisely, bibliometric studies analyse and classify bibliographic material by framing representative summaries of the extant literature. The study is based on the bibliometric analysis which is used to detail of the articles published in the Journal of Advances in Library and Information Science (JALIS) for the period of five years (2016 -2020) and the data was collected from the website (www.jalis.in). A total of 243 publications in 5 volumes were found from the website and the data was analysed by using MS-Excel. The analysis categorized in to publication outputs, subject-wise analysis, degree of collaboration, authorship pattern, reference distribution and length of articles.

## 5. Data Analysis

### Volume-wise distribution of articles

Table 1 & Figure 1 show the year-wise publication growth of JALIS. Totally, 243 research publications were published during the period 2016-2020. The analysis shows the upward trend for the periods from 2016-2017, and also 2018 onwards decreasing trend up to 2020. The last three years (2018, 2019 and 2020) research productivity is to very low compared to previous years. It is observed from the table, majority of the publications are produced in the year of 2017 and lowest productivity in the year 2020. Also, the highest number (67 & 66) publications were retrieved from Issue No. 1 & Issue No.4 when compared to issue no. 2 & 3.

**Table-1: Volume-wise distribution of articles**

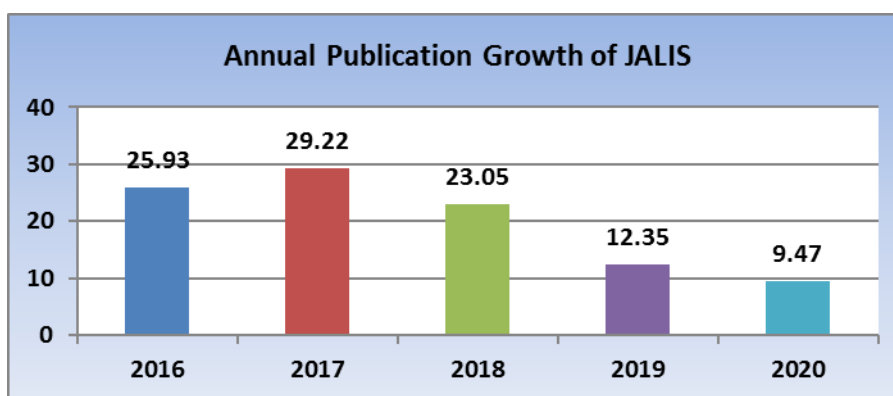| Year | Vol. No | Issues | Issue no.1 | Issue no.2 | Issue no.3 | Issue no.4 | Total Pub. (%) | Average Articles per Issue |
|------|---------|--------|------------|------------|------------|------------|----------------|----------------------------|
| 2016 | 5 | 4 | 17 | 15 | 14 | 17 | 63 (**25.93**) | 15.75 |
| 2017 | 6 | 4 | 15 | 14 | 18 | 24 | 71 (**29.22**) | 17.75 |
| 2018 | 7 | 4 | 25 | 14 | 7 | 10 | 56 (**23.05**) | 14 |
| 2019 | 8 | 4 | 6 | 8 | 8 | 8 | 30 (**12.35**) | 7.5 |
| 2020 | 9 | 4 | 4 | 5 | 7 | 7 | 23 (**9.47**) | 5.75 |
| **Total** | | **20** | **67** | **56** | **54** | **66** | **243 (100)** | **12.15** |

Figure 1: Publication growth of JALIS

**Subject-wise classification of articles**

It is observed from the table 2, majority of the publication subjects appeared under Scientometric/Bibliometric 79 (32.51%) followed by Electronic Resources (n=44, 18.11%), Information seeking behaviour (n=26, 10.70%), ICT (n=25, 10.29%), Social media (n=15, 6.17%), Library Collection/Services (n=14, 5.76%) and Information/Computer Literacy (n=12, 4.94%) . Other subject papers are contributed less than ten publications.

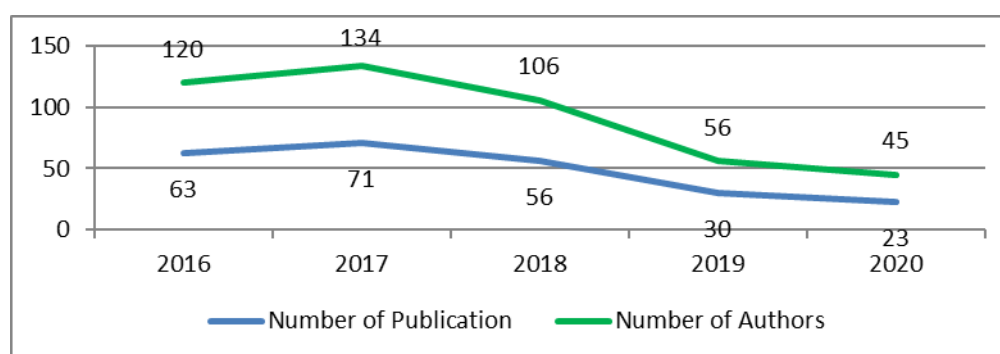**Table-2: Subject-wise distribution of research output**

| Subject | Year of Publications | | | | | Total Publications (%) |
|---|---|---|---|---|---|---|
| | **2016** | **2017** | **2018** | **2019** | **2020** | |
| Electronic Resources | 10 | 14 | 12 | 5 | 3 | 44 (18.11%) |
| ICT | 7 | 7 | 6 | 3 | 2 | 25 (10.29%) |
| Information/Computer Literacy | 3 | 4 | 4 | 1 | 0 | 12 (4.94%) |
| Information seeking behaviour | 4 | 8 | 4 | 6 | 4 | 26 (10.70%) |
| Institutional Repositories | 2 | 5 | 1 | 0 | 1 | 9 (3.70%) |
| Job satisfaction | 3 | 0 | 2 | 0 | 0 | 5 (2.06%) |
| Library Collection/Services | 6 | 0 | 1 | 2 | 5 | 14 (5.76%) |
| Public Libraries | 0 | 2 | 1 | 1 | 2 | 6 (2.47%) |
| Scientometric/Bibliometric | 18 | 26 | 22 | 8 | 5 | 79 (32.51%) |
| Social Media | 6 | 3 | 3 | 2 | 1 | 15 (6.17%) |
| Webometrics | 4 | 2 | 0 | 2 | 0 | 8 (3.29%) |
| **Total** | **63** | **71** | **56** | **30** | **23** | **243 (100%)** |

**Author Productivity**

Table 3 and figure 2 show the author productivity of research articles published in the Journal of Advances in Library and Information Science from 2016 to 2020. The highest number of average publications per authors was (0.54) in the year 2019. The analysis determined that a total of 431 authors produced 243 with an average of 0.53 per authors.

**Table-3: Author Productivity**

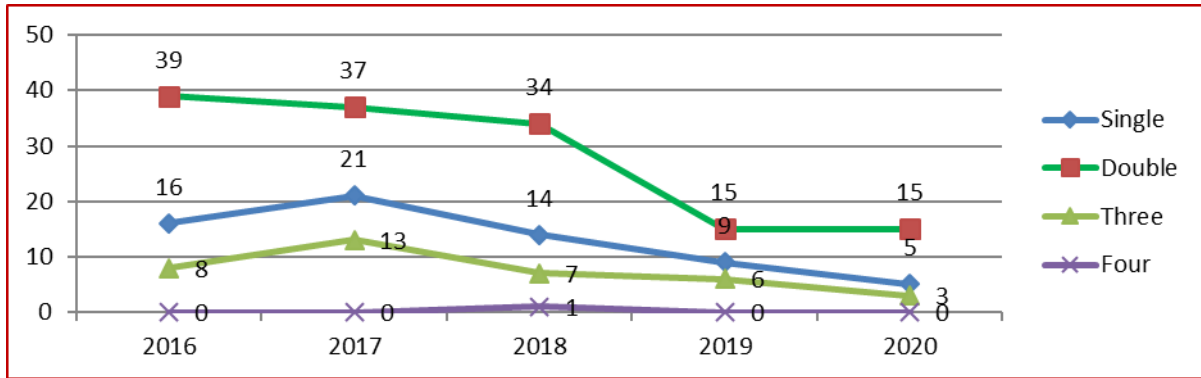| Year of Publication | Number of Publication | Number of Authors | Average Publication Per Author |
|---|---|---|---|
| 2016 | 63 | 120 | 0.53 |
| 2017 | 71 | 134 | 0.53 |
| 2018 | 56 | 106 | 0.53 |
| 2019 | 30 | 56 | 0.54 |
| 2020 | 23 | 45 | 0.51 |
| **Total** | **243** | **461** | **0.53** |



**Figure-2: Author Productivity**

## Pattern of Authorship

Co-authorship reveals the authorship pattern and connectivity among the collaborating authors (Koseoglu, 2016; Peters & Van Raan, 1991). Table 4 & Figure 3 shows the year wise authorship pattern of articles. It exhibits that highest number of articles (140) published in double authors, followed by single author (65) and three authors (38). It also found that authors have published more collaborative articles (73.25%) than single authored (26.75%) publications. It means researchers are more interested in doing collaborative research work than independently.

**Table-4: Authorship Pattern**

| Sl. No | Authors | Publication Years | | | | | Total | % age |
|---|---|---|---|---|---|---|---|---|
| | | 2016 | 2017 | 2018 | 2019 | 2020 | | |
| 1 | Single | 16 | 21 | 14 | 9 | 5 | **65** | 26.75 |
| 2 | Double | 39 | 37 | 34 | 15 | 15 | **140** | 57.61 |
| 3 | Three | 8 | 13 | 7 | 6 | 3 | **37** | 15.23 |
| 4 | Four | 0 | 0 | 1 | 0 | 0 | **01** | 0.41 |
| | Total | 63 | 71 | 57 | 30 | 23 | **243** | 100 |

**Figure-3: Authorship Pattern**

## Degree of Collaboration

Table 5 shows the degree of collaboration of publication published in JALIS from (2016-2020). To calculate the degree of collaboration among authors, the formula given by Subramanian (1983) is used which is expressed mathematically as:

$$DC = \frac{Nm}{Nm + Ns}$$

Where,

DC = Degree of Collaboration,

Nm = Multiple Authored Publications

Ns = Single Authored Publications

The result clearly shows that the average of the degree of authors collaboration in the particular journal is 0.74, which is show that the growing tendency of collaborative research in JALIS. In 2020 the degree of collaboration is 0.78 which is highest; while in the year 2017 & 2019 degree of collaboration was 0.70, which is lowest.

**Table-5: Degree of Collaboration among authors**

| Sl. No | Year | Single Authored (NS) | Multi Authored (NM) | Total (NS+NM) | DC |
|--------|------|----------------------|---------------------|---------------|----|
| 1 | 2016 | 16 | 47 | 63 | 0.75 |
| 2 | 2017 | 21 | 50 | 71 | 0.70 |
| 3 | 2018 | 14 | 42 | 56 | 0.75 |
| 4 | 2019 | 9 | 21 | 30 | 0.70 |
| 5 | 2020 | 5 | 18 | 23 | 0.78 |
| **Total** | | **65** | **178** | **243** | **MV = 0.74** |

**Publication Size**

The research document has been categorized into different ranges right from 3 to 10 pages category and the last category is marked as "more than 10 pages". It is clear from Table 6 that out of 243 papers, a majority of 117 (48.15%) papers published in 5-6 pages, followed by 67 (27.57%) papers on 6-8, 30 papers published in 3–4 pages, 21 papers published in 9-10 pages and 8 (3.29%) papers published in more than ten pages. The analysis clearly shows that majority of authors were published their research papers in 5-6 pages.

**Table-6: Length of Pages**

| Sl. No | Size of publication in Pages | Publications | % age | Cumulative % age |
|--------|------------------------------|--------------|-------|------------------|
| 1 | Three-Four | 30 | 12.35 | 12.35 |
| 2 | Five-Six | 117 | 48.15 | 60.50 |
| 3 | Seven-Eight | 67 | 27.57 | 88.07 |
| 4 | Nine-Ten | 21 | 8.64 | 96.71 |
| 5 | Above Ten | 8 | 3.29 | 100.00 |
| **Total** | | **243** | **100.00** | |

**Reference distribution pattern**

Table 7 shows the distribution pattern of reference in the Journal of Advances in Library and Information Science during the period (2016-2020). The most striking feature of JALIS had been that it possessed a clearly high percentage of articles with references. In 243 articles which appeared in the particular journal during the period of present study, 2259 contains references. The highest number of references were cited in the year 2016 in which 721, constituting (31.92%) references. And the lowest was in the year 2020 with 184, constituting 8.01%) references.
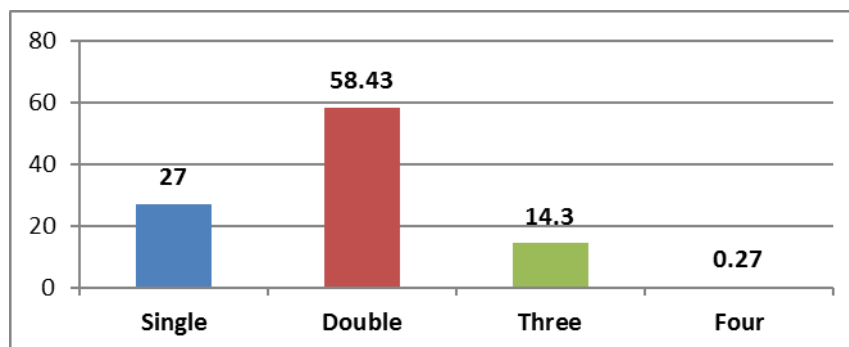
**Table-7: Reference distribution pattern**

| Year | Volume No. | No. of Articles | No. of references (Issue wise) | | | | Total References (%) | Cumulative References (%) | Average Ref. Per Article |
|------|-----------|-----------------|--------|--------|--------|--------|-----------------------|---------------------------|--------------------------|
| | | | Issue no.1 | Issue no.2 | Issue no.3 | Issue no.4 | | | |
| 2016 | 5 | 63 | 232 | 184 | 170 | 135 | **721** (31.92) | **721** (31.92) | **11.44** |
| 2017 | 6 | 71 | 125 | 106 | 133 | 251 | **615** (27.22) | **1336** (59.14) | **8.66** |
| 2018 | 7 | 56 | 207 | 109 | 63 | 109 | **488** (21.74) | **1824** (80.74) | **8.71** |
| 2019 | 8 | 30 | 75 | 57 | 56 | 63 | **251** (11.11) | **2075** (91.85) | **8.37** |
| 2020 | 9 | 23 | 36 | 33 | 71 | 44 | **184** (8.01) | **2259** (100) | **8.00** |
| **Total** | | **243** | **675** | **489** | **493** | **602** | **2259** | | **9.04** |

**Authorship Pattern of references**

Table 8 and figure 4 shows the authorship pattern of references for publication published in JALIS, it found that the total number of references were 2259. The maximum number of references was cited by a double author with 1320, constituting (58.43 followed by single authors 610, constituting (27.00%) references. 323, constituting (14.30%) references were cited by three authors. Also, the only one article was published by four authors constituting 6 (0.27%) references.

**Table-8: Authorship Pattern of references**

| Sl. No | Author type | No. of references in Issue-wise | | | | Total References (%) | Cumulative References (%) |
|---|---|---|---|---|---|---|---|
| | | Issue no.1 | Issue no.2 | Issue no.3 | Issue no.4 | | |
| 1. | Single | 161 | 136 | 102 | 211 | 610 (27.00) | 610 (27.00) |
| 2. | Double | 420 | 263 | 310 | 327 | 1320 (58.43) | 1930 (85.44) |
| 3. | Three | 88 | 90 | 81 | 64 | 323 (14.30) | 2253 (99.73) |
| 4. | Four | 6 | 0 | 0 | 0 | 6 (0.27) | 2259 (100) |
| **Total** | | **675** | **489** | **493** | **602** | **2259** | |



**Figure-4: Authorship Pattern of references**

## 7. Findings and Conclusion

This study analysed publication productivity of Journal of Advances in Library and Information Science (JALIS) during 2016-2020. The findings indicate that the flow of papers to the journal was high in the beginning, but it continuously decreased during the later years (2018, 2019 & 2020). There were a total of 243 numbers of papers published by 431 numbers of authors. The majority of the contributions published in the year 2017 with total no. 71 (29.92 %) of an article published by 134 authors. Furthermore, the data revealed that single authors published 65 (26.75 %), double authors published 140 (57.61 %), three authors published 37 (15.23 %), and four authors published 01 (0.41%) papers during the study period. Nearly, 2259 references were cited in 243 articles with 9.4, an average reference per

article in five years study of JALIS. In addition, the study found that the overall Degree of Collaboration (DC) for five years was 0.74, and the value of DC was maximum in the year 2020 with 0.78 and minimum in the year 2016 & 2019 with 0.70. Similarly, subject analysis exposed that Bibliometrics, Scientometrics and Electronic Resources research papers were mostly published in the five years study period. The other favourite areas of JALIS researchers were Information seeking behaviour which has always been one of the most studied areas. Information and Communication Technology has also been popular in view of its growing importance all over. Such studies evaluate the research giving a direction for new areas to be explored and the journal bibliometric studies helps to identify the research trends of a particular field of research.

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