

# INTERNATIONAL JOURNAL OF LIBRARY AND INFORMATION SCIENCE (IJLIS)

<https://iaeme.com/Home/journal/IJLIS>

**ISSN Print: 2277-3533**

**ISSN Online: 2277-3584**



**Published By**



## **IAEME Publication**

Plot: 03, Flat- S 1, Poomalai Santosh Pearls Apartment,  
Plot No. 10, Vaiko Salai 6th Street, Jai Shankar Nagar, Palavakkam,  
Chennai - 600 041, Tamilnadu, India.  
Email: [editor@iaeme.com](mailto:editor@iaeme.com)





# DIGITAL PRESERVATION STRATEGIES OF MANUSCRIPTS AND RARE MATERIALS: A STUDY FROM NLI, KOLKATA

Sadhana Goswami<sup>1</sup> & Zabeen Ahmed<sup>2</sup>

<sup>1</sup>Department of Library & Information Science, University of Science & Technology,  
Meghalaya, India.

<sup>2</sup>Department of Library & Information Science, University of Science & Technology,  
Meghalaya, India.

## ABSTRACT

*The paper highlights the aspects of digital preservation adopted by National Library of India (NLI), Kolkata of the manuscripts and rare materials. Here, also enlightened the recent measures and strategies used by the NLIK (National Library of India, Kolkata) to preserve its precious collection of manuscripts and rare materials for the use of future generation. The paper also deliberates about the hardware and software available for digitization process in the library. Being the most important and largest library of India, this study on NLIK will definitely help the different stakeholders from digitization point of view.*

**Keywords:** Digital preservation; digitization; strategies; manuscripts; rare materials; NLIK.

**Cite this Article:** Sadhana Goswami, Zabeen Ahmed. (2025). Digital Preservation Strategies of Manuscripts and Rare Materials: A Study from NLI, Kolkata. *International Journal of Library and Information Science (IJLIS)*, 14(2), 195-207.

DOI: [https://doi.org/10.34218/IJLIS\\_14\\_02\\_015](https://doi.org/10.34218/IJLIS_14_02_015)

## 1. INTRODUCTION

Now a days, preservation of manuscripts and rare materials through digitization has added new dimensions for its storage, however, there is need to offer systematic knowledge about how to information retrieve and disseminate of information<sup>1,2,3</sup>. Technology helps us to access the cultural heritage from storage of digital memory<sup>4,5</sup>. However, technology creates some opportunity as well as raise challenges also. Libraries and LIS professionals are now being challenged by new technology; like multimedia, internet, www and other virtual computer technology. The world has drastically changed over the decade and many new techniques and tools have evolved to preserve our valuable and unique heritage. Now-a-days the technology has brought the great opportunity to the field of preservation of manuscripts with the facility of digital preservation<sup>6,7,8</sup>. Digital preservation refers to the process of ensuring long-term access to digital information despite evolving formats, technologies, and risks of obsolescence. For institutions like the **National Library of India (NLI)**, Kolkata adopting digital preservation safeguards cultural and scholarly heritage for future generations.

Manuscript and rare materials contain precious information and they are rarely found elsewhere. Many of the manuscripts and rare materials related with ancient period helps to preserve national heritage of country<sup>1,2</sup>. In this study, manuscript represent the unpublished handwritten documents like palm leaves, bark, correspondence, diaries and rare materials includes published and printed books, monographs, periodicals, newspapers, religious texts, paintings, illustrations, magazines and Tibetan xylographs available in the National Library of India (NLI), Kolkata. As per National Library of India, Books that are published or printed in India prior to 1860 are one of the major criteria to be place in Rare Book Division. The National Library of India Kolkata is the largest library in India in terms of volume and public archives. It plays an important role as an assistant in the study of various fields of knowledge and on the other hand as a preserver of the cultural heritage of our vast country. In addition to its regular collection, the library holds around 13,256 volumes of historically significant manuscript and rare material in various forms, which draw in researchers and visitors from all over the world. The National Library of India, Kolkata has preserved and made accessible to the public a vast number of manuscript and rare material in its Rare Book Division.

## 2. METHODOLOGY

The study was conducted with literature search on various factors of preservation and conservation of manuscripts and rare materials, to make the study comprehensive and

purposeful. The study is a survey-based work for Data and Information collection. Data are collected from direct sources, taking personal interviews, through direct observation and using a specially designed and approved questionnaire for this purpose. Personal visit is also done to the National Library of India, Kolkata (NLI, Kolkata) for data collection.

### 3. DIGITAL PRESERVATION

"Digital preservation" is the preservation of materials created originally in digital format and never existing in print or analogue format, as well as materials that have been transformed into images using scanners, digital cameras, or other imaging technologies for access and preservation purposes from legacy documents and artefacts (printed documents, pictures, photographs, or physical objects)<sup>9</sup>. As per Online Computer Library Center, Inc, defines digital preservation as "the long-term error-free storage of digital information with retrieval and interpretation facilities for as long as the information is needed", where "retrieval" means retrieval<sup>10</sup>. The necessary digital files from long-term error-free digital storage without damaging the digital files stored without errors, and "interpretation" means that the retrieved digital files, which can be texts, diagrams, images or sounds, are decoded and converted into representations. that can be used to reach people. According to Cornell University Library (2005), digital preservation is the term used to describe a set of controlled procedures intended to guarantee that all types of documents in digital formats can be accessed for as long as needed and to shield them from physical loss, media failure, and obsolescence<sup>11</sup>. According to Association for Library Collection & Technical Services: A division of the American Library Association, "Digital preservation combines policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated contents over time<sup>12</sup>."

#### 3.1 Factors responsible for digitization

The availability of information resources has enhanced and accelerated thanks to technology and technological interventions. Digitalization makes manuscripts and rare items more quickly and effectively available on demand:

- To decrease physical handling of original manuscripts and rare materials.
- To promote access to manuscripts and rare materials globally.
- To preserve the manuscripts and rare materials for the future and longer use.
- To create a digital database

- To access and provide the digitized manuscripts and rare materials instantly on demand without hampering the original material.

#### **4. INITIATIVES IN DIGITAL PRESERVATION TAKEN BY NATIONAL LIBRARY OF INDIA (NLI), KOLKATA**

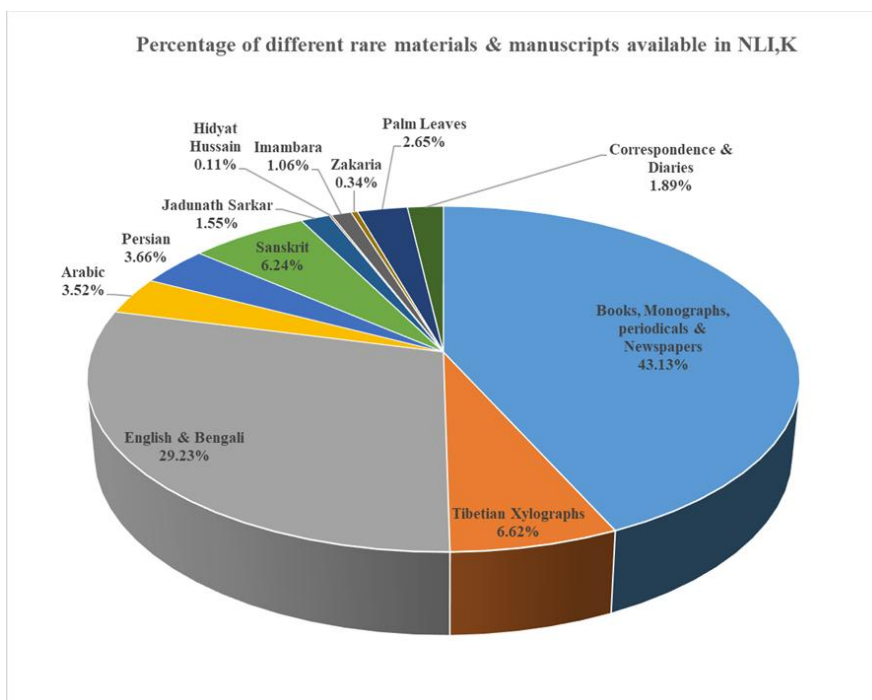
The National Library of India (NLI), Kolkata also preserved and made available to the readers a large number of manuscripts and rare materials in its Rare Book Division. The NLI, Kolkata, which is at the pinnacle of all Indian libraries, is highly worried about the long-term viability of its library materials. The library has established several divisions and sections for this purpose viz. Professional Divisions, Conservation Divisions, Administrative Division. Under these divisions different sections included viz. General Professional, Indian Languages, Foreign Languages, Rare Books, Preservation, Reprography, Computer Centre. All the divisions of the library work in a collaborative manner to protect its library materials from deterioration. After consultation with the concerned technical staffs of computer, reprography and rare book division, the strategies for different preservation techniques particularly digital preservation have been analysed. A detailed layout with technical flow out and analysis has been depicted below -

##### **4.1 Total holdings of Rare Book Division of NLI, Kolkata**

In this division, manuscripts, rare and valuable materials of the library are preserved and served to the readers and research scholars in the reading room of the division. No material housed in the division is allowed to be taken out and for that the division has to run its own reader's service with constant vigilance against mutilation or damages to the rare materials used by the readers. It has been estimated that the National Library of India, Kolkata possesses about 13256 vols. of historically important manuscripts and rare materials in different forms viz. monographs, periodicals, Newspapers, books, Correspondence, diaries, Tibetan Xylographs (Table-1 & Diagram-1). Total holdings of Rare Book Division of NLI, Kolkata are as follows:

**Table-1: Total holdings of Rare Book Division of NLI, Kolkata**

| SL. No.            | Printed Material                            |                     | Manuscripts (MSS)    |        |         |          |                                |                 |          |         |             |                          |
|--------------------|---|---------------------|----------------------|--------|---------|----------|--------------------------------|-----------------|----------|---------|-------------|--------------------------|
|                    | Books, Monographs, periodicals & Newspapers | Tibetian Xylographs | Special Language MSS |        |         |          | Special Persons Collection MSS |                 |          |         | Palm Leaves | Correspondence & Diaries |
|                    |   |                     | English & Bengali    | Arabic | Persian | Sanskrit | Jadunath Sarkar                | Hidayat Hussain | Imambara | Zakaria |             |                          |
| 1                  |   |                     |                      |        |         |          |                                |                 |          |         |             |                          |
| 2                  | 5717  | 878                 | 3875                 | 467    | 485     | 827      | 206                            | 15              | 140      | 45      | 351         | 250                      |
| Percentag          | 43.13                                       | 6.62                | 29.23                | 3.52   | 3.66    | 6.24     | 1.55                           | 0.11            | 1.06     | 0.34    | 2.65        | 1.89                     |
| Total              | 6595  |                     | 5654                 |        |         |          | 406                            |                 |          |         | 351         | 250                      |
|                    |   |                     |                      |        |         |          |                                |                 |          |         |             | 6661                     |
| <b>GRAND TOTAL</b> |   |                     |                      |        |         |          | <b>13256</b>                   |                 |          |         |             |                          |



**Diagram-1: Percentage of different rare materials and manuscripts available in NLI, Kolkata**

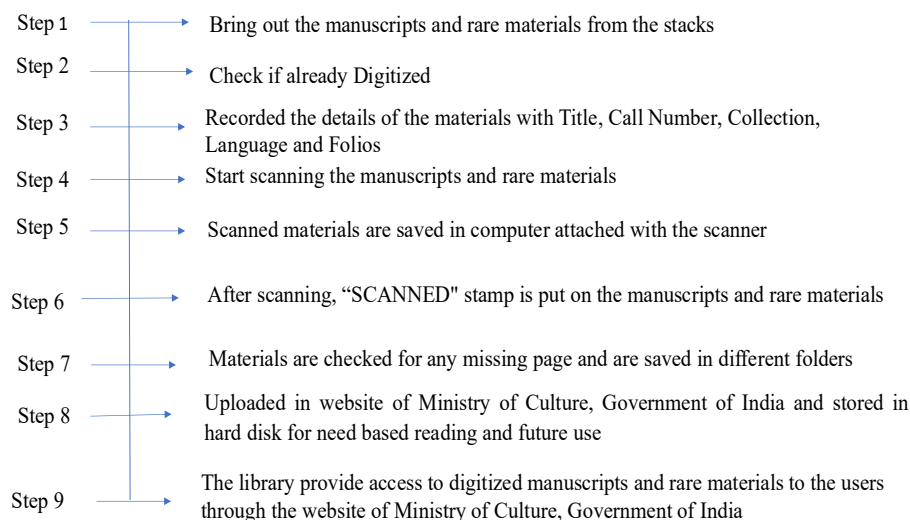
## 4.2 Computer Division

The National Library of India has an ICT setup consisting of campus wide Fibre Optic Cable based and wireless network. This division maintain the all strategies used for digital preservation of the manuscripts and rare materials of NLIK. Digitization programme has started from 2001 to till date using the open-source software named DSpace for the library digital preservation. The digitization of manuscripts and rare materials is carried out by the library itself and outside agency. The main purpose of digitizing the materials by the library is digitization is used as a tool for preservation of library materials, basically manuscripts and rare materials followed by increased access, historical and cultural value, academic importance and save the space respectively. The library provide access to digitized manuscripts and rare materials to the users through the website of Ministry of Culture, Government of India and are stored in hard disk for need based reading and future use. Till date the total number of digitised collections in NLIK is 21291, but till now 19333 nos. of materials are uploaded in website (Table-3 & Diagram-2). Digital Strategies such as refreshing, replication, migration and metadata attachment are used for digital preservation. In the case of digital preservation strategies, there is no set time period for implementing them. When a new, improved storage medium is introduced or when any type of damage to the data storage medium is discovered, the work is completed. NLI, Kolkata uses a variety of reformatting techniques for digitization, including taking pictures and producing paper facsimile reproductions of manuscripts and rare library materials. Images are saved and accessed digitally in several file formats. The images are stored in TIFF format and provided to the users in PDF, JPG and JPEG format.

## 4.3 Process of Digitization

The NLI, Kolkata is generally followed nine steps for digitization process. Figure-1 describes the steps about the digitization process for manuscripts and rare materials followed in the NLI, Kolkata. The scanning (Table-2) and verification process is completed in the reprography division of NLIK. After that the scanned material goes to the computer division for storage, uploading and user availability (Figure-1).

### Process of Digitization



**Figure-1: Digitization process using overhead scanner at the NLI, Kolkata**

The NLI, Kolkata has the following technology and software for digitising manuscripts and rare materials:

**Table-2: Total Available hardware and software for digitization of manuscripts and rare materials**

| Sl. No. | Hardware and software for digitization of manuscripts and rare materials | Name                         | Number | Remarks   |
|---------|--|------------------------------|--------|---|
| 1.      | Devices for digitization of manuscripts and rare materials               | Hybrid Camera (for scanning) | 2      | One is available in reprography Division and another is available in rare book Division, it is run by outsource agency under a digitization project |

|       |   |  |   |   |
|-------|---|--|---|---|
| 2.    | Software used for Digitization                                  | DSpace   | 1 | Open-source software  |
| 3.    | Stored digitized manuscripts and rare materials                 | In Cloud server (provided by National Virtual Library of India)                | 1 | Unlimited storage   |
|       |   | Hard disk  | 2 |   |
| 4.    | Reading the digitized manuscripts and rare materials            | Through website (Uploaded in Ministry of Culture, Government of India)         | – | <a href="https://indiaculture.gov.in">https://indiaculture.gov.in</a> |
|       | Reading the digitized manuscripts and rare materials (in house) | Computer (Designated place for reading all scanned document through Hard disk) | 2 |   |
| Total |   |  | 8 |   |

**Images of Hybrid camera for scanning the manuscripts and rare materials for digitization:**



**At Reprography division with the technical Staff Hybrid camera for scanning the documents**

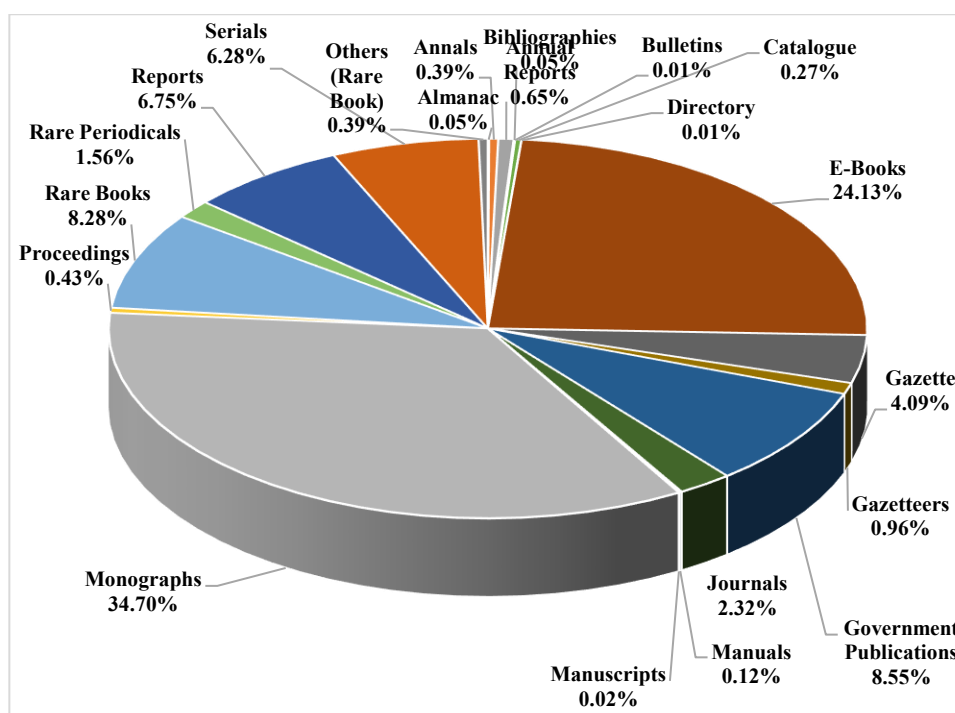


**Scanning the documents for digitization**

**Table-3: Total Numbers of materials digitized and uploaded in Ministry of Culture Website (<https://indiaculture.gov.in>) during 2010 to till date.**

| SL. No. | Materials digitized and uploaded in Ministry of Culture Website | Numbers | Percentage |
|---------|---|---------|------------|
| 1.      | Almanac   | 10      | 0.05       |
| 2.      | Annals  | 75      | 0.39       |
| 3.      | Annual Reports  | 126     | 0.65       |
| 4.      | Bibliographies  | 10      | 0.05       |
| 5.      | Bulletins   | 1       | 0.01       |
| 6.      | Catalogue   | 52      | 0.27       |
| 7.      | Directory   | 1       | 0.01       |
| 8.      | E-Books   | 4666    | 24.13      |
| 9.      | Gazette   | 791     | 4.09       |
| 10.     | Gazetteers  | 185     | 0.96       |
| 11.     | Government Publications   | 1653    | 8.55       |
| 12.     | Journals  | 449     | 2.32       |
| 13.     | Manuals   | 23      | 0.12       |
| 14.     | Manuscripts   | 3       | 0.02       |

|     |                    |              |       |
|-----|--------------------|--------------|-------|
| 15. | Monographs         | 6708         | 34.70 |
| 16. | Proceedings        | 83           | 0.43  |
| 17. | Rare Books         | 1600         | 8.28  |
| 18. | Rare Periodicals   | 302          | 1.56  |
| 19. | Reports            | 1305         | 6.75  |
| 20. | Serials            | 1214         | 6.28  |
| 21. | Others (Rare Book) | 76           | 0.39  |
|     | <b>Total</b>       | <b>19333</b> |       |



**Diagram-2: Percentage of total numbers of materials digitized and uploaded in Ministry of Culture Website**

## 5. DISCUSSION

The study highlights the recent measures and strategies used by the NLIK to preserve its precious collection of manuscripts and rare materials for the use of forthcoming generation. This study also reflects about the hardware and software available for digitization process in the library. In NLIK there is no defined time for applying digital preservation measures. The task is accomplished when a new, superior storage medium is introduced or when damage to the data storage medium is identified. NLI, Kolkata uses a number of digitization processes,

such as photographing manuscripts and generating paper facsimile reproductions of rare library materials. NLIK is generally followed nine steps for digitization process. Total eight numbers of hardware and software available for digitization of manuscripts and rare materials. Till date the total number of digitised collections in NLIK is 21291, but till now 19333 nos. of materials are uploaded in website (Table-3 & Diagram-2). Highest uploaded in website materials is monographs with 34.70% and other hand rare books, others (rare books) and manuscripts uploaded in website are gradually 8.28%, 0.39% & 0.02%. The adoption of digital preservation at the National Library of India, Kolkata, marks a significant step toward safeguarding the country's rich cultural and intellectual heritage. While challenges remain, the ongoing initiatives reflect a growing commitment to modernization, accessibility, and long-term archival stability. As India moves deeper into the digital age, the National Library's role in leading the digital preservation movement becomes ever more crucial.

## **6. CONCLUSION**

The National Library of India, Kolkata has very clear and serious vision about the digital preservation of the manuscripts and rare materials. All the digitized manuscripts and rare materials are uploaded in website of Ministry of Culture, Government of India and stored in hard disk for need based reading and future use. Basically, the library provide access to digitized manuscripts and rare materials to the users through the website of Ministry of Culture, Government of India. The NLIK always attracts national and international researchers and visitors from different parts of the world through its vast resources. The different users are free to use the various digital resources of NLIK as per the standard policy of the Ministry of Culture, Government of India. Through this study, a detailed survey on strategies on digitisation adopted by NLIK has been made for better understanding on the topic as now a days digitisation is one of the most important aspects of all kind of preservations across the globe.

## **7. ACKNOWLEDGEMENT**

The first author is thankful to the authority of the National Library of India, Kolkata for providing necessary permission for the work.

## REFERENCES

- [1] Barbhuiya NI. Significance of preserving manuscripts: A study in Indian context. *International Journal of Applied Research*. 2021;7(7): 9-11. <https://www.allresearchjournal.com/archives/2021/vol7issue7/PartA/7-6-62-776.pdf>
- [2] Das U. A critical study of preservation techniques for Sanchi manuscripts of Assam. 2013. (Doctoral Thesis, Gauhati University). <http://hdl.handle.net/10603/118043>
- [3] Ejiroghene E. Preservation and conservation of library materials in the Digital age: Challenges for libraries in Nigeria. *Library Philosophy and Practice*. 2020;2-12. <http://digitalcommons.unl.edu/libphilprac/5090>
- [4] Fatima K. Preservation and Conservation of Library Materials in National Library, Kolkata, Khuda Bakhsh Oriental Public Library, Patna & Rampur Raza Library, Rampur: An evaluative Study. 2021. (Doctoral Thesis, Aligarh Muslim University). <http://hdl.handle.net/10603/414041>
- [5] Feather J. Preservation and the Management of library Collections. Library Association Publishing. 1991;11-65.
- [6] Fleming B. Digitizing the University of Pennsylvania's Indic manuscripts. *Manuscript Studies*. 2019;3(2): 470-486. <http://repository.upenn.edu/mss-sims/vol3/iss2/9>
- [7] Hasan N, Azim M, Bedar S. Digital Preservation of rare books & manuscripts: A case study of Aligarh Muslim University. *International Research Journal of Library & Information Science*. 2016;6(4): 554-561. <http://www.researchgate.net/publication/313366142>
- [8] Iyishu VA, Nkanu WO, Ogar FO. Preservation and Conservation of Library Materials in the Digital Age. *Information Impact: Journal of Information and Knowledge Management*. 2013;4(2): 22-75. <https://www.ajol.info/index.php/ijikm/article/view/144621>
- [9] Arora J. Digital Preservation: An overview. Access to Textual and Multimedia Content: Bridging the Digital Divide. INFLIBNET Centre. 2006. <https://ir.inflibnet.ac.in/bitstream/1944/1466/1/8.pdf>

- [10] Online Computer Library Center, Inc. OCLC Digital Archive Preservation Policy and Supporting Documentation. 2006. <https://wiki.lib.sun.ac.za/images/e/e5/Oclc-digital-preservation-policy.pdf>
- [11] Cornell University Library. Tutorial on digital preservation management: Implementing short-term strategies for long-term problems. 2005. <http://preservationtutorial.library.cornell.edu/tutorial/preservation/preservation-01.html>
- [12] Association for Library Collections & Technical Services. Definitions of Digital Preservation. 2007. <http://www.ala.org/alcts/resources/preserv/defdigpres0408>.

## CONTRIBUTORS

**Sadhana Goswami** is a research scholar in the Department of Library and Information Science in University of Science & Technology, Meghalaya has completed MLISc from Gauhati University. She is former Assistant Librarian of GMT, Tezpur. Her areas of interests are: Library management, preservation and conservation. Her contributions to the current work include: Introduction, literature review data analysis, tabulation of data, and manuscript draft preparation.

**Dr. Zabeen Ahmed** is Professor of Library and Information Science in University of Science & Technology, Meghalaya. She is former Librarian of Cotton College, Guwahati. She contributed to the current paper by finalising and revising the draft, enhancing its clarity and improving the presentation of the final manuscript.

**Citation:** Sadhana Goswami, Zabeen Ahmed. (2025). Digital Preservation Strategies of Manuscripts and Rare Materials: A Study from NLI, Kolkata. *International Journal of Library and Information Science (IJLIS)*, 14(2), 195-208.

**Abstract Link:** [https://iaeme.com/Home/article\\_id/IJLIS\\_14\\_02\\_015](https://iaeme.com/Home/article_id/IJLIS_14_02_015)

**Article Link:**

[https://iaeme.com/MasterAdmin/Journal\\_uploads/IJLIS/VOLUME\\_14\\_ISSUE\\_2/IJLIS\\_14\\_02\\_015.pdf](https://iaeme.com/MasterAdmin/Journal_uploads/IJLIS/VOLUME_14_ISSUE_2/IJLIS_14_02_015.pdf)

**Copyright:** © 2025 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Creative Commons license:** Creative Commons license: CC BY 4.0



✉ [editor@iaeme.com](mailto:editor@iaeme.com)