

# **Bibliometric Analysis of Indian Forester : 1991-2000**

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*Bibliometric analysis of **Indian Forester** is done for 1991-2000. Different parameters of the journal viz. Year wise distribution of papers, distribution of papers among different types of organization, Institute wise distribution among the ICFRE (Indian Council of Forestry Research & Education) institutes, state wise distribution of papers in Indian territory and the foreign contributions, authorship pattern, number of citation and the length of the articles are studied. Inferences and findings are shown with relevant data analysis.*

## **1. Introduction**

Bibliometrics is an emerging thrust area of research in the field of Library and Information Science (LIS) and has practical applications in measuring the coverage and quality of journals. Bibliometrics is an application of statistical and mathematical methods to bibliographical studies. It can be defined as the study and measurement of the publication patterns of all forms of written communication and their authorship. (Potter, 1981). Allan Prichard first coined the term 'bibliometrics' in 1969 but it became popular during 1980s. Definition and purposes of bibliometrics is to shed light on the process of written communication and of the nature and course of the discipline by means of counting and analyzing the various facets of written communication (Pitchard 1969). Bibliometrics is defined as the 'organization, classification and quantitative evaluation of publication pattern of all macro and micro communications along with their authorship

by mathematical and statistical calculus (Sengupta 1990). We may get some factual data through the bibliometric studies of any area of research and study, which can give an insight into the research and development to particular area under consideration. It is used to identify the pattern of publication, authorship citation and coverage of journals papers in terms of geographic, subject, organization and other related parameters. It also helps in library resource management and planning strategies for documentation service to the user community of that particular literary discipline.

The present study is a bibliometric analysis of the Journal *Indian Forester*, one of the core primary journal in the discipline of forestry in India. Some of the studies in the line carried out by Balog (1980) in agriculture research and publications, Kalyane and Sen (1995) on Oil Seeds Research, Halkar et al. (1998) on family welfare, Vij and Bedi (1999) on Defence Science Journals, Dhiman (2000) in the Ethnobotany Journal,

Koguramath and Pothare (2001) in *Journal of Social work*, Sahoo (2001) in the *Conservation of Cultural property in India*. However, it is observed that not a single work is done in the *Indian Forester*, hence a sincere effort is made to in this study.

## 2. Objective of the Studies

The present study is undertaken to have an in depth study in the journal *Indian Forester*, a monthly publication of the Society of Indian Forester, Dehradun during the period 1991-2000. The study is intended to study the following:

1. Year wise distribution of papers
2. Distribution of papers among types of organization
3. Institute wise distribution of papers under ICFRE
4. Distribution of papers among different states as well as contribution from foreign countries
5. Authorship pattern of the papers
6. Subject wise analysis of the paper
7. The frequency of references cited in the papers
8. Average length of the papers

## 3. Source Journal : The Indian Forester

The *Indian Forester* is a monthly publication of the society of Indian Forester, Dehradun. It is the oldest journal dedicated to publication of literature in the discipline of forestry much before the organized forestry research started in India. It started in the year 1875 under the auspices of few devoted visionaries in British India. It is the oldest professional forestry journal in India devoted to the science of forestry. From the humble

beginnings as a quarterly forestry magazine, *Indian Forester* (the first issue coming out in July, 1875) became a monthly from January, 1883. The *Indian Forester* covers all aspects of forestry, its administration, management and information on recent development in researches carried out in the country. It also covers contributions from outside the country. It is one of the core journals consulted by the scientists and researchers for primary information in forestry most frequently.

## 4. Methodology

All the papers of 10 volumes i.e. V.117-126 (1991-2000) were scanned considering its subject, author, organizational distribution, geographic distribution, number of references and the number of pages manually and tabulated for necessary data. Finally, all the collected data were analyzed for making the observations. As forestry is a multidisciplinary subject that includes a number of interrelated fields to the fore while targeting to address a particular piece of problems. In certain cases, expert comment is sought while deriving the subject of the papers. Again, the subjects of the paper are merged and grouped based on two classification schedules in use viz. Universal Decimal Classification (IFID, 1995) and the Forest Decimal Classification (IUFRO, 1990). However, certain selected subjects i.e. Bamboo & Cane, Biofertilizer, Agroforestry, Social economics of forestry (including Joint Forest Management) which are selected as thrust area of research and studies in the Indian Council of Forestry Research and Education (ICFRE) are excluded from merging according to the classification schedules.

## 5. Result & Discussion

The total number of papers in the 10 years

is 1402, which consist of research papers only. The review of literature, letters to the editor, short communication, research note etc. are excluded from the studies.

### *5.1 Year wise Distribution of Papers*

In the table 1, details of the number of papers from 1991-2000 are tabulated. It is found that highest number of papers was published in the year 1996 which is 156 i.e. 11.13% of the total number of papers. The lowest number of papers was published in the year 1992, which is 114 (8.13%) of the total number of papers.

### *5.2 Distribution of papers among types of Organization*

In the Table 2.1 the contribution of papers from different organizations is presented. Highest number of papers is found contributed from the Institute under ICFRE (Indian Council of Forestry Research & Education), which is 487 (34.74%) of the total paper followed by the State Forest Departments, which is 376 (26.81%) of the total papers. Lowest number of papers is contributions from the NGOs which is 29 (2.07%).

Indian Council of Forestry Research & Education (ICFRE) is the apex body for organizing, conducting research and extension of technologies in the field of forestry. It has a national network of as many as 8 research institutes and 3 advance centres catering the research needs of the different bio-geographical regions of the country. It was felt pertinent to have a look at the number of contributions from different institutes under ICFRE. In the Table 2.2, it is seen that highest number of contributions are from the Forest Research Institute, Dehradun which is 284 (58.11%) out of the total 487 numbers

of contributions. However, only a single paper is seen from the RFRI, Jorhat.

### *5.3 Distribution of papers among different states as well as contribution from foreign countries*

In Table 3, all the states under Indian Territory are listed alphabetically against the number of papers published from the state year wise. A number of foreign countries are also found contributed to the Indian Forester are listed in the same table. It is seen that highest number of papers was published from U.P. (undivided U.P.), which is 494, i.e. 35.16% of the total contributions. Madhya Pradesh and Himachal Pradesh follow this by 100 (7.13%) and 93 (6.63%) respectively. Nagaland and Sikkim contributed the lowest number of papers i.e. 2 (0.14%) only.

Out of the 27 contributions from 8 foreign countries (Table 3.1) highest 14 numbers of papers are counted from Bangaladesh, which is 1% of the total papers and 51.85% of the total foreign contributions. However, altogether 5 papers did not carry authors affiliation in respect of geographic identity.

### *5.4 Authorship Pattern of the Papers*

The literature on any subjects reflects not only basic publishing pattern but also the characteristics of the author themselves. (Kannappanavar and Vijayakumar 2001). Details of the authorship pattern are shown in Table 4. The highest 497 numbers (35.45%) of papers are found with single authorship followed by 435 (31.03%) papers by double authors and 470 papers (33.52%) are by more than two authors. Multiple authorship papers are 905, which is 64.55% of the total contributions. It may be inferred that

multiple authored papers are predominant in forestry.

Table 4 depicts that percentage of multi-authored papers is more (64.55%) than the single authored papers (35.45%). The degree of collaboration in the papers may be counted based on the formula (Subramanyan, 1983).

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

C = degree of collaboration in the discipline

Nm = number of multi-authored papers

Ns = number of single authored papers

$$C = \frac{905}{905+497}$$

$$C = 0.64$$

When value of C increases it means that the level of collaboration is increasing and vis-versa.

The degree of collaboration shows that research in the field of forestry is predominant by team research. Table 5 depicts the degree of collaboration over the years from 1991-2000. It is seen that the degree of collaboration in the Indian Forester varies from 0.28 to 0.50 randomly.

### 5.5 Subject wise analysis of the Paper

Table 6 gives details of the total 1402 papers analyzed on the subjects. It is seen that highest 430 (30.67%) papers was in the area of Silviculture which encompasses a number of subjects viz. Plantation, Afforestation, Watershed management, Working plan, Farm forestry, Seed Science, Biomass, Energy Plantation, Fodder and forage,

Plant propagation, Nursery techniques, Seed science, Tissue culture, Agroforestry, Farm forestry and Horticulture. Ecology, Environment and Biodiversity together with 118 papers (8.42%) placed second, while the lowest 2 (0.14%) papers were in the area of Legal aspects of forestry & IPR.

### 5.6 The frequency and mean of reference cited in the Papers

Table 7 reveals the details of the number of citations appeared with the papers. Out of the total 1402 papers, 168 numbers have no references. Maximum 307 numbers i.e. 21.90% of papers appended with average 4-6 numbers of references followed by 233 papers i.e 16.62% with 1-3 references. Only 10 papers appended with 50+ references, which is 0.71% of the total papers.

### 5.7 Average length of the Papers

Table 8 reveals that maximum 635 (45.29%) numbers of papers covers 4-6 pages followed by 7-9 pages in 392 papers (27.96%). Lowest 20 papers (1.43%) covers between 16-18 pages.

## 6. Conclusion

The following conclusions are drawn from the study.

1. The number of papers published in the Indian Forester from 1991-2000 is not consistent as the difference between the maximum and the minimum is 42.
2. The maximum number of papers published in the year 1996 (1546) and minimum in the year 1992 (114).
3. ICFRE and its institute contributed maximum (34.74%) of papers to the *Indian Forester*

followed by the State forest departments (26.81%). Lowest contribution is seen from the NGOs (2.07%)

4. Among the ICFRE institutes, FRI, Dehradun alone contributed 58.11% while the RFRI, Jorhat contributed only a single paper.

Uttar Pradesh (Undivided UP) contributed maximum numbers of papers, which comes to 35.16% of the total contributions followed by Madhya Pradesh with 7.13%. The lowest 2 papers (0.14%) are counted from two states i.e. Nagaland and the Sikkim. Altogether 27 numbers of papers from 9 foreign countries claim an international coverage of the journal.

6. Multiple authorship papers are dominant in the *Indian Forester* (64.55%) followed by single author (35.45%) and double author (31.03%).

Maximum numbers of papers are found in the area of Silviculture (30.67%) followed by Ecology, Environment & Biodiversity (8.42%) and minimum in legal aspects of forestry and the IPR (2 only).

8. On average 4-6 citations are appended with 21.90% of papers followed by 1-3 references with 16.62% of papers. This is not a healthy trend in an interdisciplinary subject.
9. Average length of papers shows that 45.29% papers covers 4-6 pages followed by 7-9 pages (27.96%) which shows the ideal length of a research article.

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Table 1 : Year wise Distribution of Papers

| Year         | Total No. of Papers | Percentage    |
|--------------|---------------------|---------------|
| 1991         | 144                 | 10.27         |
| 1992         | 114                 | 8.13          |
| 1993         | 119                 | 8.49          |
| 1994         | 138                 | 9.84          |
| 1995         | 149                 | 10.63         |
| 1996         | 156                 | 11.13         |
| 1997         | 150                 | 10.70         |
| 1998         | 139                 | 9.91          |
| 1999         | 144                 | 10.27         |
| 2000         | 149                 | 10.63         |
| <b>Total</b> | <b>1402</b>         | <b>100.00</b> |

Table 2.1 : Institution wise Distribution

| Institute                         | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | Total       | %          |
|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| Academic                          | 5          | 15         | 22         | 18         | 17         | 21         | 17         | 14         | 30         | 28         | 187         | 13.34      |
| ICFRE<br>Institutes               | 52         | 52         | 42         | 45         | 59         | 55         | 52         | 42         | 43         | 45         | 487         | 34.74      |
| State Forest<br>Dept.             | 62         | 26         | 23         | 38         | 32         | 36         | 38         | 45         | 39         | 37         | 376         | 26.81      |
| State Agri<br>Univ.               | 3          | 2          | 12         | 10         | 14         | 12         | 10         | 2          | 1          | 11         | 77          | 5.49       |
| Other<br>research<br>organization | 20         | 18         | 20         | 27         | 26         | 28         | 32         | 24         | 17         | 22         | 234         | 16.69      |
| NGO's                             | 2          |            |            |            | 1          | 4          |            | 11         | 6          | 5          | 29          | 2.07       |
| Others                            |            | 1          |            |            |            |            | 1          | 1          | 8          | 1          | 12          | 0.86       |
| <b>Total</b>                      | <b>144</b> | <b>114</b> | <b>119</b> | <b>138</b> | <b>149</b> | <b>156</b> | <b>150</b> | <b>139</b> | <b>144</b> | <b>149</b> | <b>1402</b> | <b>100</b> |

**Table 2.2 : Institute wise Distributions under ICFRE**

| Institute    | 1991      | 1992      | 1993      | 1994      | 1995      | 1996      | 1997      | 1998      | 1999      | 2000      | Total      | %          |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
|              | 39        | 41        | 32        | 31        | 31        | 29        |           |           |           | 23        |            |            |
|              |           |           |           |           | 8         |           |           | 6         |           | 4         | 34         |            |
| TFRI         | 1         | 2         | 1         | 5         | 9         | 7         | 7         | 14        | 4         | 6         | 56         | 11.50      |
| HFRI         | 1         | 5         | 1         | 2         | 1         | 4         | 2         | 5         | 2         | 3         | 26         | 5.34       |
| IWST         | 2         |           | 1         |           | 1         | 1         | 1         |           | 2         | 2         | 10         | 2.05       |
| ICFRE        |           |           |           | 1         | 1         | 1         | 1         | 1         |           |           | 5          | 1.00       |
| <b>Total</b> | <b>52</b> | <b>52</b> | <b>42</b> | <b>45</b> | <b>59</b> | <b>55</b> | <b>52</b> | <b>42</b> | <b>43</b> | <b>45</b> | <b>487</b> | <b>100</b> |

**Table 3 : Geographical Distribution**

| States                    | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Total | %    |
|---------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Andaman & Nicobar Islands | 4    | 1    | 3    | 2    | 1    | 2    |      | 3    | 1    | 1    | 18    | 1.28 |
| Andhra Pradesh            | 2    | 3    | 1    | 6    | 4    | 8    | 4    | 7    | 11   | 12   | 58    | 4.14 |
| Arunachal Pradesh         | 2    | 4    | 2    |      |      |      | 1    | 1    | 1    | 3    | 14    | 1.00 |
|                           | 4    |      |      |      |      |      |      |      |      |      |       |      |
| Delhi                     | 4    | 4    | 3    | 5    | 2    | 3    | 4    | 2    | 2    | 2    | 31    | 2.21 |
| Gujarat                   | 6    | 2    | 4    | 4    | 3    | 5    | 5    | 7    | 9    | 3    | 48    | 3.42 |
| Haryana                   | 2    | 3    | 2    | 2    | 4    | 4    | 4    | 3    |      | 5    | 29    | 2.07 |
| Himachal Pradesh          | 11   | 13   | 10   | 10   | 8    | 14   | 5    | 9    | 4    | 9    | 93    | 6.63 |
| Jammu & Kashmir           | 1    |      | 2    | 4    | 2    | 4    | 1    |      | 2    | 2    | 18    | 1.28 |
| Karnataka                 | 2    | 1    | 1    | 7    | 2    | 2    | 2    | 5    | 2    | 2    | 23    | 1.66 |
| Kerala                    | 4    | 3    | 2    | 5    | 9    | 7    | 6    | 4    | 9    | 3    | 52    | 3.71 |
| Madhya Pradesh            | 5    | 1    | 3    | 11   | 12   | 15   | 11   | 20   | 9    | 13   | 100   | 7.13 |
| Maharashtra               | 5    | 3    | 3    | 5    | 8    | 4    | 6    | 7    | 4    | 7    | 52    | 3.71 |

| States        | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | Total       | %          |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
|               | 2          |            |            |            |            |            |            |            |            |            |             |            |
|               | 1          |            |            |            |            |            |            |            |            |            |             |            |
| Manipur       | 1          |            |            |            |            | 1          |            | 1          | 2          | 2          | 7           | 0.50       |
| Nagaland      |            |            |            |            |            |            |            | 1          | 1          |            | 2           | 0.14       |
| Orissa        | 6          | 2          | 4          | 3          | 6          | 8          | 4          | 4          | 1          | 1          | 39          | 2.78       |
| Punjab        | 5          | 1          | 2          | 1          | 3          | 1          | 2          | 5          | 1          |            | 21          | 1.50       |
| Rajasthan     | 3          | 2          | 5          | 5          | 8          | 8          | 7          | 8          | 5          | 7          | 58          | 4.14       |
| Sikkim        |            |            |            |            | 1          | 1          |            |            |            |            | 2           | 0.14       |
| Tamil Nadu    | 5          | 4          | 6          | 7          | 6          | 2          | 11         | 8          | 4          | 11         | 64          | 4.57       |
| Tripura       |            | 1          |            | 2          |            |            |            | 2          |            | 1          | 6           | 0.43       |
| Uttar Pradesh | 53         | 57         | 53         | 48         | 51         | 54         | 53         | 29         | 49         | 46         | 493         | 35.16      |
| West Bengal   | 10         | 7          | 5          | 6          | 4          | 4          | 9          | 7          | 7          | 5          | 64          | 4.57       |
| New Zealand   |            |            |            |            |            |            |            | 1          |            |            | 1           | 0.07       |
| Bangladesh    | 1          |            | 2          |            | 1          | 1          | 4          | 1          | 1          | 3          | 14          | 1.00       |
| China         | 1          |            |            |            | 1          |            |            |            | 1          |            | 3           | 0.21       |
| U. K.         | 1          |            |            |            |            |            |            |            |            |            | 1           | 0.07       |
| Bangkok       |            |            | 1          |            |            |            |            |            |            |            | 1           | 0.07       |
| Nigeria       |            |            |            |            |            | 1          |            |            | 1          | 1          | 3           | 0.21       |
| Nepal         |            |            | 1          |            |            |            |            | 1          |            |            | 2           | 0.14       |
| Germany       |            |            |            |            | 1          |            |            |            |            |            | 1           | 0.07       |
| <b>Total</b>  | <b>144</b> | <b>114</b> | <b>119</b> | <b>138</b> | <b>149</b> | <b>156</b> | <b>150</b> | <b>139</b> | <b>144</b> | <b>149</b> | <b>1402</b> | <b>100</b> |



Table 3.1 : Country wise Distribution of Papers

| Country     | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Total | %     |
|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| New Zealand |      |      |      |      |      |      |      | 1    |      |      | 1     | 3.70  |
| Bangladesh  | 1    |      | 2    |      | 1    | 1    | 4    | 1    | 1    | 3    |       |       |
| U. K.       | 1    |      |      |      |      |      |      |      |      |      | 1     | 3.70  |
| Bangkok     |      |      | 1    |      |      |      |      |      |      |      | 1     | 3.70  |
| Nigeria     |      |      |      |      |      | 1    |      |      | 1    | 1    | 3     | 11.11 |
| Nepal       |      |      | 1    |      |      |      |      | 1    |      |      | 2     | 7.41  |
| Germany     |      |      |      |      | 1    |      |      |      |      |      | 1     | 3.70  |
| Malaysia    |      |      |      |      |      |      |      |      | 1    |      | 1     | 3.70  |
| Total       | 3    | -    | 4    | -    | 3    | 2    | 4    | 3    | 4    | 4    | 27    | 100   |

Table 4 : Authorship Pattern

| No. of Author | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Total | %   |
|---------------|------|------|------|------|------|------|------|------|------|------|-------|-----|
|               |      |      |      |      |      |      |      |      |      |      |       |     |
|               |      |      |      |      |      |      |      |      |      |      |       |     |
|               |      |      |      |      |      |      |      |      |      |      |       |     |
|               |      |      |      |      |      |      |      |      |      |      |       |     |
| Total         | 144  | 114  | 119  | 138  | 149  | 156  | 150  | 139  | 144  | 149  | 1402  | 100 |

Table 5 Degree of Collaboration over the years from 1991-2000

| Year | Degree of collaboration |
|------|-------------------------|
| 1991 | 0.50                    |
| 1992 | 0.42                    |
| 1993 | 0.27                    |
| 1994 | 0.41                    |
| 1995 | 0.28                    |
| 1996 | 0.33                    |
| 1997 | 0.35                    |
| 1998 | 0.35                    |
| 1999 | 0.32                    |
| 2000 | 0.34                    |

Table 6 : Subject wise Analysis

| Subjects                            | Number of Papers |      |      |      |      |      |      |      |      |      | Total       | %          |
|-------------------------------------|------------------|------|------|------|------|------|------|------|------|------|-------------|------------|
|                                     | 1991             | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |             |            |
| Ecology, Environment & Biodiversity | 5                | 17   | 4    | 30   | 3    | 4    | 13   | 10   | 18   | 14   | 118         | 8.42       |
| Wildlife/Nature conservation        | 21               | 2    | 17   | 3    | 13   | 16   | 13   | 7    | 12   | 11   | 115         | 8.20       |
| Plant science                       | 4                | 9    | 7    | 2    | 10   | 17   | 11   | 7    | 10   | 11   | 88          | 6.28       |
| Soil science                        | 7                | 11   | 9    | 9    | 14   | 8    | 4    | 9    | 6    | 8    | 85          | 6.06       |
| Silviculture                        | 35               | 39   | 41   | 48   | 60   | 55   | 42   | 46   | 39   | 25   | 430         | 30.67      |
| Agroforestry                        | 2                | 3    | 1    |      | 4    | 16   | 3    | 3    | 4    | 10   | 46          | 3.28       |
| Biofertilizer /Fertilizers          | 3                | 2    | 4    | 3    | 5    | 2    | 7    | 5    | 6    | 6    | 43          | 3.07       |
| Forestry Research & Education       | 27               | 7    | 5    | 5    | 1    | 3    | 3    | 6    | 8    | 1    | 66          | 4.71       |
| Forest protection                   | 3                | 4    | 4    | 5    | 6    | 7    | 7    | 8    | 6    | 11   | 61          | 4.35       |
| Entomology                          | 7                | 2    | 7    | 2    | 4    | 6    | 5    | 3    | 4    | 7    | 47          | 3.35       |
| Remote Sensing/GIS                  | 3                |      | 2    | 2    |      | 3    | 4    | 2    | 1    | 2    | 19          | 1.36       |
| Forest management                   | 2                | 1    | 1    | 16   | 4    | 6    | 19   | 19   | 12   | 21   | 101         | 7.20       |
| Wood science                        | 2                | 7    | 7    | 3    | 5    | 2    | 2    | 1    | 4    | 6    | 39          | 2.78       |
| Forest economics/ Marketing         | 1                |      |      | 1    | 3    | 4    | 4    |      | 3    | 2    | 18          | 1.28       |
| Forest Product/Minor F. P.          |                  | 2    | 3    |      | 6    | 4    | 2    | 5    | 1    | 4    | 27          | 1.93       |
| Social economics of forestry        | 17               | 3    | 3    | 5    | 5    | 2    | 5    | 2    | 4    | 2    | 48          | 3.42       |
| Bamboo & Cane                       | 5                | 5    | 4    | 4    | 4    | 1    | 2    | 5    | 5    | 7    | 42          | 3.00       |
| Library & Information studies       |                  |      |      |      | 1    |      | 4    | 1    | 1    |      | 7           | 0.50       |
| Legal aspects of forestry/IPR       |                  |      |      |      | 1    |      |      |      |      | 1    | 2           | 0.14       |
| <b>Total</b>                        |                  |      |      |      |      |      |      |      |      |      | <b>1402</b> | <b>100</b> |

| No. of Papers | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | Total       | %          |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| 4-6           | 25         | 25         | 32         | 32         | 41         | 40         | 32         | 28         | 26         | 26         | 307         | 21.90      |
| 7-9           | 20         | 15         | 20         | 21         | 24         | 36         | 20         | 26         | 19         | 26         | 227         | 16.19      |
| 10-12         | 10         | 12         | 15         | 9          | 11         | 16         | 16         | 19         | 20         | 21         | 149         | 10.63      |
| 13-15         | 8          | 6          | 8          | 11         | 15         | 9          | 10         | 8          | 17         | 16         | 108         | 7.70       |
| 16-18         | 3          | 3          | 9          | 7          | 3          | 8          | 13         | 6          | 11         | 7          | 70          | 5.00       |
| 19-20         | 4          | 2          |            | 5          | 7          | 7          | 4          | 3          | 6          | 10         | 48          | 3.42       |
| 20>           | 3          | 13         | 5          | 10         | 7          | 10         | 10         | 6          | 6          | 12         | 82          | 5.85       |
| 50>           |            |            |            | 1          |            |            | 5          |            | 2          | 2          | 10          | 0.71       |
| <b>Total</b>  | <b>144</b> | <b>114</b> | <b>119</b> | <b>138</b> | <b>149</b> | <b>156</b> | <b>150</b> | <b>139</b> | <b>144</b> | <b>149</b> | <b>1402</b> | <b>100</b> |

| No. of Papers | 1991       | 1992       | 1993       | 1994       | 1995       | 1996       | 1997       | 1998       | 1999       | 2000       | Total       | %          |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|------------|
| 10-12         | 20         | 12         | 15         | 31         | 16         | 9          | 16         | 20         | 24         | 22         | 185         | 13.19      |
| 13-15         | 3          | 4          | 1          | 3          | 3          | 8          | 3          | 3          | 4          | 11         | 43          | 3.07       |
| 16-18         | 5          | 2          |            | 1          | 1          | 3          | 2          | 3          | 2          | 5          | 24          | 1.71       |
| 18>           |            | 2          | 3          | 3          | 1          | 1          | 2          |            | 6          | 2          | 20          | 1.43       |
| <b>Total</b>  | <b>144</b> | <b>114</b> | <b>119</b> | <b>138</b> | <b>149</b> | <b>156</b> | <b>150</b> | <b>139</b> | <b>144</b> | <b>149</b> | <b>1402</b> | <b>100</b> |