

# Preservation And Conservation Of Library Materials As Reflected Through Library And Information Science Abstract (1971-2009): A Review Work

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## Abstract

The concept of preservation is included with the maintenance of libraries and archives since ancient times. Libraries need to preserve its collection in order to protect and preserve the history and culture of a nation for the posterity. Preservation is considered as the fundamental and an important task of the libraries. Traditionally some organic and natural methods were used to keep the books and other materials physically usable for a long time by slowing down or preventing their decay. Then we developed a more advanced way of preserving the materials in digital format. Though digital preservation needs constant attention still it is a long-term storage of information. This study is a review work from the Library and Information Science Abstract [LISA]. The study aims to know about the various traditional and digital methods of preservation and to identify the principal language of the research works and the journal in which maximum works were done.

**Keywords:** Preservation, LISA, Traditional Preservation, Digital Preservation

## INTRODUCTION

Preservation is a branch of library and information science concerned with maintaining or restoring access to artifacts, documents and records through the study, diagnosis, treatment and prevention of decay and damage [9].

It is the protection of cultural property through activities that minimize chemical and physical deterioration and damage and that prevent loss of informational content. The primary goal of preservation is to prolong the existence of cultural property [1].

## NEED FOR PRESERVATION

Preservation is a fundamental role and responsibility of the library. Libraries and information centers do not just collect materials; they also provide access and bring together various documents and research materials that are scattered worldwide while protecting the originals.

So, preservation is needed to assure the long-term uninterrupted access to the intellectual content of the library's collections, either in original or in re-formatted form. Preservation allows for the continuity of the past with the present and the future [9, 10]. It is an ongoing activity that is a part of the normal workflow. Awareness of this & a sense of individual responsibility must be fostered. Library and archival collections represent an investment that preservation can protect.

In today's digital age the society is using digital technologies to create knowledge and share it. Preserving the digital materials of today is critical to preserving the nation's history and culture. As the libraries are committed to collecting and preserving the cultural heritage and historical documents so it is their duty to collect and preserve the digital heritage for current and future generations.

## **PRESERVATION AND CONSERVATION**

Preservation and Conservation has become an important concept now a days. It should be distinguished from conservation which refers to the treatment and repair of individual items to slow decay or restore them to a usable state. Conservation is occasionally used interchangeably with preservation, particularly outside the professional literature. Although preservation as a formal profession in libraries and archives dates from the twentieth century, its philosophy and practice have roots in many earlier traditions [1,4]. In library science, preservation is treated as an active and intentional process, as opposed to the passive sense of preservation that might be applied to paleontological or archaeological finds. The survival of these items is a matter of chance, from an information science perspective, while the preservation of them after their discovery is a matter of intentional activity. In common practice preservation deals with the maintenance aspect and conservation with the remedial treatment and restoration of the already damaged specimen. the concept of repair and restoration falls under the purview of conservation but repair+ restoration +observation falls under the arena of preservation [6]. So, Preservation refers to much broader area under which the concept of conservation is a part.

## **DIGITAL PRESERVATION**

Digital preservation is the management of digital information over time. Preservation of digital information is widely considered to require more constant and ongoing attention than preservation of other media. Digital preservation can therefore be seen as the set of processes and activities that ensure continued access to information and all kinds of records, scientific and cultural heritage existing in digital formats [3]. This includes the preservation of materials resulting from digital reformatting, but particularly information that is born-digital and has no analog counterpart. Digital preservation is defined as: long-term, error-free storage of digital information, with means for retrieval and interpretation, for the entire time span the information is required for [5].

## **IMPORTANCE OF DIGITAL PRESERVATION**

Digital preservation helps providing global access to materials.

- Digitization applies to photographs, books, maps, artwork, documents, microforms, negatives, objects and more.

- The film can be scanned in the future as technology changes.
- Digitization can bring life to faded or worn documents through processing of grey scale images which can bring about very fine text, graphics and even data which was not previously possible to make out.
- Optical character recognition makes text images word searchable for research. Images can also be indexed to begin and create character needed for cataloguing and further enhancing the collection [5].
- Water marks can be used to protect and identify images along with personal security.

### **TRADITIONAL PRESERVATION**

Essentially the library is a repository of books and other non-book materials to be used by the users. The total collection of library materials is stored and preserved if the library exists. Books and other paper-based materials are the major constituents of the library. It is the social responsibility of a librarian to keep all the books and other library materials physically fit to be used by the readers. The basic materials and constituents of the physical entity of library materials are mostly organic and these are susceptible to natural decay and deterioration. If the environmental condition is adverse, the process of decay and deterioration is accelerated. In a modern Library there are many printed or non-printed non-book materials which are paper based such as journals, newspapers, theses, conference and seminar papers, pamphlets, reports, and the like. Special materials are also there in the library such as maps, graphic materials, audio-visual materials, and various other types [6,7]. All these kinds of materials need to preserve and conserve in a proper way in order to use for the readers.

The exhibition of archive and library materials has the potential to damage documents and can even lead to loss if security measures are inadequate. Custodians of holdings should be aware of the risks involved from exposure to inappropriate environmental conditions, unsafe support methods and inadequate security provision and strive to maximize the safety of items during periods of exhibition. Areas of concern should include temperature, relative humidity, light, support structures, security measures and disaster risks. Each of these areas can be complex and extensive in terms of choosing the right parameters and equipment and making provision for a suitable and secure environment. In order to achieve this, one objective must be to remove hazards that are unacceptable and to reduce any remaining risks to a degree that is considered tolerable bearing in mind the need to provide access to the exhibits [9].

### **OBJECTIVE**

The main objective is to study the nature of work and the various activities in the field of preservation as it is a continuously changing activity.

The specific objectives are:

- To study different traditional and digital methods of preservation.
- To know the developments in the digital technology for preservation as well as how the traditional methods persist in this digital era.
- To know in which language maximum works were done.
- To study the number of works per year.
- To study which journals are mostly used in this subject.

**METHODOLOGY**

- The range of time period of the study was chosen from 1971 to 2009.
- The total time range was divided into 4 phases: a) 1971-1980 b) 1981-1990 c) 1991-2000 d) 2001-2009.
- The abstracts of research papers were collected by random sampling method from the Library and Information Science Abstracts (LISA) from the Central Library of the University of Calcutta.
- The data were analyzed using Microsoft Office 2007.
- Conclusion was drawn from the results of the study.

Parameters used are: a) Language b) Author c) Publication type  
 d) Source/Journal e) Work per Year.

**SCOPE & LIMITATION**

The study is divided into 4 phases for the following reasons: a) It was observed that how the preservation work gradually developed in the first 10 years. b) After the initial development how the process of preservation started in the digital area in the next 10 years. c) Then it was observed in the following 10 years that how both the traditional & digital methods of preservation were practiced simultaneously and d) in the last 9 years the focus is on the traditional preservation to know how the traditional methods persist in this digital era.

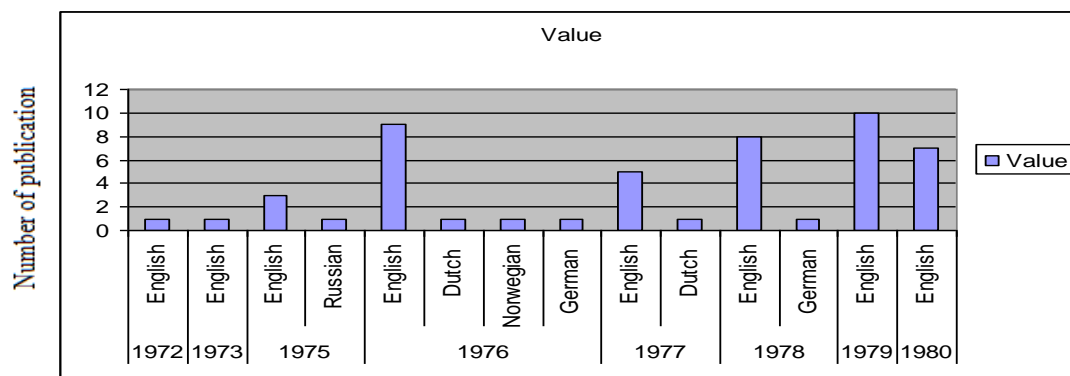
Due to random sampling the year 1981 reflects no study in this work.

**GRAPHICAL ANALYSIS**

**Criteria: Language**

1971-1980

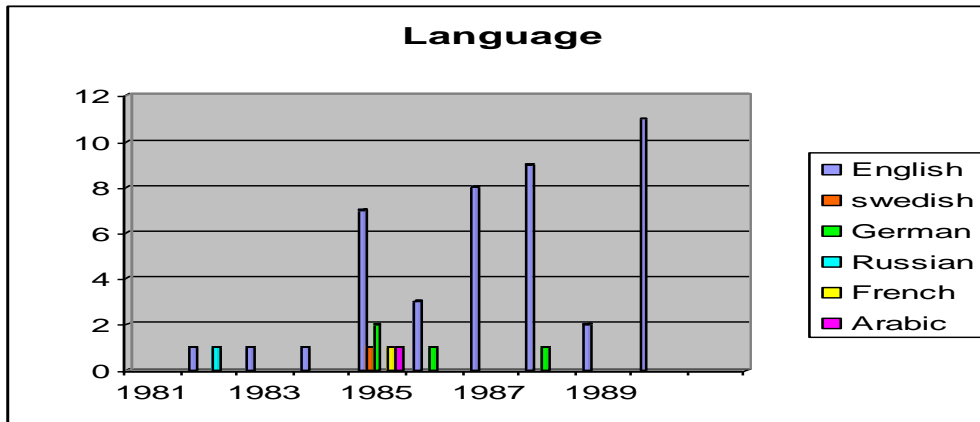
Figure 1: Year wise distribution of different languages of works



In the above graph, the languages of the selected articles according to the years are consulted. The fifty articles are written in varied languages like English, Russian, Dutch, Norwegian, German etc. In the years 1972, 1973, 1979 and 1980 all the articles are in English. The utmost variation in language is seen in the year 1976 where each of the 4 articles are written in Four different languages.

1981-1990

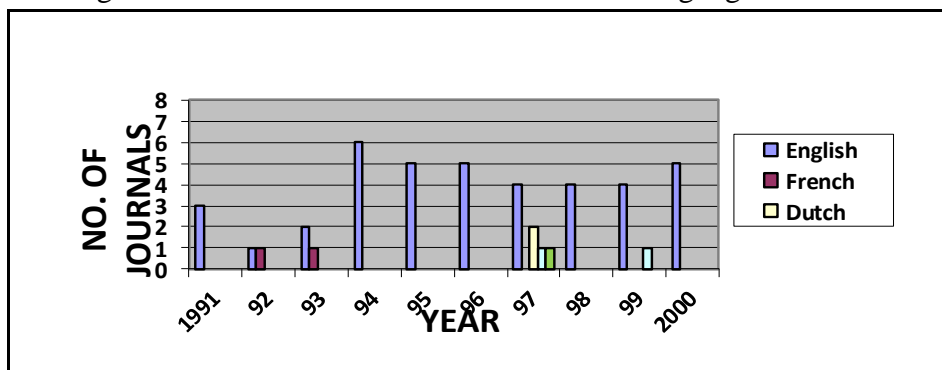
Figure 2: Year wise distribution of different languages of works



The diagrams represent the number of use of different languages in each year. The English language is used for the maximum number of times. The next position is of the German language. In the year 1990 all works are in English language and the year 1985 shows maximum variety of languages in works.

1991-2000

Figure 3: Year wise distribution of different languages of works

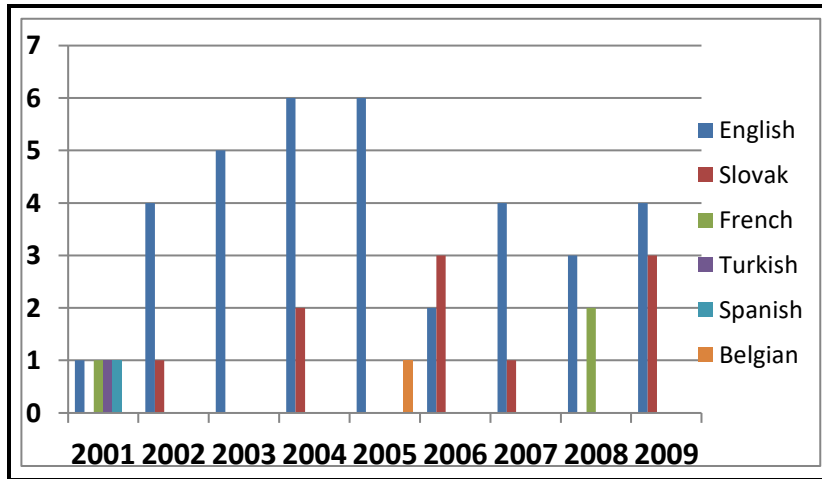


The graph depicts the number of languages in which the articles have been written. 5 languages have been shown in the graph with different colors. Most of the articles are written in English. The next position is of the French language. In the year 1991, 1994, 1995, 1996, 1998 & 2000 all works are in English language and the year 1997 shows maximum variety of languages in works.

The diagrams represent the number of use of different languages in each year. The English language is used for the maximum number of times from the year 2001-2009. The next position is of the Slovak language. In the year 2003 & 2005 all works are in English language and the year 2001 shows maximum variety of languages in works.

2001-2009

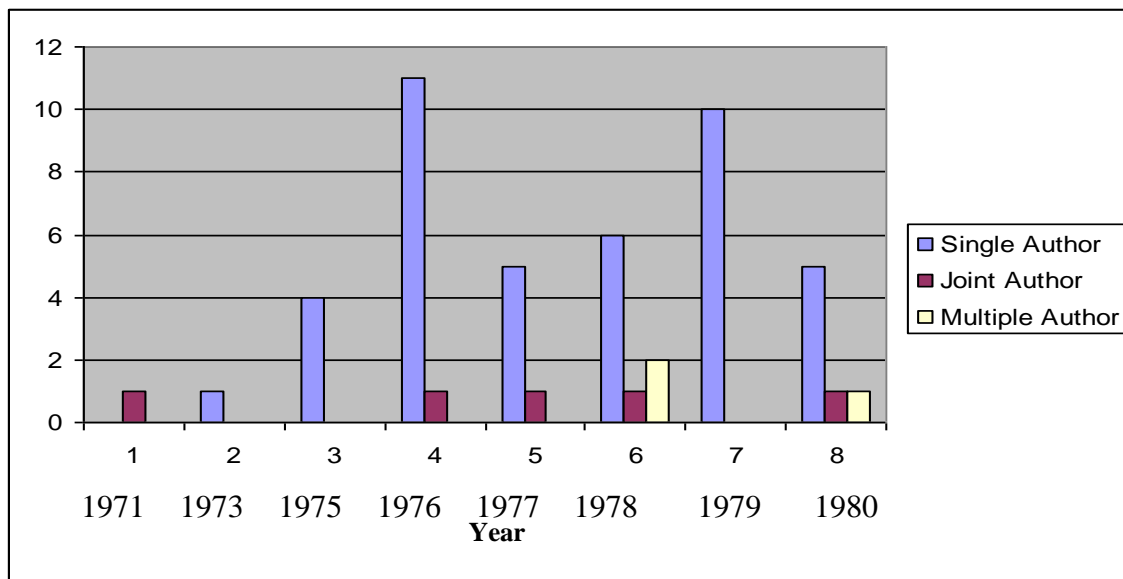
Figure 4: Year wise distribution of different languages of works



Criteria: Author

1971-1980

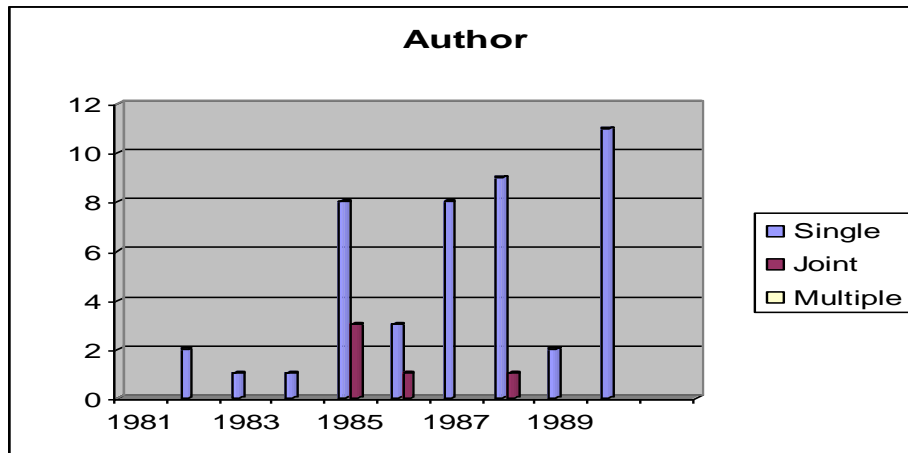
Figure 5. Year wise distribution of Authors



In the graph above, the no. of Authors of the most relevant articles is shown according to the years. It is categorized in three different criteria, i.e. Single author, Joint Author, and Multiple Authors. In the 50 articles, we can see that most of them are written by single authors, only 5 of them are joint authored. The numbers of Multiauthor articles are significantly less, only in the years 1978 and 1980 there are 2 and 1 articles of this category.

1981-1990

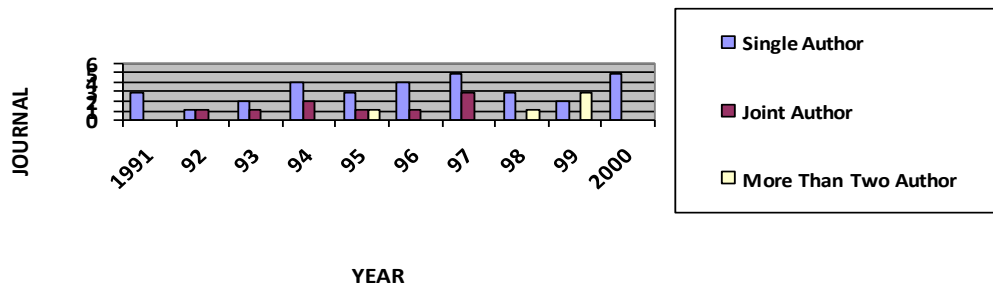
Figure 6. Year wise distribution of Author



The figure shows that most of the articles are of single authors and there is no article of multiple authors. In the year 1990 all the works have been done by single authors. Though the works by joint authors are very few, but still it is remarkable in 1985.

1991-2000

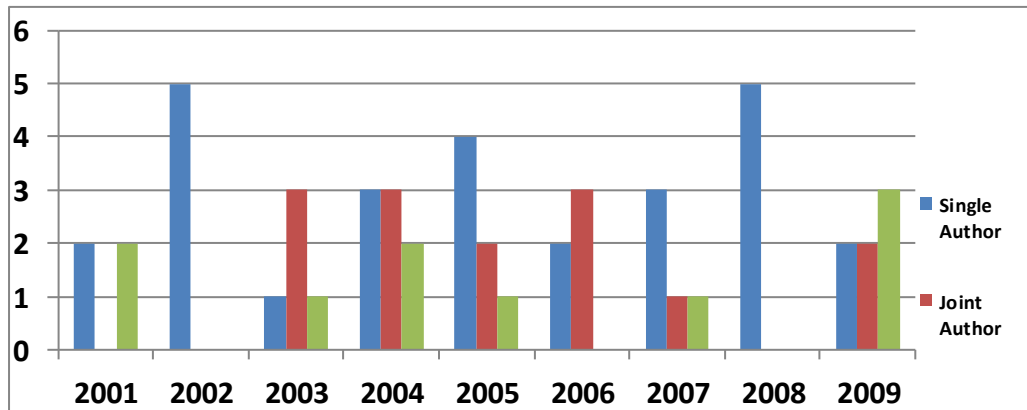
Figure 7. Year wise distribution of Authors



There are three legends i.e single, joint and more than two authors are shown with different colors. Most of the articles are written by single author. In 1995, 98 and in 99, some of the articles are written by more than two authors.

2001-2009

Figure 8. Year wise distribution of Authors

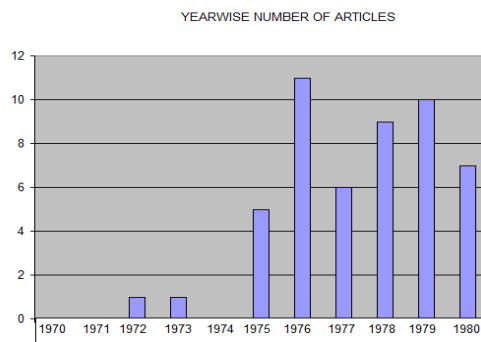


The figure shows that most of the articles are of single authors and there is no article of multiple authors. In the year 2002 & 2008 all the works have been done by single authors. Therefore, we can analyse from the graph that most of the research works (28 research works) from 2001-2009 has been done by single author and 14 research works have been done by joint author and rest eight (8) research works have been done by more than two authors.

**Criteria: Number of Research Works**

1971-1980

Figure 9. Year wise number of research works

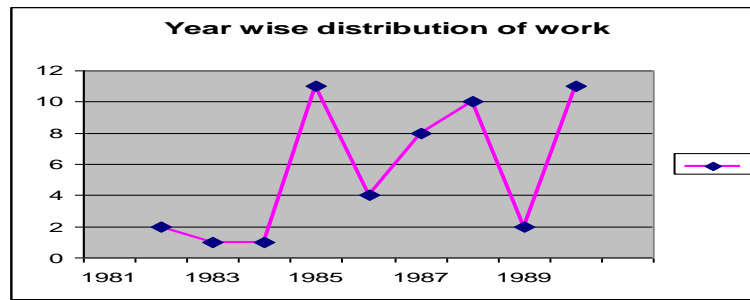


It is clear from the above bar diagram that the highest number of research article is 11 and it has been done in the year 1976. Then in 1979 the total number of works is 10.

1981-1990

Figure 10. Number of works per year

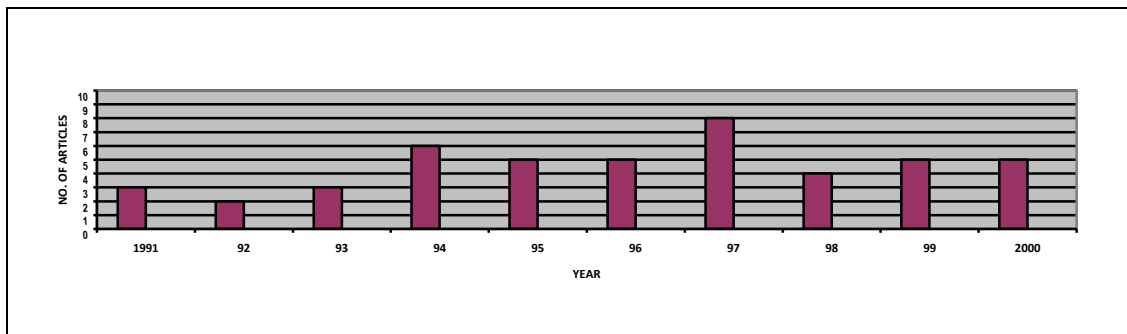




It is clear from the above line diagram that the highest number of research article is 11 and it has been done in both the year 1985 and 1990. Then in 1988 the total number of works is 10.

1991-2000

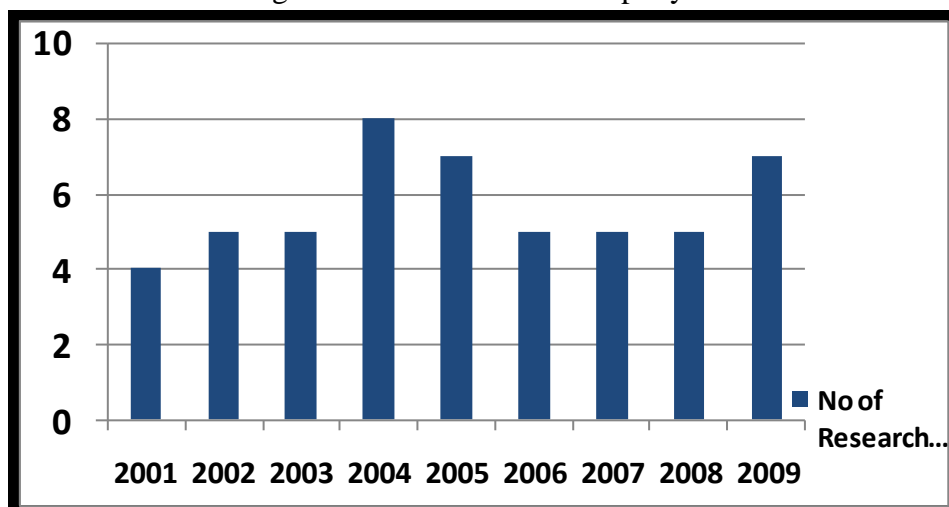
Figure 11. Number of works per year



From the graph, it can be pointed out that the highest number of journals is cited in the year 1997(8 journals). The lowest number of journals is cited in the year 1992.

2001-2009

Figure 12: Number of works per year

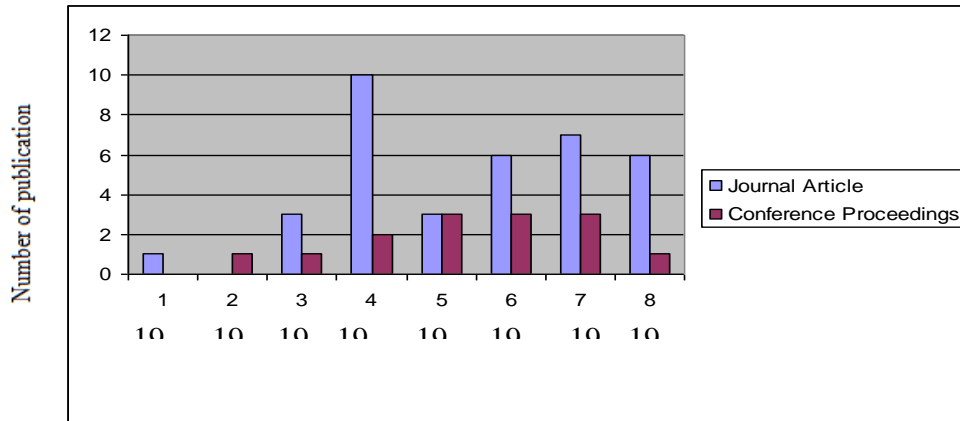


It is clear from the above bar diagram the highest number of research work has been done in 2004 i.e. eight (8). Then in 2005 & 2009 the total number of works is 7.

**Criteria: Publication Type**

1971-1980

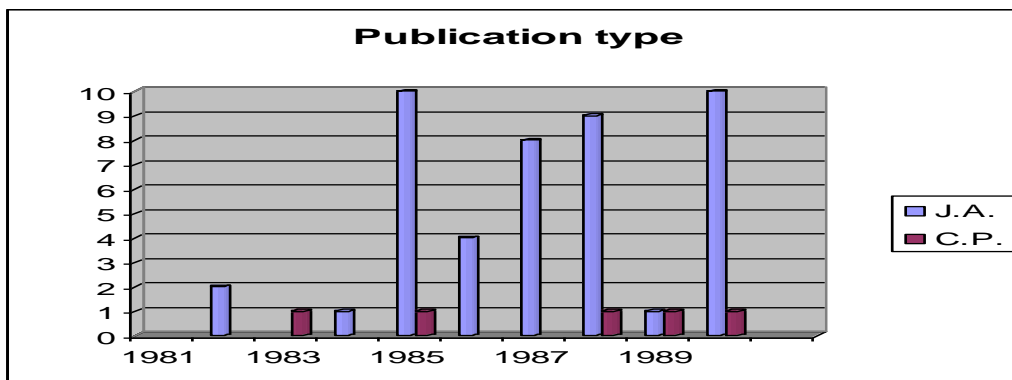
Figure 13: Type of publication per year



In the graph above, the Publication types of the most relevant articles according to the years is described. Here analyzing the articles, we get two most significant types of publication namely Journal Article and Conference Proceedings. In the graph. we can clearly notice, that most of them are journal articles. The number of Conference proceedings are relatively lesser than it. Only in the year, 1977 the numbers of both the types are same.

1981-1990

Figure 14: Type of publication per year

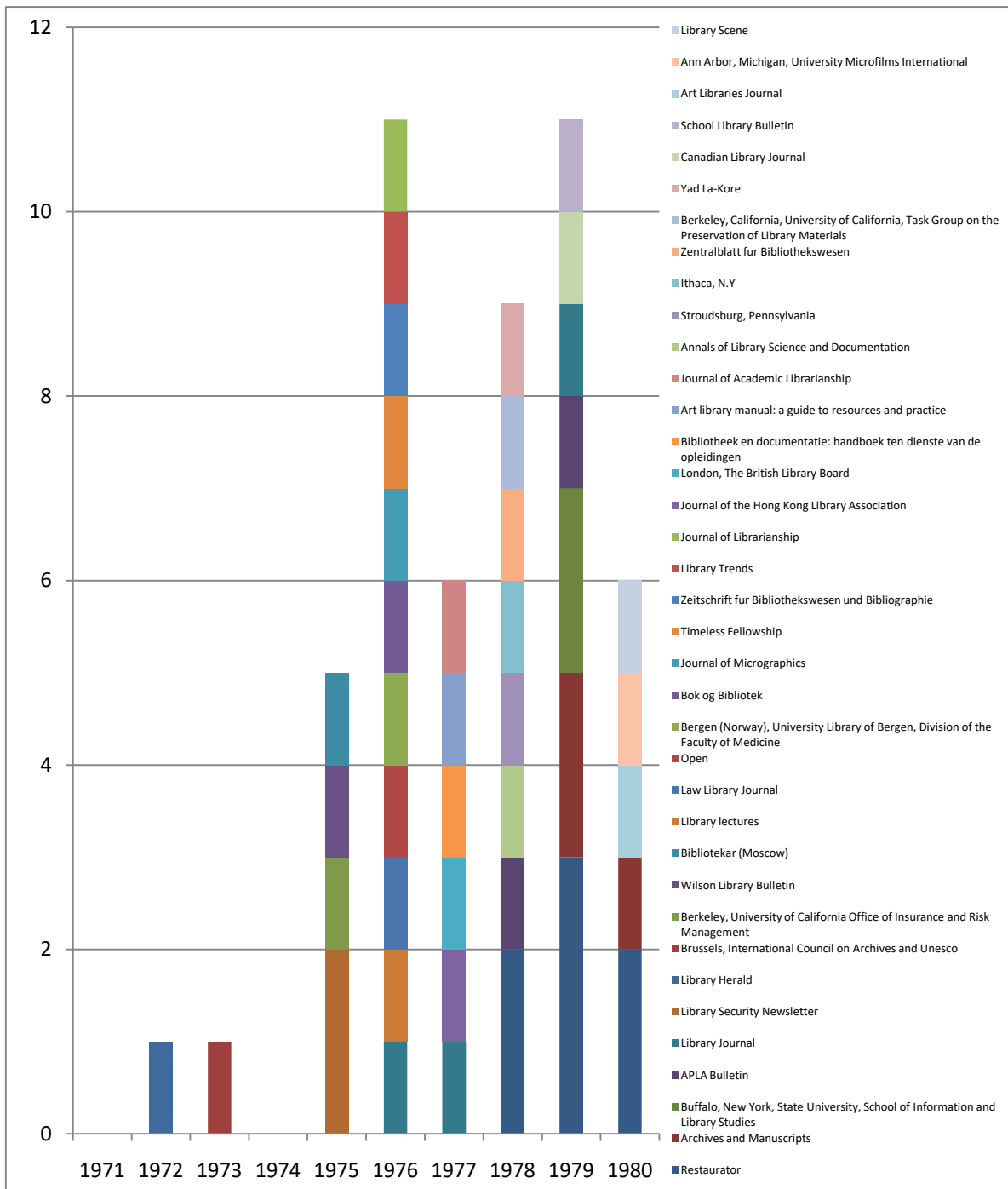


The cylindrical diagrams show that most of the articles are journal articles and some are conference proceedings.

**Criteria: Frequency of Use of Journals**

1971-1980

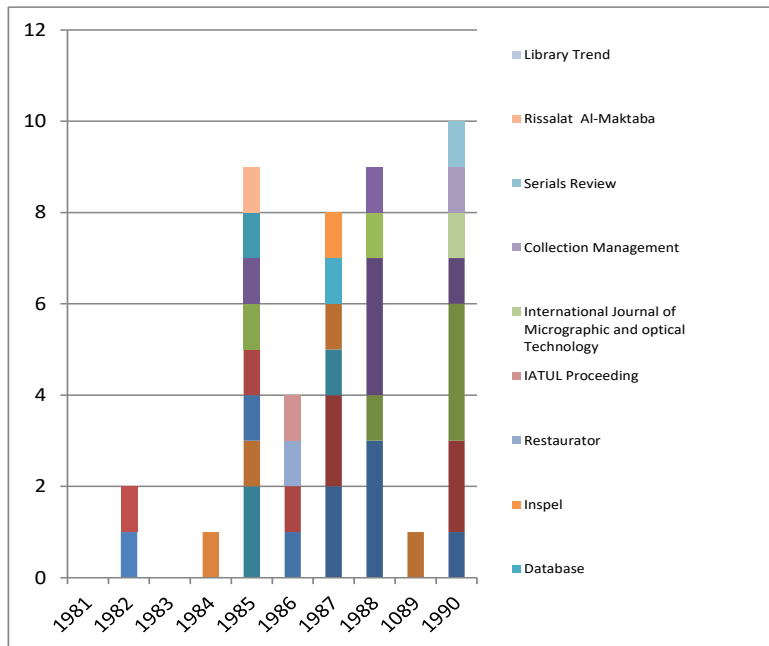
Figure 15: Frequency of use of journals per year



The bar- diagrams reveals the number of use of journals in each year. The year 1971 and 1974 is blank as there is no journal article. The only article in this year is a conference proceeding.

1981-1990

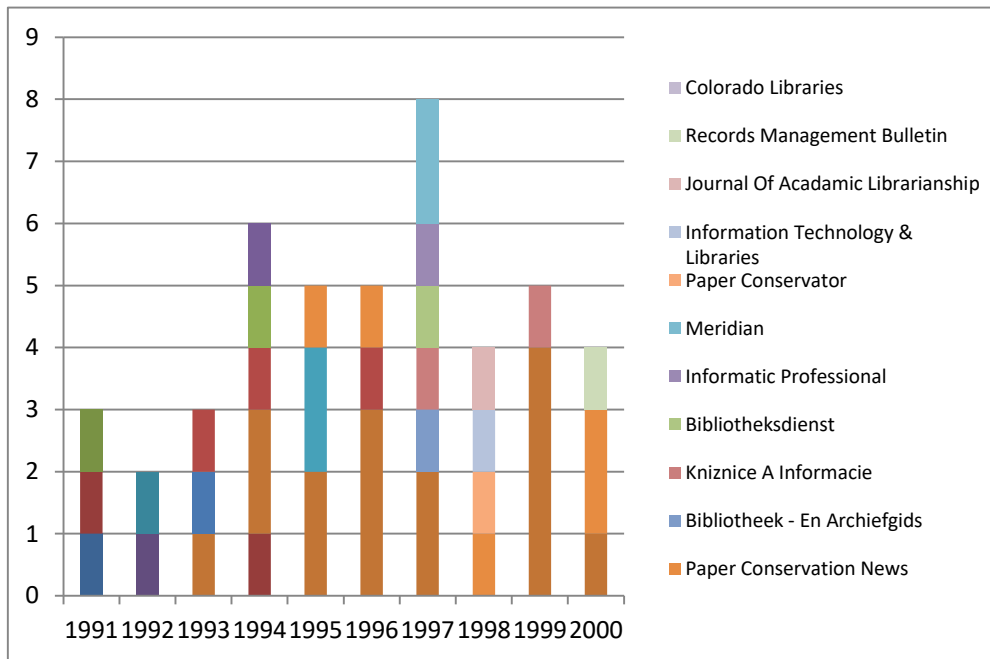
Figure 16: Frequency of use of journals per year



The bar-diagrams reveals the number of use of journals in each year. The year 1983 is blank as there is no journal article. The only article in this year is a conference proceeding.

1991-2000

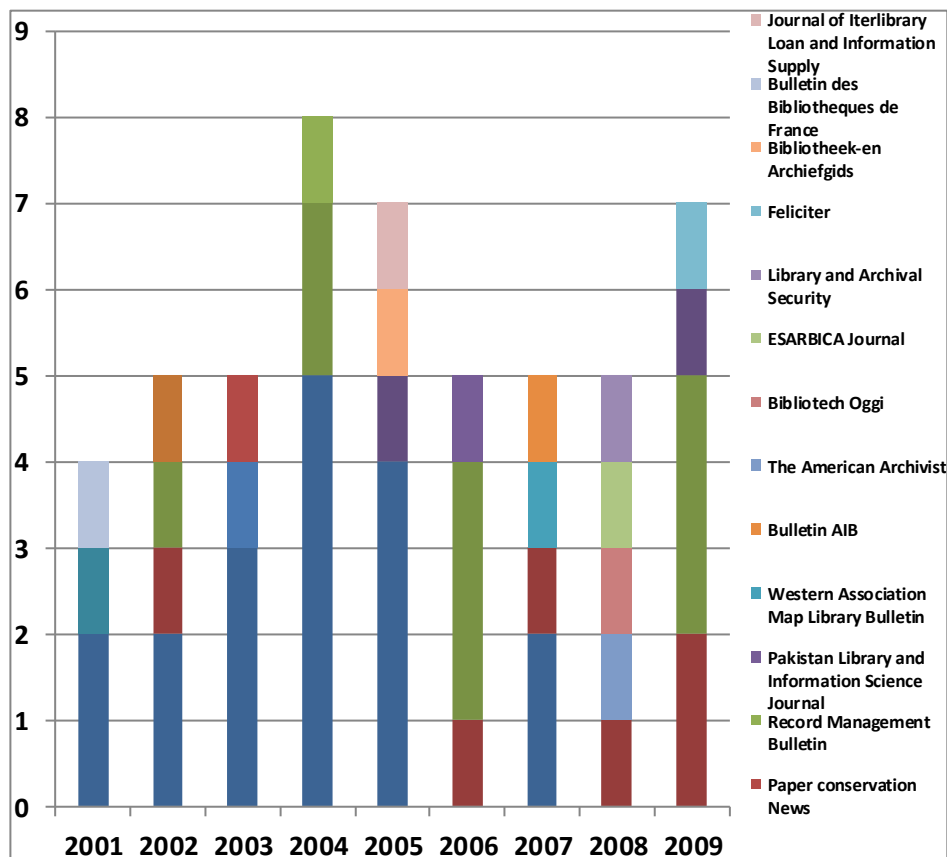
Figure 17: Frequency of use of journals per year



The different journal cited in consecutive years are shown with different colors. 22 journals in total have been cited by different authors. Out of these twenty-two journals the most frequently used journal is Restaurator that have been used almost in every research works in every year.

2001-2009

Figure 18: Frequency of use of journals per year



The bar- diagrams reveals the number of use of journals in each year. It is to be pointed out that twenty journals have been used in research work in traditional preservation from the year 2001-2009. Out of these twenty journals the most frequently used journal is Restaurator that have been used almost in every research works in every year. The next position in use of journal is International Preservation News.

## DISCUSSION

From the result and analysis, it is clear that:

- The languages used are: English, German, Slovak, Swedish, Russian, French, Turkish, Spanish, Belgian, Arabic and Dutch. Total number of articles in English in all over 39 years (1971-2009) is 161. Out of 200 articles 161 are written in English. But in every 10 years there are also some articles written in different languages as mentioned above but the number is very few. So, we can say that English is the maximum used language in these 39 years.
- The author responsibility types are: single, joint, and more than two authors. Total number of articles by single authors is 147, by joint authors are 33 and by multiple authors is only 18 out of 200 articles.
- According to the year wise distribution of work, in 1971-1980 the highest number of research works has been done in the year 1976 and the total number of articles in this year are 11. The highest number of articles in 1981-1990 is 11. And this highest number of works has been done in the year of 1985 and 1990 both. There are 10 articles in the year 1988. From the year 1991-2000, the highest number of research works has been done in the year 1997 and the number of articles in this year is 8. But from 2001-2009 the highest number of research works has been done is eight (8) and this highest number of works has been done in 2004.
- There are two types of publications: a) journal article and b) conference proceedings. We get these two types of publication from 1971-1990 but from the year 1991-2009, we get only one type of article i.e., Journal Type. There are no conference proceedings. From 1971-1980 out of 50 articles only 14 are of conference proceedings and 36 are the journal article. But from 1981-1990 out of 50 articles only 5 are conference proceedings and 45 are of journal article. It reveals that preservation issue is highlighted mostly by individual initiatives as their research works. The initiatives at the organizational/ institutional levels are somewhat less.
- There are near about 102 journals of which the “Restaurator” is ranked 1<sup>st</sup> as the frequency of using this journal is the highest in the span of 39 years. It has published 2 articles in 1978, 3 articles in 1979 and again 2 articles in 1980. Similarly, from 1981-1990, it has published 2 articles in 1987, 3 articles in 1988 and 1 in 1990. Again in 1991-2000, it has published 14 articles and these are 1 in 1993, 2 in 1994 and 1995, 3 articles in 1996, 2 articles in 1997, 4 articles in 1999 and only 1 article in 2000. From 2001-2009, this journal published 5 articles in 2004, 2 articles in 2001, 2002 and 2007 respectively, 4 articles in 2005 and 3 articles in 2003. The journal naming “Audio visual Librarian” is ranked 2<sup>nd</sup> in the frequency of using this journal during 1971-2009.
- In this analysis different methods of traditional and digital preservation are observed. Traditional methods that are observed are deacidification, manuscript preservation, salvage method, fumigation, paper permanence, bleaching method. And in case of digital preservation the methods that are found

most remarkable in the research work of 39 years are as follows: -microfilming, preservation of electronic resources, audiovisual preservation, micro-graphics, optical storage.

## CONCLUSION

From the present study it can be concluded that, 1. English is the principal language for communication of research works. 2. Maximum works were done in the year 1976 and 1985 i.e., in the first 20 years of the study. 3. Among different areas of traditional and digital preservation, a) preservation of paper & paper permanence and b) audio visual preservation and conservation is the leading area respectively. iv) The journal Restaurator is the most used journal in this subject.

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