

TRACKING THE EVOLUTION OF RESEARCH THEMES IN CALIBER CONFERENCES: A TOPIC MODELLING APPROACH USING LDA

Paper ID: CALIBER2025_178



Subhayan Chakraborty and Prof. Manoj Kumar Verma



INTRODUCTION

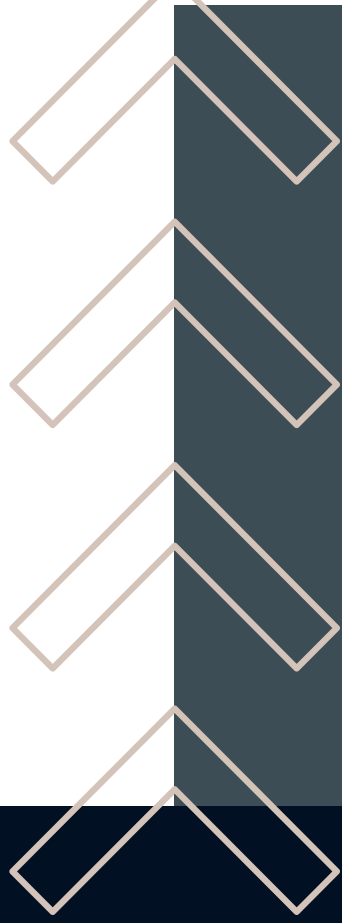
- Library and Information Science (LIS) is a dynamic and evolving discipline that adapts to technological and societal changes with the time frame.
- Academic conferences play a vital role in sharing innovations and shaping research directions.
- The CALIBER conference, organized by INFLIBNET, is one of India's premier platforms for LIS researchers to disseminate the new idea, investigation and research.
- The present study focus about the understanding how research themes evolve across CALIBER editions and provides valuable insights into the progress of LIS scholarship in India.
- This study employs topic modeling to trace thematic evolution in CALIBER papers from 2013 to 2022.





ABOUT CALIBER CONFERENCE

- The Convention on Automation of Libraries in Education and Research Institutions (CALIBER) is a biennial event organized by the INFLIBNET Centre since 1994. So far, 22 conventions have been organized.
- It serves as a leading platform for Indian LIS professionals and researchers to present and discuss their work.
- CALIBER has been hosted in collaboration with universities across India, contributing significantly to LIS research dissemination.
- This study covers five recent CALIBER editions: 2013, 2015, 2017, 2019, and 2022, comprising a total of 251 papers.
- Each edition reflects the evolving focus of LIS research, from traditional library practices to technology-driven innovations.



OBJECTIVES OF THE STUDY

1

To identify the top twenty research topics presented in the five CALIBER conferences (2013, 2015, 2017, 2019, and 2022) using topic modelling.

2

To analyze the year-wise evolution and frequency of topics in those conferences using topic modelling.

3

To visualise the topic-wise trends in the CALIBER conference during the selected time.

METHODOLOGY

DATASET

- 251 full-text papers from CALIBER conferences (2013, 2015, 2017, 2019, 2022)

SOURCE

- INFLIBNET Institutional Repository (<https://ir.inflibnet.ac.in>).

TOOLS USED

- Python (v3.11.8), NLTK, Gensim, Matplotlib, Seaborn, pyLDAvis.

PREPROCESSING STEPS

- Stopword removal
- Lemmatization
- Tokenization and text cleaning

TOPIC MODELLING TECHNIQUE

- Latent Dirichlet Allocation (LDA)
- 20 topics selected based on coherence score.

VISUALIZATION

- Bar charts, heatmaps, and interactive topic exploration (pyLDAvis).

KEY TOPICS IDENTIFIED

- The LDA model identified 20 distinct research topics from CALIBER papers.
- Topics were labeled based on their top keywords and contextual meaning.

01

**Open-access and
Academic Publishing**

02

**Research Data and
Repositories**

03

**Library User Services
& Social Media**

04

**Information
Retrieval**

05

**Information Security
& Management**

06

**Legal
Information**

07

**Digital Library and
Technology Services**

08

**Use of Library
Resources**

09

**College Libraries &
Accreditation**

10

**E-learning
and MOOCs**

11

**Technology-Enhanced
Library Services**

12

**Open Learning
Resources and Services**

13

**Bibliometric and
Scientometric Analysis**

14

**Metadata, Ontology, and
Information Literacy**

15

**Library Professionals,
Skills & Workforce**

16

**Library and Information
Science Education**

17

**Plagiarism, Citation and
Impact Analysis**

18

**Digital
Repository**

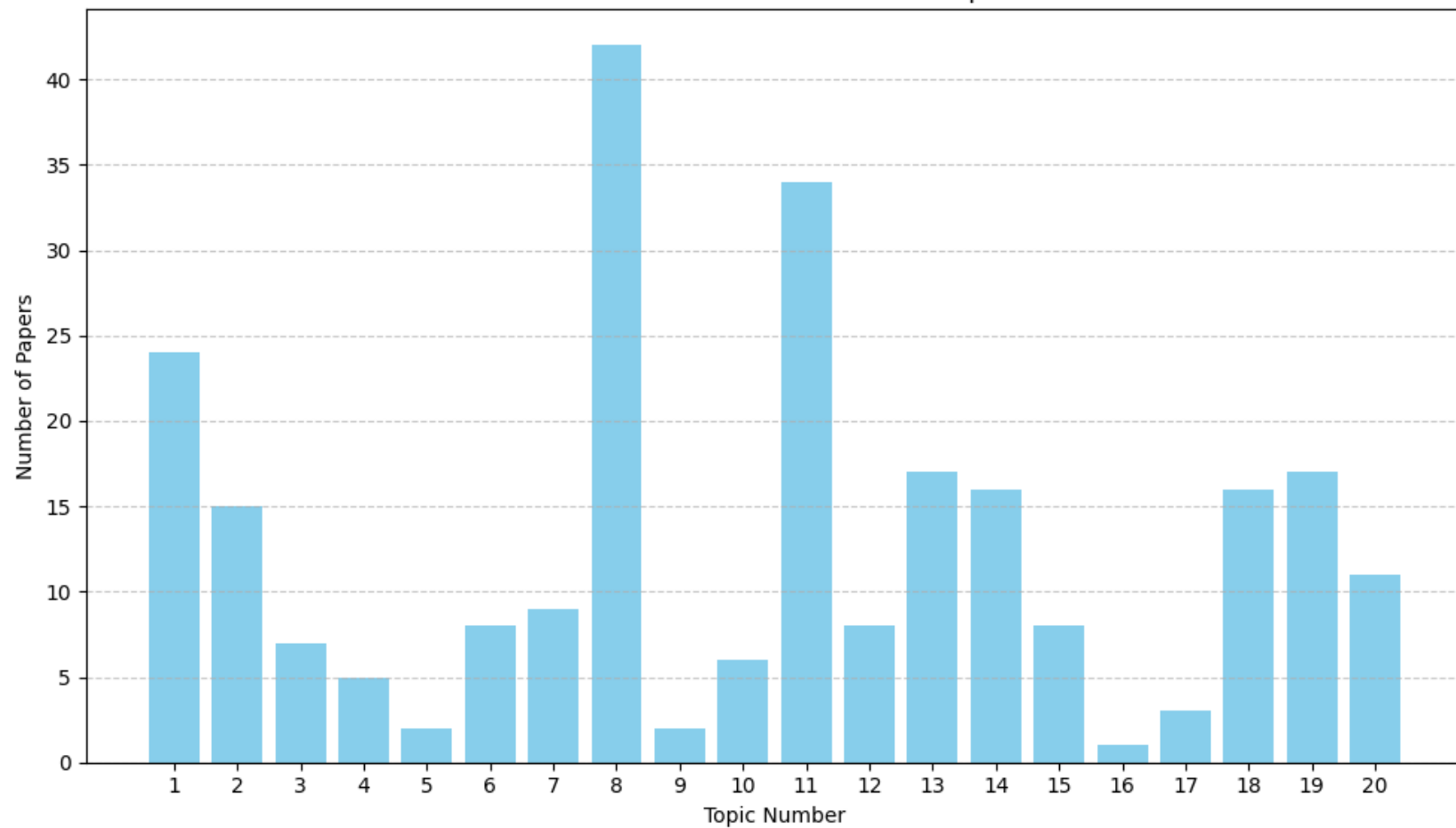
19

**Library Resources
and Consortium**

20

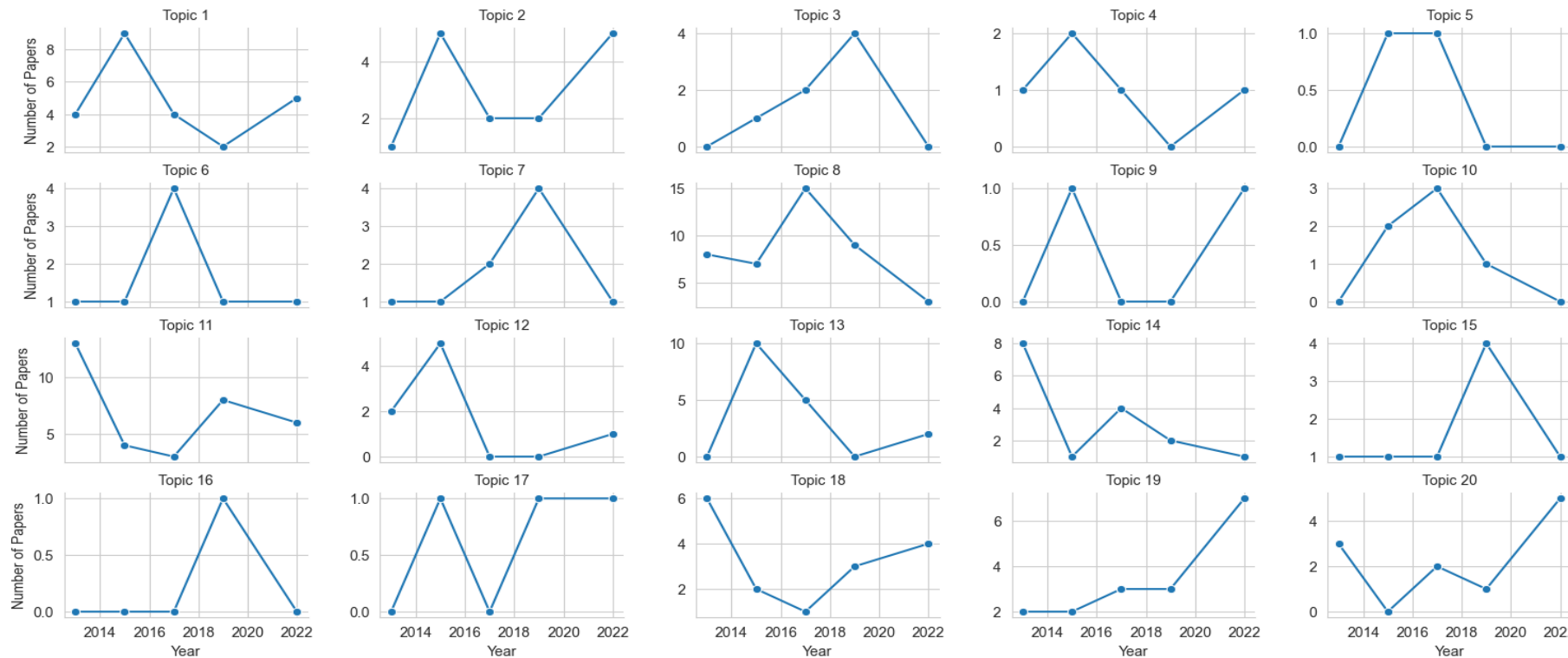
**Higher Education and
Teaching Platforms**

Overall Distribution of Dominant Topics



Frequency Distribution of Top Topics

Year-wise Topic Distribution (Mini Line Charts)



3 Year-wise Distribution of Research Topics

YEAR-WISE TRENDS

Emerging Topics

- Technology-Enhanced Library Services (Topic 11)
- Library Resources and Consortium (Topic 19)

Consistent Topics

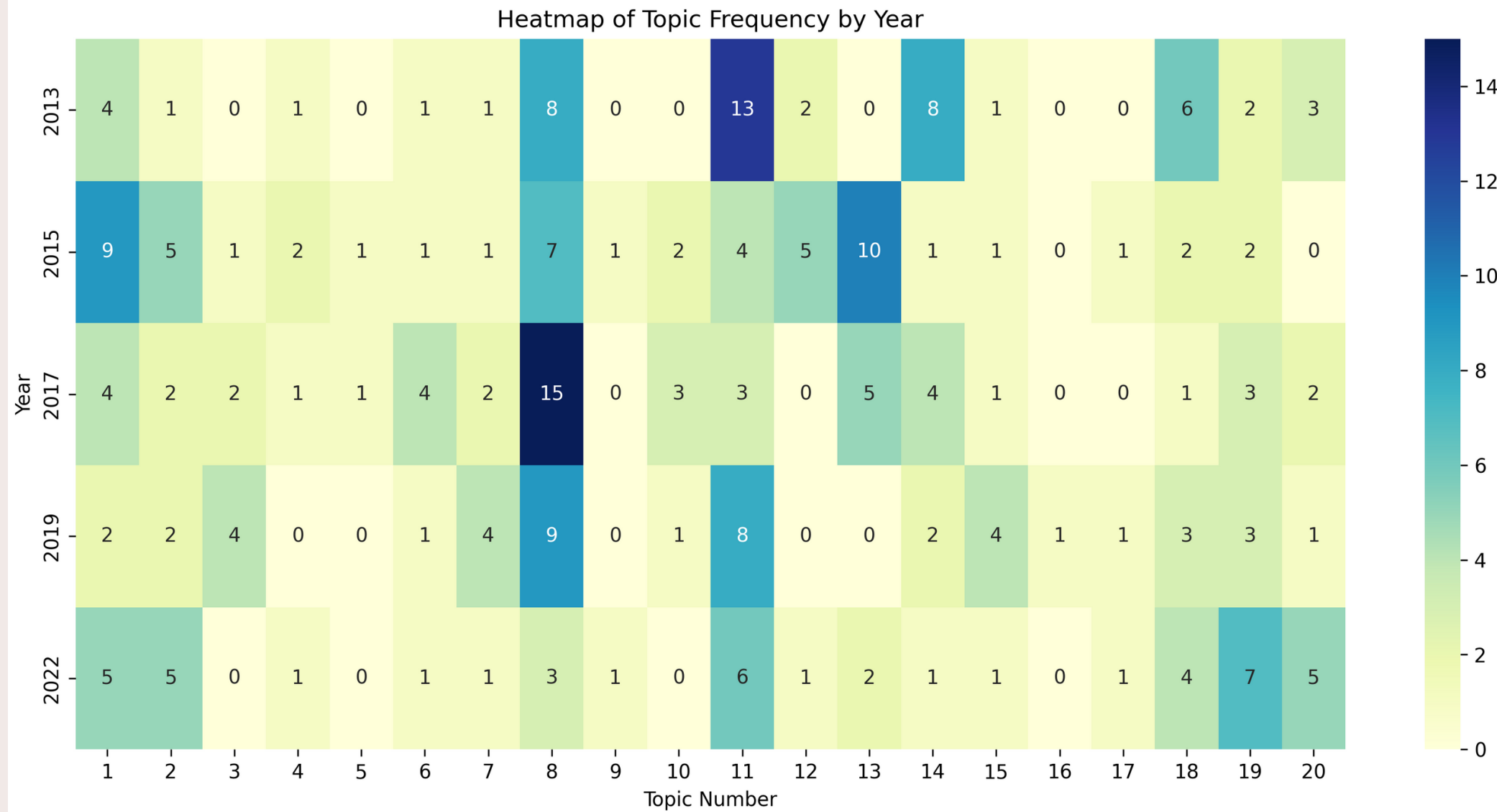
- Open-access and Academic Publishing (Topic 1)
- Use of Library Resources (Topic 8)

Declining Topics

- Open Learning Resources and Services (Topic 12)

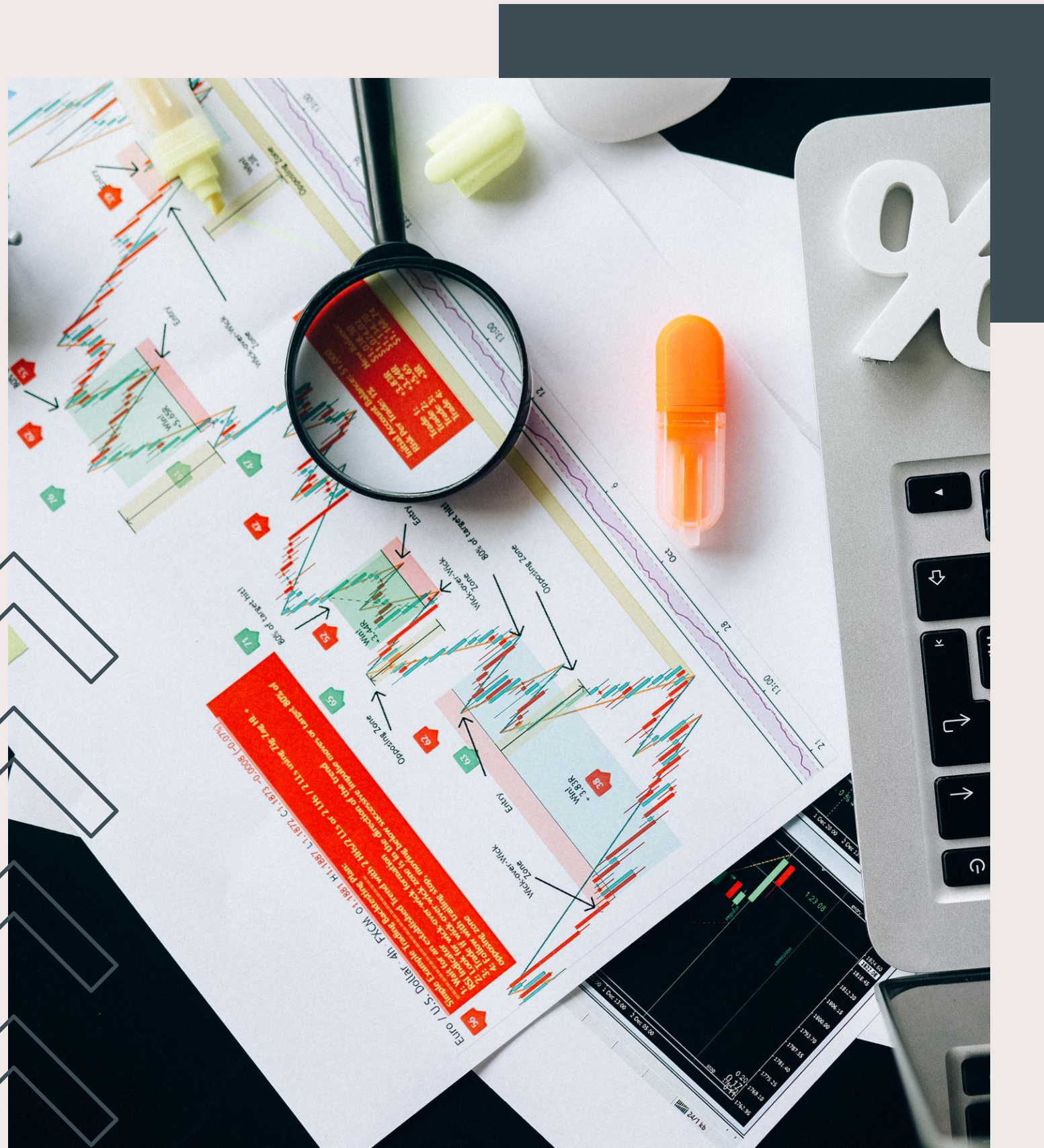
HEATMAP OF TOPIC FREQUENCY BY YEAR

- The heatmap illustrates the distribution and intensity of research topics across five CALIBER editions (2013–2022).
- Darker shades represent higher topic frequency; lighter shades indicate less focus.
- The visualization demonstrates a clear thematic shift toward digital transformation and technology integration in LIS research.



Heatmap of Topic Frequency by Year

FINDINGS AND DISCUSSION



- CALIBER conferences reflect the evolution of LIS research in India over the last decade.
- Research focus has gradually shifted from traditional library operations to technology-driven and digital services.
- Most prominent themes: Open-access publishing, technology-enhanced library services, and bibliometric studies.
- Interconnectedness of topics indicates interdisciplinary research trends.
- Findings reveal growing interest in digital repositories, research data management, and open-access initiatives.
- Thematic overlap shows collaboration between education, technology, and information science.

CONCLUSION

- The study identified 20 major research themes across five CALIBER conferences (2013–2022).
- LIS research in India is transitioning toward digital transformation, open access, and data-centric approaches.
- Consistent focus areas include open-access publishing and library resource usage.
- Emerging themes highlight technology integration and collaborative library networks.
- Topic modelling proves effective for mapping research evolution in LIS.
- **Future Scope:**
 - Apply advanced models like BERTopic for deeper insights.
 - Include other Indian and international LIS conferences (e.g., PLANNER, COLLNET, WLIC).





THANK YOU



Do you have any questions?



Subhayan Chakraborty
Ph.D. Research Scholar
Dept. of Library and Information
Science
Mizoram University, Aizawl



Prof. Manoj Kumar Verma
Ph.D. Supervisor and Mentor
Dept. of Library and Information
Science
Mizoram University, Aizawl

