6. SUMMARY & CONCLUSIONS
6. **CONCLUSION**

6.0.1. The growth and development of LIS education and LIS literature in developed countries have already reached a stage of sophistication. These countries have introduced machines in the processing and management of LIS information and also developed the automated information systems in library and information science. As a result a wide access to LIS information through on-line and off-line is now effective. The LIS education in developing country, especially in India, since independence is well-organised, and the literature published in this area has reached a stage of maturity. To cater the requirements for information in the subject and its subdisciplines, the INSDOC, DRTC, IASLIC, IATLIS and other professional organisations make the LIS information effectively accessible for use in LIS education, research and profession. These centres also directed their attention to encounter the problem in handling the information with the help of sophisticated technologies.

It may be pointed out that the shape of LIS literature underwent metamorphic stages since 1970. The accelerating growth of libraries, LIS education and research have led to the proliferation of LIS literature during this period. To meet these changes a considerable number of bibliographical tools are developed both at national and
international levels. These tools provide access to the widest possible range of LIS literature. A number of bibliometrical studies were made to assess the need of citation technique and use pattern of LIS literature by library professionals and information scientists and to evaluate the importance of citational studies in LIS literature in abroad. However, in India, very few such studies have been conducted.

The general conclusions emerging after the analysis and interpretation of data provided by the selected periodical literature in LIS under the study throw a new light in the citational pattern of LIS literature. However, the result as incorporated in the conclusions indicate that:

6.1. **LIS periodical**

The analysis and interpretation of data, obtained in this study yielded many useful information. The results can be summarised as follows:

6.1.1. The total number of L & IS periodicals thus published in India may be reckoned as 84 and newsletters are 12. At present 40 periodicals and L & IS are being currently published.
6.1.2. Out of 84 titles, 44 had discontinued publication under varied circumstances. Some of the reasons may be outbreak of the Second World War, lack of popular interest, problems of printing and production, lack of articles and financial constraints. Sometimes a few enthusiasts start a periodical in a moment of spurt without any guarantee of its continued sustenance. Such ventures die too soon. During the pre-independence period, i.e. from 1912, seven periodicals died out of ten originated. This study confirms that the mortality rate is perhaps less in the post-independence period.

6.1.3. The first periodical Library Miscellany, started by Baroda State Department of Libraries ran from 1912 to 1919. The oldest periodical, Granthagar Sarvaswamu in Telegu which was suspended during 1939-1947, was fortunately revived.

6.1.4. After independence, more and more L&IS periodicals have given their birth. The rise has been caused by overall growth of all types of libraries, expansion of library profession, increase in library science teaching programmes, proliferation of professional associations and creation of new documentation and information centres.
6.1.5. As regards the frequency it has been observed that majority of the periodicals are quarterly. There are no bi-monthly, fortnightly and weekly periodicals currently being published. Among the currently published titles, 40% are quarterly, 12.5% each monthly and half-yearly, 20% annual and 7.5% irregular.

6.1.6. Most of the L&IS periodicals in India were/are being published in English language. There are only two periodicals in Hindi now. A few regional language periodicals are being published. There are two periodicals having bilingual coverage. Three ceased titles had been multilingual.

6.2. L & IS Literature

6.2.1. The study infers that comparatively less attention is being paid by the authors in the field of library legislation, library building, library personnel, etc. Some topics lately become popular amongst the professional fraternity as a result of research elsewhere. These include indexing, citation analysis, information system, information transfer, information storage and retrieval, etc.; and considerable amount of works were done on these
areas by the specialists working at the DRTC, Bangalore, IASLIC, Calcutta, INSDOC, Delhi and some other institutions in the country.

6.2.2. The largest amount of literature in article form had been published on L&IS in general.

6.2.3. The contribution in the article form increased during 80's decade than that of 70's decade. The maximum production of articles had been made in 1982 and the minimum production was observed in 1971.

6.2.4. The maximum number of articles were contributed by single authors (2938, 61.20%). Foreign authors had also been contributing about 4% of the total literature.

6.3. **Case Study of LIS Bengali Literature**

6.3.1. Almost all the aspects of LIS were written in the article form by both senior and junior professionals and teachers of LIS schools. Even some specialised knowledge on a subject also had been reported by the specialist librarians. Research type articles containing the observations of the scholars in different facets of LIS are being published today. Now-a-days the articles of
newer technologies and their application in the field of LIS are also being incorporated.

6.3.2. Again a considerable number of articles in Bengali language are being coming out regularly in LIS periodical published in Bengali language and other regional languages. This indicates the spectacular growth of LIS literature in local and regional languages also.

6.4. Growth of literature in library and information science.

6.4.1. Relative growth rates and doubling time.

According to Price (1956, 1965), the scientific periodical literature grows with the annual growth rate of 7%. That means, for every 100 articles that exists at the beginning of a year, there will be 107 in existence at the end of that year. But this prediction would prove real if the trend of growth of literature would follow an exponential path. However, it has been noticed that the exponential growth trend of literature deviates largely due to various reasons as predicted by Anthony et al., in 1969. In this investigation, the relative
growth rate (RGR) of Indian library and information science periodical literature did not follow the prediction of Price (1956, 1965). The RGR both for articles and pages decreased gradually from 0.425 and 0.39 in 1970 to 0.070 and 0.08 in 1985 respectively. As a result, the doubling time in library and information science periodical literature during '70 to '85 increased from 3.75 years to 7.15 years for articles and 3.97 years to 6.91 years for pages. The increase in the average doubling time for articles was more prominent than that of doubling time for pages. Therefore, from this investigation it can be concluded that the doubling time of library and information science periodical literature is about 7 years or 8 years in average. Hence, it is noticed that doubling time doubles in the next decade and if the growth rate of library and information science literature continues the same rate it grew from 1970 to 1985, then it can be guessed that in the beginning of the twenty-first century the doubling time of the literature would increase 14 years or so. In this investigation as the RGR and Dt(a) and Dt(p) were measured taking the small interval of time, so it would be able to predict the actual growth rate of the literature correctly.
But sometimes the growth rate might not increase uniformly. Then the average doubling time may deviate to some extent from the actual prediction. Therefore, the relative growth rate and the doubling time calculated over the RGR are better for assessing the growth of library and information science periodical literature.

6.4.2. The modified exponential growth curve.

In this present study the periodical literature of library and information science showed an exponential trend during the years of observation. When observed through its actual growth points, it tended towards a saturation point with a K-value of 235 articles when plotted with a modified exponential curve. In 1985 it reached 326 articles at its maximum, allowing us to predict that library and information science is a growing discipline which is now regularly enriched with newer thoughts, techniques. Otherwise, it would be observed that the number of articles at the end of the observed year will remain less than that of the K-value, which is the probable period of saturation. The K-value for library organisation is 10 and the articles reached 65 in 1985. Thus, there is an enough scope of
developing this sub-discipline. The K-value for library management is 25 and the articles reached 37 in 1985. It is also, thus, a growing sub-discipline. The K-value for library cataloguing is 10 and the article reached 13 in 1985. Therefore, this sub-discipline also developing, one. The K-value for library classification is 131 whereas the number of articles reached in 1985 was 14. Hence, the articles are very far to reach the saturation point. If the relative growth rate is considered 10, then it would require 10 years to reach the saturation point. Thus by 1995, the growth of the literature of library classification will be fixed. But this sub-discipline may change its trend of growth because throughout the world the research on library classification is going on. However, at present the trend of growth pattern proves in favour of its developing stage. The K-value for book selection and systematic bibliography is 11 and the number of articles at the end of 1985 was 20. The K-value for documentation is 28 and the articles reached 64 in 1985. The K-value for reference service is 17 whereas the articles reached 40 in 1985 and K-value for information sources and services is 21, whereas the article reached 27 in 1985. For the above 4 subdisciplines the K-values are less
than the number of articles in 1985. Therefore, the trend of growth pattern of all the four sub-disciplines is very satisfactory and indicates that the sub-disciplines are growing at a considerable rate.

6.5. Nature of research materials.

6.5.1. Generally, authors while preparing for articles consult different forms of research materials at various stages of their writing, which act as the sources of information and these materials are cited by them in the form of citations indicating that they depended on those materials while writing their articles. The analysis of these different forms of citation material would indicate author's preference for a particular type of document as well as the general trend and characteristics of research materials in the field of library and information science, since, the organisation of research materials in a library or in an information centre would very much depend upon the contemporary trend in research literature as well as authors' preference towards the research materials.

6.5.2. Of the 20 individual types of research materials on which the authors of library and information science
depended from '70 to '85 for writing their articles the journal type of research material was most prominent research materials in library and information science research and alone contributed 63% of the total citations. But the periodwise percentages of journal type citations from the total indicated an increasing trend in the use of journal citations from '70-'85. The contribution of a particular journal towards the journal type citations of the discipline was drawn through journal total-type total ratios, the larger the ratios, the less was its use. Herald of Library Science, IASLIC Bulletin, Annals of Library Science & Documentation attained the minimum value indicating their journal usage in higher percentages. The next prominent research materials after the journals, upon which the authors of library and information science depended for their professional writings from '70-'85 were the conference proceedings, which contributed 21% of the total citations. The next important research materials were books which contributed 10% citations. Analysis of book citations by individual journal however, did not show any trend of book usage from '70-'80. The extent to which book material is cited has some relevance to the question of its age, since there seems to
be a correlation between the two. The lower the rate of book citation, the shorter the half-life found in the subject-field (Meadows 1974). A correlation between the use of journal citations and book citations showed in this investigation that they were negatively correlated and were significant at 0.11% level (Journal Citation 63%, whereas book citation 10%). Unlike journal citations, book citations showed fluctuations in their percentages through different time intervals. Among the less prominent research materials monographs ranked first and it contributed 3% of the total citations in library and information science from '70-'85.

6.6. Self-citation rates in the citations of the LIS periodical literature.

6.6.1. Self-citation is a very common phenomena in any periodical literature. With the help of self-citation authors try to link between the present and past literature and as a result authors' present work is proved authentic. The rate of self-citations have much importance when viewed from the angle that present literature is the continuation of the past published literature or bears the relevancy with the past work. However, the self-citation rates may fluctuate within the range of 8% to 16% depending upon the
stage of development of a subject. In this present investigation it was noticed that the rate of self-citation was about 12% in LIS in general and an average of 10% ± 3% in different subdisciplines of LIS, whereas the self-citation rates varied from 8% to 14% in other subdisciplines. The percentage analysis of different categories of self-citation revealed that the J/J category was more popular in LIS literature contributing to almost half (43.07%) of the total. The lowest percentage was found for the single authors citing their joint publications. However, the proportions of joint authored and single authored self-citations to their respective joint authored and single authored articles remained more or less equal. The chi-square value did not suggest any consistent trend either between the authorship of the articles and self-citations or self-cited authors and their self-citations, except the tendency for articles with joint self-citations to occur more often in the discipline. Therefore, the amount of self-citation is not related to the number of authors of a particular article.

The percentages in different age groups decreased gradually with age suggesting that as the age of the
cited material increased its relative use decreased. The 50% coverage of periodical literature by 10 years, somehow, was similar to its half-life reported by this investigation. Slightly less than 20 years were needed to cover 50% of book citations. The percentages of different age groups decreased gradually with age. The maximum percentages of journal citations in library and information science was achieved by 0-5 age group in all the period range.

6.7. Age of literature

It is known that the use of periodical literature of a discipline reaches maximum after some period from their date of publication and thereafter its use decreases gradually. Keeping this view, the rate of obsolescence has been calculated through citation analysis. In turn, half-life of library and information science periodical literature can also be predicted by this observation. From this study no idea about the identification of the obsolete document will obtain, only it can be able to predict that a certain portion of the literature becomes obsolete with the passage of time. A decrease does not imply a decrease in the value of the information contained in the document, but it is not simply cited
by the authors in their writings. From this study it can be concluded that 25% of the journal citations were 5 years old and 50% of the literature were 10 years old. Thus, the half-life of LIS periodical literature can be predicted as 10 years only. The book citations were older than that of journal literature. It is observed that 50% of the book citations are more than 20 years old. In case of sub-disciplines of library and information science periodical literature different rates of obsolescence were observed. 50% of the journal citations belong the age group from 10 to 15 years and book citations were naturally much older, which belong to the age group of 15 to 30 years. The percentages of different age groups gradually decreased with the age from which it can be predicted that as the age of the cited materials increased, their relative use decreased only. Therefore, it can also be concluded that the library and information science periodical literature is growing at a fast rate and within 0-5 age group the journal citations are reappearing maximum in all the period range. Thus the generation of new ideas or reinterparation of the old concepts is achieved at a greater exponential rate which shows the positive growth trend in this discipline.