**Library Waves**
**Volume 2, No. 2 (2016)**
**ISSN 2455-2291**

# Bibliometric Assessment of Scholarly Communications of Annals of Library and Information Studies (ALIS)

***Dr. Akhandanand Shukla and **NG Thermi Moyon**

*Assistant Professor, Deptt. of Library & Information Science, Mizoram University, Aizawl; Email: akhandanandshukla@gmail.com
**M.Phil Scholar, Deptt. of Library & Information Science, Mizoram University, Aizawl Email: ngthermi@gmail.com

***Abstract***

*Paper studies bibliometric analysis of Indian open access LIS journal "ALIS" for five years from 2011 to 2015. Total 173 published articles were examined and analyzed for distribution of articles, authorship pattern, degree of collaboration, and geographical distribution of articles. Inferences have been drawn from the analysis that journal prevalent two authorship patterns with 0.61 degree of collaboration, India as top most contributor of the articles for the journal and amongst foreign countries Nigeria is the highest contributor. New Delhi is the highest contributor amongst Indian States and Union Territories. Journal Articles were found most prevalent source of information for writing research papers and used as citation. Calculated half-life of the journal citations found to be more than 10 years.*

**Keywords:** Bibliometrics, Scholarly Communications, DOAJ, Degree of Collaboration, ALIS, Open Access.

## 1. Introduction

Annals of Library and Information Studies (ALIS) is a peer reviewed leading quarterly online journal in the field of Library and Information Science from India publishing original papers, survey reports, reviews, short communications, and letters pertaining to library science, information science and computer applications. ALIS is registered under Directory of Open Access Journals (DOAJ). It is a freely accessible scholarly journal committed to disseminate the intellectual efforts of academic community in the field of LIS. Open access scholarly journals are freely available and accessible over public Internet. Open access journal's users can read, download, copy, distribute and print without financial or technical barriers other than those inseparable from gaining access to the Internet itself. The Directory of Open Access Journals (DOAJ) is a peer reviewed directory of scholarly journals covering all areas of disciplines. Its aims are to be the one-stop shop for users of open access journals.

## 2. Literature Review

Gogoi & Barooah (2016) in their study revealed that papers from journals of Indian origin have greatly been used by the scholars and year-wise distribution of journals indicated that journal articles published during 2000-09 were highly preferred. Further they found that in the field of Chemistry, as a whole, researcher mostly cites works of 10-20 years old from recent; and collaborative works were more than individual works. Angammana & Jayatissa (2015) conducted a research on bibliometric analysis of PG dissertations of Library and

Information Science from the two universities of Sri Lanka for 11 years and found that books and journals were most used reference materials and half-life of all citations was almost 9 years whereas mean half-life for journals and books were 7 years and 13 years respectively. Awasthi & Jaiswal (2015) conducted a bibliometric survey on Library and Information Science (LIS) journals available under the umbrella of DOAJ. They found considerable increase in the archiving of LIS journals over the years. A maximum number of print journals and less number of online journals were archived in DOAJ. Further found that double blind peer-reviewed, blind peer-reviewed and peer-reviewed journals were openly accessible to the users. Wankhede et al. (2015) also conducted a bibliometric analysis of the Urban Library Journal on DOAJ and revealed that categories of article distributions were remarkable in this research journal. Majority of the articles were contributed by single authors and most of the authors were librarians, faculty members or researchers affiliated with academic or research institutions. Hajam (2014) examined Indian Journal of Clinical Bio-Chemistry from the year 2004-2013 and revealed that total number of contributions during the period of their study was 776 and it had 32 issues from volume number 19 to 28. Especially volume no. 23 had maximum number of contributions. Further he found that there were 19496 citations appended to 776 papers. Khillare & Khaparde (2014) investigated 48 open access online journals on Microbiology available under DOAJ and analyzed based on country, language and subject heading accessibility of archives. India and Turkey were in 1st rank in this regard. English language was found common communication medium by majority of the journals. Mondal (2014) conducted bibliometric analysis of Webology journal published from Iran from the year 2004 to 2012 and found 2665 journals citations from 102 papers published during the study period. Further study revealed that single authorship pattern was prevalent and contributed the highest numbers of articles followed by two authorship pattern. India was the highest contributor to the journal among all of the countries. Satyanarayana (2014) evaluated the scholarly publication trends of TOURISMOS from 2006 to 2011 and he found that maximum numbers of articles were contributed by joint authorship and degree of collaboration was 0.65. The geographical distribution of papers highlighted that journal was dominated by the host country (i.e. Greece). Sivasekaran & Raghavan (2014) revealed that majority of the articles contributed by single authors and most of the authors were affiliated with academic research institutions. India was biggest contributor of articles than others.

## 3. Scope of the Study

The scope of the study is confined to the bibliometric analysis of Indian open access LIS journal "Annals of Library and Information Studies (ALIS)" for 5 years from 2011 to 2015. During the study period journal has published 5 volumes which contains 173 numbers of articles/research papers.

## 4. Objectives of the Study

The objectives of the study were:

- To examine the year-wise distribution of articles.
- To find the authorship pattern of the journal.
- To assess the degree of collaboration among authors.
- To find out geographical distribution of articles.
- To analyze the forms of documents cited in the journal articles.
- To determine the obsolescence of literature in the field.

## 5. Hypotheses

The hypotheses of the study were:

$H_1$: Solo research is less preferred than collaborative research.

$H_2$: Time has inverse relationship with growth of citation.

## 6. Research Methodology

The journal has been retrieved from its website (http://nopr.niscair.res.in/). Present study belongs to bibliometric analysis of scholarly communications of journal "ALIS" chosen for study. The scholarly communications in the form of research papers published during 2011-2015 were downloaded and tabulated in MS-Excel for analysis of 173 numbers of articles from 5 volumes of the journal. Data has been recorded in terms of year of publication, authorship pattern, degree of collaboration, and geographical distribution of articles etc.

## 7. Data Analysis and Interpretation

### *A. Year wise Distribution of Articles*

Table 1: Distribution of Articles – Year wise

| Year | Vol. No. | No. of Issues | No. of Contributions | % |
|---|---|---|---|---|
| 2011 | 58 | 4 | 36 | 20.80 |
| 2012 | 59 | 4 | 27 | 15.60 |
| 2013 | 60 | 4 | 37 | 21.38 |
| 2014 | 61 | 4 | 35 | 20.23 |
| 2015 | 62 | 4 | 38 | 21.96 |
| **Total** | | **20** | **173** | **100** |

(Source: Primary Data)

Table 1 displays the total number of articles published in 20 issues of 5 volumes from the year 2011 to 2015 published in the journal "ALIS". On the observation of table 1, it has been found that major contributions of research papers to the journal published in Volume 62 (21.96%) and Volume 60 (21.38%). Volume 59 has the lowest publication ratio out of five volumes i.e. 15.60% of total articles published in the journal.

### *B. Issue wise Distribution of Articles*

Table 2: Distribution of Articles – Issue wise

| Issues (Month) | Volume Number | | | | | Total | % |
|---|---|---|---|---|---|---|---|
| | 58 | 59 | 60 | 61 | 62 | | |
| March | 10 | 6 | 9 | 9 | 6 | 40 | 23.12 |
| June | 10 | 6 | 9 | 8 | 7 | 40 | 23.12 |
| September | 9 | 8 | 9 | 11 | 9 | 46 | 26.58 |
| December | 7 | 7 | 10 | 7 | 16 | 47 | 27.16 |
| **Total** | **36** | **27** | **37** | **35** | **38** | **173** | **100** |

(Source: Primary Data)

Table 2 displays the issue-wise publications of articles in five volumes. On the observation, it has been found that during March & June issues, there were less number of publications to the journal i.e. 23.12% of total articles published in the journal. September issue of the

journal has second highest number of publications i.e. 26.58% to the journal. December issue of the journal has the highest number of published articles (with 27.16% publications).

### *C. Authorship Pattern*

Table 3: Authorship Pattern of the Journal

| Year | Volume | No. of Authors | | | | | | Total Articles | Total Authors (%) |
|---|---|---|---|---|---|---|---|---|---|
| | | One | Two | Three | Four | Five | Six | | |
| 2011 | 58 | 14 | 14 | 7 | - | - | 1 | 36 | 69 (21.29) |
| 2012 | 59 | 11 | 10 | 6 | - | - | - | 27 | 49 (15.12) |
| 2013 | 60 | 12 | 18 | 5 | - | 1 | 1 | 37 | 74 (22.83) |
| 2014 | 61 | 12 | 18 | 3 | 2 | - | - | 35 | 65 (20.06) |
| 2015 | 62 | 18 | 14 | 4 | 1 | 1 | - | 38 | 67 (20.67) |
| **Total** | | **67** | **74** | **25** | **3** | **2** | **2** | **173** | **324 (100)** |
| **Percentage** | | **38.72** | **42.77** | **14.45** | **1.73** | **1.15** | **1.15** | **100** | |

(Source: Primary Data)

The table 3 shows authorship pattern of research contributions published in the journal during 2011-2015. On the observation of table 3, it has been found that 38.72% articles published in the name of one (single) author whereas 42.77% articles by two authors and 14.45% articles by three authors of total publications to the journal. There were only 1.73% articles published by four authors; and only 1.15% articles published by five as well as six authors each. From the analysis, it has been found that two authorship pattern is most prevalent in the journal followed by single authorship and three authorship pattern respectively. Further, table 3 also reveals the total number of authors i.e. 324 contributed 173 research papers to the journal. Out of total number of authors, 22.83% belongs to Volume 60 of the journal followed by Volume 58 (21.29%), Volume 62 (20.67%), Volume 61 (20.06%), and Volume 59 (15.12%).

### *D. Degree of Collaboration*

Table 4: Degree of Collaboration among Authors

| Year | Volume | Single Author (Ns) | Multi Authors (Nm) | Total (Ns+Nm) | Degree of Collaboration |
|---|---|---|---|---|---|
| 2011 | 58 | 14 | 22 | 36 | 0.61 |
| 2012 | 59 | 11 | 16 | 27 | 0.59 |
| 2013 | 60 | 12 | 25 | 37 | 0.67 |
| 2014 | 61 | 12 | 23 | 35 | 0.65 |
| 2015 | 62 | 18 | 20 | 38 | 0.52 |
| **Total** | | **67** | **106** | **173** | **0.61** |

(Source: Primary Data)

The Degree of Collaboration (C) of the contributors has been derived using the Subramanyam formula**:**

Degree of Collaboration (C) = $\frac{Nm}{Nm+Ns}$

Where,
C = Degree of Collaboration
Nm = Number of multiple authors
Ns = Number of single authors

$$C= \frac{106}{106+67=173} \text{ or } C = 0.61$$

The Degree of Collaboration has been calculated for the year 2011-2015. Single author contribution is 67 and multiple authors' contribution is 106. Volume wise Degree of Collaboration of the journal falls in the range of 0.52 to 0.67. The calculated Degree of Collaboration of the journal is 0.61. The higher the Degree of Collaboration shows journal has good presence of collaborative research among authors.

### *E. Geographical Distribution of Articles*

Table 5: Geographical Distribution of Articles

| Year | National | International | National + Inter. | Total No. of Articles |
|---|---|---|---|---|
| 2011 | 25 | 10 | 1 | 36 |
| 2012 | 18 | 8 | 1 | 27 |
| 2013 | 29 | 8 | - | 37 |
| 2014 | 31 | 3 | 1 | 35 |
| 2015 | 27 | 10 | 1 | 38 |
| **Total** | **130** | **39** | **4** | **173** |
| **Percentage** | **75.14** | **22.54** | **2.31** | **100** |

(Source: Primary Data)

The table 5 displays geographical distribution of articles in the journal. The articles have been divided into three categories: National, International, and National + International. On the observation, it has been found that 75.14% articles were belongs to national contribution and 22.54% were belongs to international contribution. National contribution is more than international contribution to the journal. There were very few contributions (2.31%) belong to national and international collaboration. On the analysis, it has been found that since the journal is of Indian origin, highest number of articles submitted and published by India in the journal. International contribution of articles to the journal is less than national because of geographic distance as well as less popularity of the journal due to recent in existence.

### *F. Country-wise Distribution of Authors*

Table 6: Country wise Distribution of Authors

| Rank | Country | No. of Authors | Percentage |
|---|---|---|---|
| 1 | India | 234 | 72.22 |
| 2 | Nigeria | 45 | 13.88 |
| 3 | Bangladesh | 15 | 4.62 |
| 4 | Sri Lanka | 13 | 4.01 |
| 5 | Iran | 5 | 1.54 |
| 6 | Uganda | 3 | 0.92 |
| 7 | Malaysia | 2 | 0.61 |
| 8 | Canada | 1 | 0.30 |
| 9 | Brazil | 1 | 0.30 |
| 10 | Russia | 1 | 0.30 |
| 11 | Botswana | 1 | 0.30 |
| 12 | Belgium | 1 | 0.30 |
| 13 | Tanzania | 1 | 0.30 |
| 14 | Fiji | 1 | 0.30 |
| **Total** | | **324** | **100** |

(Source: Primary Data)

Table 6 shows country wise distribution of authors. India has the highest number of contributors (72.22%) to the journal followed by Nigeria (13.88%), Bangladesh (4.62%), Sri Lanka (4.01%), and Iran (1.54%). The journal has 28% authors from other countries and rests were from India which displays its international acceptance and presence amongst LIS professionals. Among foreign countries authors, 50% authors belong to Nigeria only that indicates Nigerian authors have more interest in publishing their research papers with Indian journal "ALIS".

### *G. State-wise Distribution of Indian Authors*

Table 7: State wise Distribution of Indian Authors

| Rank | Name of the State | No. of Authors | Percentage |
|---|---|---|---|
| 1 | New Delhi | 73 | 31.19 |
| 2 | West Bengal | 26 | 11.11 |
| 3 | Karnataka | 25 | 10.68 |
| 4 | Maharashtra | 17 | 7.26 |
| 5 | Kerala | 15 | 6.41 |
| 6 | Jammu & Kashmir | 10 | 4.27 |
| 7 | Odisha | 7 | 2.99 |
| 8 | Uttar Pradesh | 7 | 2.99 |
| 9 | Tamil Nadu | 6 | 2.56 |
| 10 | Chandigarh | 6 | 2.56 |
| 11 | Himachal Pradesh | 5 | 2.13 |
| 12 | Madhya Pradesh | 5 | 2.13 |
| 13 | Punjab | 5 | 2.13 |
| 14 | Jharkhand | 4 | 1.70 |
| 15 | Gujarat | 4 | 1.70 |
| 16 | Puducherry | 3 | 1.28 |
| 17 | Haryana | 2 | 0.85 |
| 18 | Andhra Pradesh | 2 | 0.85 |
| 19 | Rajasthan | 2 | 0.85 |
| 20 | Chhattisgarh | 2 | 0.85 |
| 21 | Telangana | 2 | 0.85 |
| 22 | Sikkim | 2 | 0.85 |
| 23 | Arunachal Pradesh | 1 | 0.42 |
| 24 | Assam | 1 | 0.42 |
| 25 | Meghalaya | 1 | 0.42 |
| 26 | Manipur | 1 | 0.42 |
| **Total** | | **234** | **100** |

(Source: Primary Data)

Table 7 shows state wise distribution of Indian authors. New Delhi (31.19%) has the highest number of contributors to the journal followed by West Bengal (11.11%), Karnataka (10.68%), Maharashtra (7.26%), Kerala (6.41%), Jammu and Kashmir (4.27%), Odisha and Uttar Pradesh (2.99% each), Tamil Nadu and Chandigarh (2.56% each), etc. Indian contributors to the journal belong to 26 states and union territories of India which shows journal's wide acceptance amongst Indian LIS professionals.

### *H. Forms of Documents Cited*

Table 8: Forms of Documents Cited in the Articles

| SN | Forms of Document | Total No. of Citations | Percentage |
|---|---|---|---|
| 1 | Journal Articles | 2223 | 62.18 |
| 2 | Books and Reference Sources | 642 | 17.95 |
| 3 | Web based Resources | 250 | 6.99 |
| 4 | Conference/Seminar Proceedings | 194 | 5.42 |
| 5 | Research/ Project Reports | 80 | 2.23 |
| 6 | Miscellaneous Items | 130 | 3.63 |
| 7 | Theses/ Dissertations | 56 | 1.56 |
| | **Total** | **3575** | **100** |

(Source: Primary Data)

The study has been conducted to know the prevalent forms of citations appeared in research articles published in the journal. From the analysis of table 8, it has been found that "Journal Articles" were most prevalent in terms of citations/references in research articles. There were total 3575 citations received to 173 research articles published in the journal during study period, and more than 62% citations belong to Journal Articles, followed by Books and Reference Sources (17.95%), Web based Resources (6.99%), articles published in Conference/Seminar Proceedings (5.42%), Research/Project Reports (2.23%), and Theses/Dissertations (1.56%).

### *I. Chronological Distribution of Citations*

Table 9: Chronological Distribution of Citations

| Years | Journal Articles | Books and Reference Sources | Web based Resources | Conference/ Seminar Proceedings | Misc. items | Research/ Project Reports | Theses/ Disserta-tions | Total |
|---|---|---|---|---|---|---|---|---|
| Upto-1950 | 16 (0.72%) | 35 (5.45%) | - | - | - | - | - | 51 (1.42%) |
| 1951-1960 | 13 (0.58%) | 23 (3.58%) | - | - | - | - | - | 36 (1%) |
| 1961-1970 | 41 (1.84%) | 50 (7.78%) | - | 1 (0.51%) | - | 1 (1.25%) | 1 (1.78%) | 94 (2.62%) |
| 1971-1980 | 60 (2.69%) | 49 (7.63%) | - | 1 (0.51%) | 5 (3.84%) | - | 2 (3.57%) | 117 (3.27%) |
| 1981-1990 | 122 (5.48%) | 84 (13.08%) | - | 1 (0.51%) | 2 (1.53%) | 1 (1.25%) | 4 (7.14%) | 214 (5.98%) |
| 1991-2000 | 396 (17.81%) | 133 (20.71%) | 2 (0.8%) | 30 (15.46%) | 15 (11.53%) | 5 (6.25%) | 11 (19.64%) | 592 (16.55%) |
| 2001-2010 | 1213 (54.56%) | 234 (36.44%) | 38 (15.2%) | 127 (65.46%) | 64 (49.23%) | 50 (62.5%) | 31 (55.35%) | 1757 (49.14%) |
| 2011-2015 | 362 (16.28%) | 34 (5.29%) | 210 (84%) | 34 (17.52%) | 44 (33.84%) | 23 (28.75%) | 7 (12.5%) | 714 (19.97%) |
| **Total** | **2223** | **642** | **250** | **194** | **130** | **80** | **56** | **3575** |

(Source: Primary Data)

The chronological distribution of citations to the journal articles has been given in table 9. The citations from the journal articles have been divided into 8 time frames having periodicity of 10 years each. The citations before 1950 were enclosed within the cluster upto 1950 and citations after 2010 to 2015 enclosed in 2011-2015 groups. From the table 9, it has been observed that "ALIS" research papers prefer most of the citations of 2001-2010 (49.14%), 2011-2015 (19.97%), and 1991-2000 (16.55%) time periods. It indicates that 85.66% literature cited in the research papers of the "ALIS" were within the period of 1991-

2015 i.e. 25 years duration. Further categorically, citations belongs to Journal Articles covered from 2001-2010 (54.56%), 1991-2000 (17.81%), and 2011-2015 (16.28%). Within the Journal Articles category, 88.66% citations are within the period of 1991-2015. Citations in the form of Books and Reference Sources also have 36.44% citations within 2001-2010, 20.71% within 1991-2000, and 13.08% within 1981-1990 time periods. The major citations (70.24%) are within 1981-2010 time periods in case of Books and Reference Sources. The Web based Resources as form of citations appeared during 1991-2000 time period first time in the journal articles and all the citations are within 1991-2015 time periods. In case of Conference/Seminar Proceedings, 65.46% citations are within 2001-2010 periods followed by 17.52% within 2011-2015, and 15.46% within 1991-2000. In case of Conference/Seminar Proceedings, 98.45% citations are within 1991-2015 time periods. In the cases of Miscellaneous items (94.61%), Research/Project Reports (97.5%) and Theses/Dissertations (87.5%), major citations are within 1991-2015 time periods. From the analysis, it has been inference that literatures older than 25 years (published before 1991) have not been used more by researchers and they have tendency to use latest literature published in any form except Books and Reference Sources in this journal ”ALIS’.

### *J. Obsolescence of LIS Literature*

Table 10: Frequency of Citations and their Obsolescence

| Years | Journals Articles | Books and Reference Sources | Web based Resources | Conference /Seminar Proceedi-ngs | Misc. items | Research/ Project Reports | Theses/ Dissert. | Total Citations (f) | Cumulative Citations (Cf) |
|---|---|---|---|---|---|---|---|---|---|
| 1-10 | 1017 (45.74%) | 146 (22.74%) | 237 (94.8%) | 99 (51.03%) | 83 (63.84%) | 53 (66.25%) | 29 (51.78%) | 1664 | 1664 |
| 11-20 | 824 (37.06%) | 202 (31.46%) | 12 (4.8%) | 88 (45.36%) | 38 (29.23%) | 25 (31.25%) | 15 (26.78%) | 1204 | 2868 |
| 21-30 | 207 (9.31%) | 107 (16.66%) | 1 (0.4%) | 5 (2.57%) | 4 (3.07%) | 1 (1.25%) | 8 (14.28%) | 333 | 3201 |
| 31-40 | 93 (4.18%) | 57 (8.87%) | - | - | 5 (3.84%) | | 2 (3.57%) | 157 | 3358 |
| 41-50 | 44 (1.97%) | 51 (7.94%) | - | 1 (0.51%) | - | 1 (1.25%) | 2 (3.57%) | 99 | 3457 |
| 51-60 | 20 (0.89%) | 34 (5.29%) | - | 1 (0.51%) | - | - | - | 55 | 3512 |
| 61-70 | 4 (0.17%) | 18 (2.80%) | - | - | - | - | - | 22 | 3534 |
| 71-80 | 2 (0.08%) | 3 (0.46%) | - | - | - | - | - | 5 | 3539 |
| 81-90 | 10 (0.44%) | 6 (0.93%) | - | - | - | - | - | 16 | 3555 |
| 90+ | 2 (0.08%) | 18 (2.8%) | - | - | - | - | - | 20 | 3575 |
| **Total** | **2223** | **642** | **250** | **194** | **130** | **80** | **56** | **3575** | |

(Source: Primary Data)

The table 10 displays frequency of citations appeared in the articles published in the journal “ALIS” and obsolescence of literature cited in those articles. The total 3575 citations were classified into 10 time zones, each having the time duration of 10 years. These 3575 citations were also categorized according to their form of document. From the table 10, categorically different rates of obsolescence observed for different forms of documents. For example, for Journal Articles rate of obsolescence is 10+ years, Books and Reference Sources upto 20 years, Web based Resources, Conference/Seminar Proceedings, Miscellaneous Items,

Research/Project Reports and Theses/Dissertations are 10 years etc. The calculated rate of obsolescence or half-life of citations to the journal "ALIS" is 10.60837 years.

### *K. Testing of Hypotheses*

*Hypothesis 1: Solo research is less preferred than collaborative research.*

For the testing of this hypothesis, null hypothesis is required that has been given as:
*$H_0$: There is no significant difference between solo research and collaborative research.*

Chi Square ($X^2$) is a test to test the significance when obtained data are expressed in frequencies or percentage or proportions.

| | Observed Frequency (***fo***) | Expected Frequency (***fe***) |
|---|---|---|
| Solo Research | 67 | 86.5 |
| Collaborative Research | 106 | 86.5 |

Computation of $X^2$ with the data given in table 11.

Table 11: Computation of $X^2$ for ALIS

| | ***Fo*** | ***fe*** | ***fo - fe*** | $(fo - fe)^2$ | $(fo - fe)^2 / fe$ |
|---|---|---|---|---|---|
| Solo Research | 67 | 86.5 | -19.5 | 380.25 | 380.25/86.5=4.39 |
| Collaborative Research | 106 | 86.5 | 19.5 | 380.25 | 380.25/86.5=4.39 |
| Total | 173 | 173 | | 760.5 | 760.5/86.5=**8.79** |

Degree of Freedom (df) = (R-1) (C-1) = (2-1) (2-1) = 1.
From critical value of Chi-Square table, the values of $X^2$ distribution for 1 degree of freedom at .05 and .01 level are 3.84 and 6.64 respectively. The calculated $X^2$ value is 8.79 which is greater than critical $X^2$ value 3.84 at .05 level. This rejects null hypothesis and proves that solo research is less preferred than collaborative research.

*Hypothesis 2: Time has inverse relationship with growth of citation.*

Pearson Correlation is a test to know the degree of association (correlation) between two variables. Here association has been observed between Time and Growth of Citations.

Table 12: Correlation of ALIS

| **Correlations** | | | |
|---|---|---|---|
| | | Time (Year) | Citations |
| Time (Year) | Pearson Correlation | 1 | -.637** |
| | Sig. (2-tailed) | | .000 |
| | N | 147 | 147 |
| Citations | Pearson Correlation | -.637** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 147 | 147 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

There is a significant adverse (negative) relationship between time and growth of citations (r= -.637, significant at .01 level). Therefore, this hypothesis ($H_2$) is accepted. The correlation

have been measured between time and citations and found that there is significant adverse (negative) relationship for the journal "ALIS". This proves the hypothesis that time has inverse relationship with growth of citations to the journal. As time passes in backward movement (from 2015 to 1900), there should be more number of citations from recent to old but it is not so, and if time passes in forward movement (from 1900 to 2015), there should be more number of citations from old to recent. But in both the conditions, it has been found adverse correlation between time and growth of citations.

## 8. Research Findings

The analysis of the data collected through survey and observation have revealed a number of findings which are as follows:

a) The journal has published 173 articles in 20 issues of 5 volumes from the year 2011-2015. There was almost equal distribution of articles found in every volume. Volume 62 and Volume 60 have published major percentage of research papers to the journal i.e. 21.96% and 21.38% respectively.

b) As per issue wise publications of articles in five volumes, it has been found that December issue (27.16%) of the journal has the highest number of published articles followed by September issue (26.58%).

c) In the study of authorship pattern for the journal, it has been found that two authorship pattern (42.77%) is most prevalent in the journal followed by single authorship (38.72%). Further, study also reveals that 324 authors contributed 173 research papers to the journal, out of which 22.83% authors belongs to Volume 60 of the journal followed by Volume 58 with 21.29% authors.

d) The Degree of Collaboration, during 2011-2015, for the journal is 0.61 which indicates significant amount of collaborative research among authors of the journal.

e) In the analysis of geographical distribution of articles in the journal, it has been found that majority (75.14%) of research papers were belong to national contribution whereas 22.54% research papers belongs to international contribution. Besides these, only few research papers (2.31%) have national and international collaboration. Since the journal is of Indian origin, so highest number of research papers submitted and published by Indian authors in the journal. International contribution of articles to the journal is less than national and it might be due to geographic distance and less popularity of the journal.

f) In the analysis based on country wise distribution of authors, it has been observed that India has the highest number of contributors (72.22%) to the journal. The journal has 27.78% contributors from overseas which display its international reach. Nigerian authors (50%) have more interest in publishing their research papers in the journal amongst all overseas authors.

g) In the analysis based on state wise distribution of authors within India, it has been observed that New Delhi (31.19%) has the highest number of contributors to the journal followed by West Bengal (11.11%), Karnataka (10.68%), and Maharashtra (7.26%). Indian contributors to the journal belong to 26 states and union territories of India which shows journal's wide acceptance amongst Indian LIS professionals.

h) The study has been conducted to know the prevalent forms of citations appeared in research articles published in the journal and found that Journal Articles (62.18%) were most prevalent in terms of citations/references in research articles followed by Books and Reference Sources (17.95%). Research/Project Reports and Theses/Dissertations were less cited by researchers to write research papers in the field.

i) The study has been conducted to know the chronological distribution of citations to the journal articles and found that research papers published in the journal "ALIS" prefer most of the citations of 2001-2010 (49.14%), 2011-2015 (19.97%), and 1991-2000 (16.55%) time periods which indicates that majority (85.66%) of literature cited in the research papers of the journal were within the time period of 1991-2015 i.e. last 25 years duration.

j) The study has been conducted to determine the rate of obsolescence (half-life) of LIS literature in the journal and found that the calculated rate of obsolescence (half-life) for the journal is 10.60837 years.

k) From the testing of significance of hypothesis ($H_1$) with Chi-Square test, it has been found that journal "ALIS" prefer collaborative research than solo research.

l) From the testing of correlation between time and growth of citations in hypothesis ($H_2$) with Pearson Correlation, it has been found that journal has significant adverse relationship between time and growth of citations and thus hypothesis ($H_2$) is accepted.

## 9. Conclusions

The journal "ALIS" has published five volumes having 20 issues covering 173 research papers/articles and majority of the articles published in volumes 62 and 60 of the journal. December and September issues of the journal have more number of articles than other two issues which indicates non-uniform distribution of articles issue wise, though this is not the fault of Journal or Editors of the journal. Two authorship patterns are most prevalent in the journal followed by single authorship which gives the indication that collaborative research is increasing in the field and it can be tested by the degree of collaboration of the journal (0.61) also. More the Degree of Collaboration tends to more collaborative research amongst authors/researchers. National contribution of articles to the journal is higher than international contribution. It gives an impression that journal has much popularity within the country than world and Indian authors/researchers are the major contributor of research papers to the journal. Moreover, journal has overseas publicity or availability up-to 13 foreign countries, which is a good sign for the journal to prove its international visibility and acceptance. Nigeria is the highest contributor of research papers to the journal amongst foreign countries. It is a good sign in the sense that amongst foreign authors, Nigerian researchers found best place to publish their research with Indian journal and somehow it will increase the world level acceptance of the journal in terms of quality and quantity. Further, within India, 26 Indian States and Union Territories were covered in the articles of the journal; and researchers from New Delhi were the highest contributor of articles to the journal. In terms of forms of documents cited in the journal, "Journal Articles" found to be most prevalent source of information for writing the research papers. Further, authors/researchers of the journal articles were habitual to use recent information sources which were not older than 25 years (published before 1991) from the today. Less the half-life will confirm faster growth of literature in the field; and for the journal "ALIS" half-life (rate of obsolescence) found to be 10.6 years which indicates faster growth of literature in the field. Collaborative research found to be new trend than solo research as observed and tested in this research; and time duration has inverse relation with the growth of literature proved in the present study.

## References

1. Annals of Library and Information Studies (n.d.). Retrieved on March 24, 2017, from http://nopr.niscair.res.in/alis_intro.htm

2. Angammana, A.M.S. & Jayatissa, L.A. (2015). A bibliometric study of postgraduate theses in Library and Information Science: with special reference to University of Kelaniya and University of Colombo, Sri Lanka. *Journal of University Librarians' Association of Sri Lanka*, 19(1), 32-51.
3. Awasthi, Shipra & Jaiswal, Babita. (2015). Library and Information Science journals in DOAJ: a bibliometric study. *International Journal of Scientific & Engineering Research,* 6(8), 1476-1481.
4. Directory of Open Access Journal (n.d.). Retrieved on March 24, 2017, from https://doaj.org/
5. Gogoi, Manisha & Barooah, Pronab Kumar. (2016). Bibliometric analysis of Indian Journal of Chemistry, Section B to study the usage pattern of information in the field of Material Science. *Library Philosophy and Practice*. Retrieved on September 1, 2016, from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3519 &context= libphilprac
6. Hajam, Manzoor Ahmad. (2014). Bibliometric analysis of Indian Journal of Clinical Bio-Chemistry from the year 2004-2013. *International Journal of Digital Library Services,* 4(4), 36-48.
7. Khillare, V. & Khaparde, V. (2014). Open access online journals on Microbiology on DOAJ: a case study. *International Journal of Digital Library Services,* 4(4), 49-67.
8. Mondal, D. (2014). A bibliometric analysis of Webology (2004-2012): an international online journal. *International Journal of Information Dissemination and Technology,* 4(3), 201-207.
9. Rajev, MKG & Joseph, S. (2016). A bibliometric analysis on Malaysian Journal of Library and Information Science. *International Research: Journal of Library and Information Science*, 6(1), 159-174.
10. Satyanarayana, D. (2014). TOURISMOS: a bibliometric study. *Journal of Tourism and Hospital*, 3(2). Retrieved on June 15, 2016, from http://www.omicsgroup.org/journals/tourismos-a-bibliometric-study-216702691000 124.php?aid=30126
11. Sivasekaran, K, & Raghavan, S.S. (2014). Journal of Astrophysics and Astronomy: a bibliometric study. *Library Science Research Journal,* 2(6). Retrieved on January 21, 2016, from http://www.lsrj.in/UploadedArticles/236.pdf
12. Tamizhchelvan, M., & Dhanavandan, S. (2014). A study on open access journals from South Asian countries registered in DOAJ. *International Research: Journal of Library and Information Science*, 4(3), 443-456.
13. Wankhede, R. S. et al. (2015). A bibliometric analysis of the Urban Library Journal on DOAJ. *Knowledge Librarian: An International Peer Reviewed Bilingual E-Journal of Library and Information Science,* 2(1), 173-192.

■■■