

Research Integrity and Ethics in the 21st Century India: A Critical Appraisal

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Introduction

Crisis on research integrity and ethics has been deeply ingrained in India since the colonial period. After independence of India (1947), various measures have been adopted to promote research integrity and ethics, but this crisis still exists. The rise of neo-liberalism has made this issue even more complex as it invokes academic capitalism. The rapid increase in predatory journals and scientific misconduct pose a big challenge in research integrity in India.

Objectives

- To analyse the nature and extent of retracted publications with Indian authorship during the period from 2010 to 2023.
- To critically evaluate the policy and guidelines adopted by the Indian Council of Medical Research (ICMR) and the University Grants Commission (UGC) for maintaining research integrity and ethics in the 21st century.
- To propose effective strategies to strengthen research integrity and research ethics in India.

Methodology

- Relevant data and information have been collected from the *Retraction Watch database*, The Center for Scientific Integrity, New York and *OpenAlex*, Our Research, Stanford.
- Published reports, policy documents, guidelines and regulations published by the UGC and ICMR.
- A systematic literature review has been conducted.
- Descriptive statistics and thematic map have also been used in this study.

Retracted Articles

Retracted Articles in the World (2010-2023)

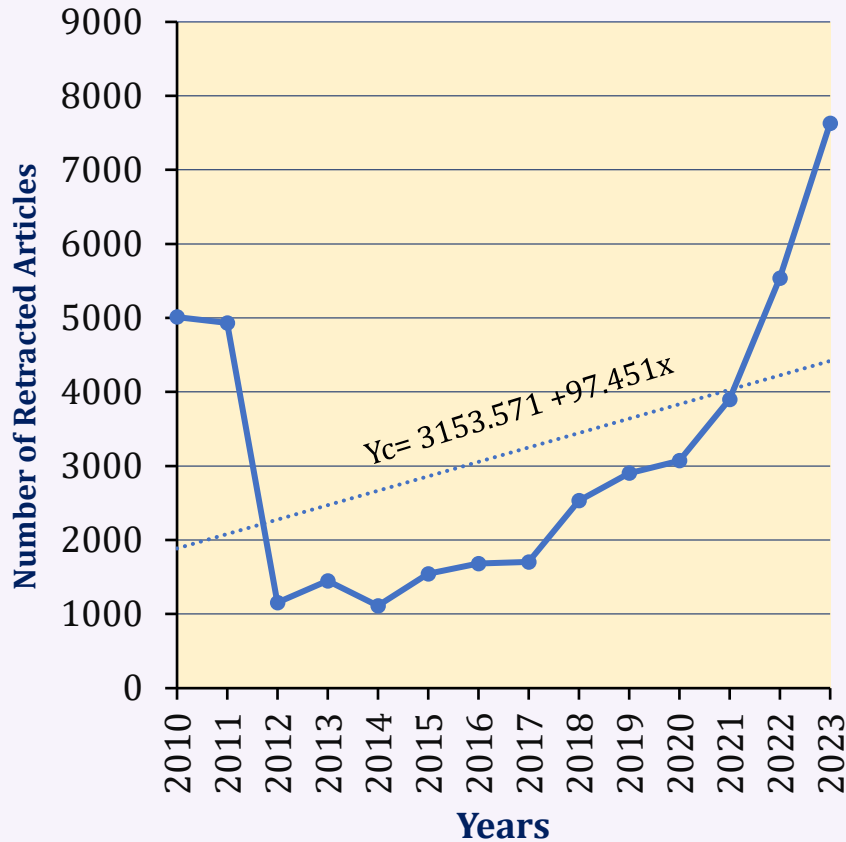


Fig.1

Retracted Articles with Indian Authorship (2010-2023)

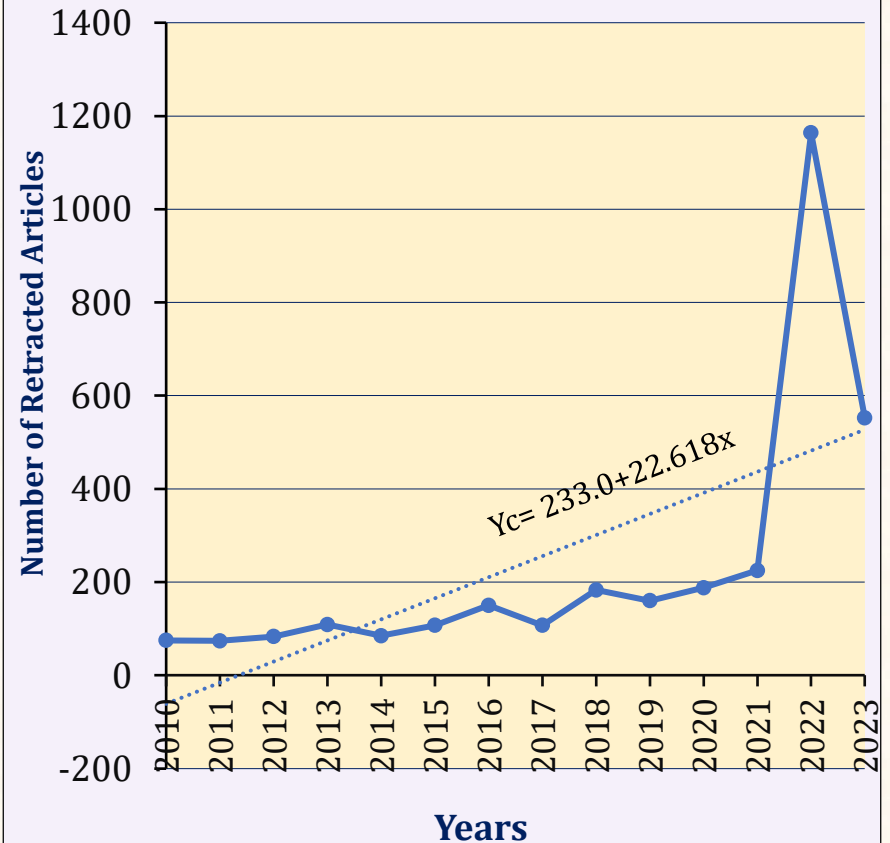


Fig.2

Source: Prepared based on data collected from *Retraction Watch database*. Available from: <http://retractiondatabase.org/>. [Accessed May 16, 2024]

Share of Total Articles and Retracted Articles with Indian Authorship to the World and Trends of Annual Growth Rates of Retracted Articles

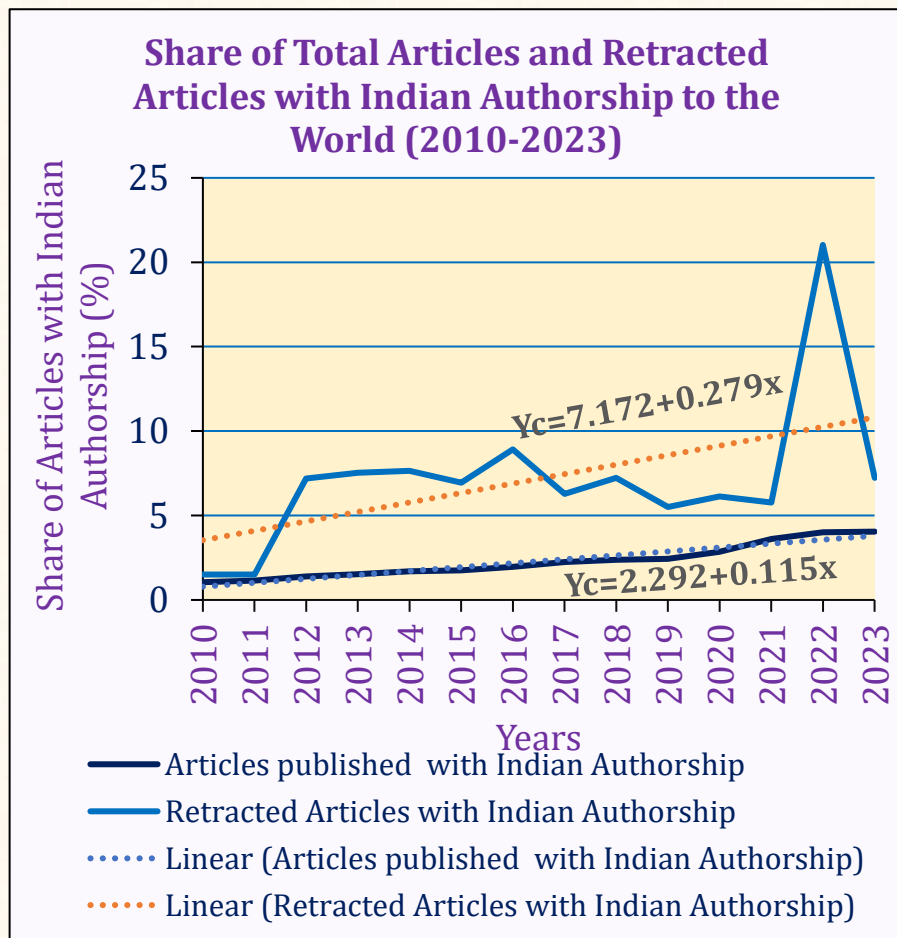


Fig.3

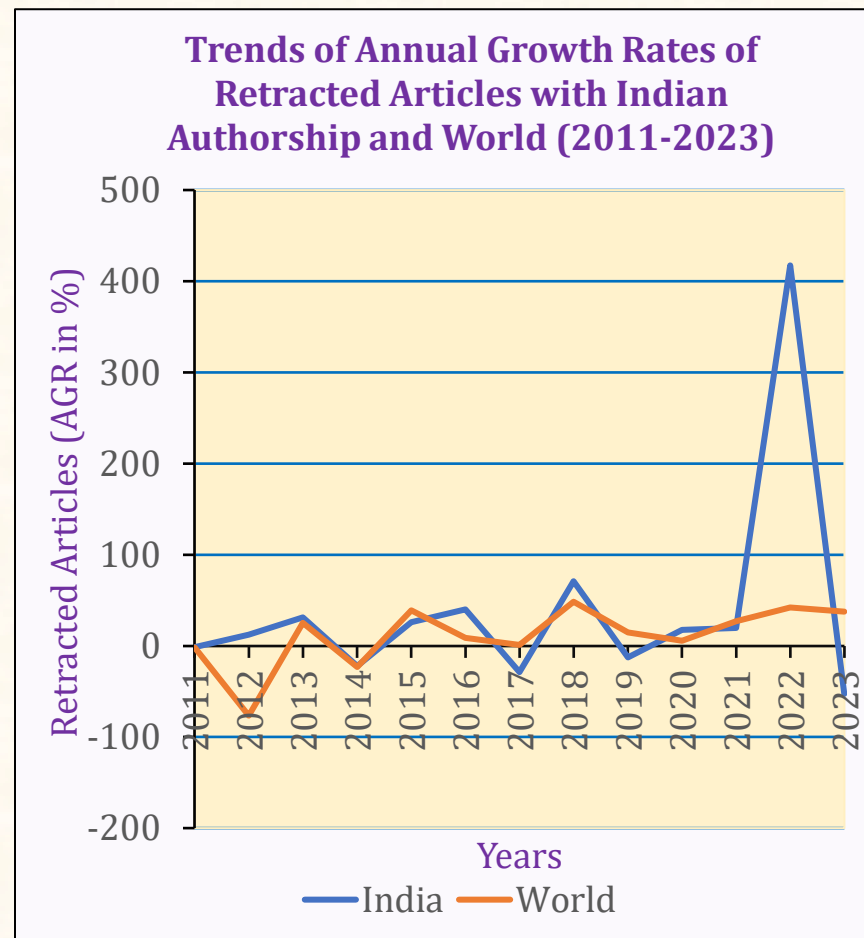


Fig.4

Source: Prepared based on data collected from **Retraction Watch database**. Available from: <http://retractiondatabase.org/>. [Accessed May 16, 2024] and **OpenAlex database**. Available from: <https://openalex.org/>. [Accessed May 24, 2024]

Retracted Articles Across Broad Subject Groups with Indian Authorship and World (2010-2023)

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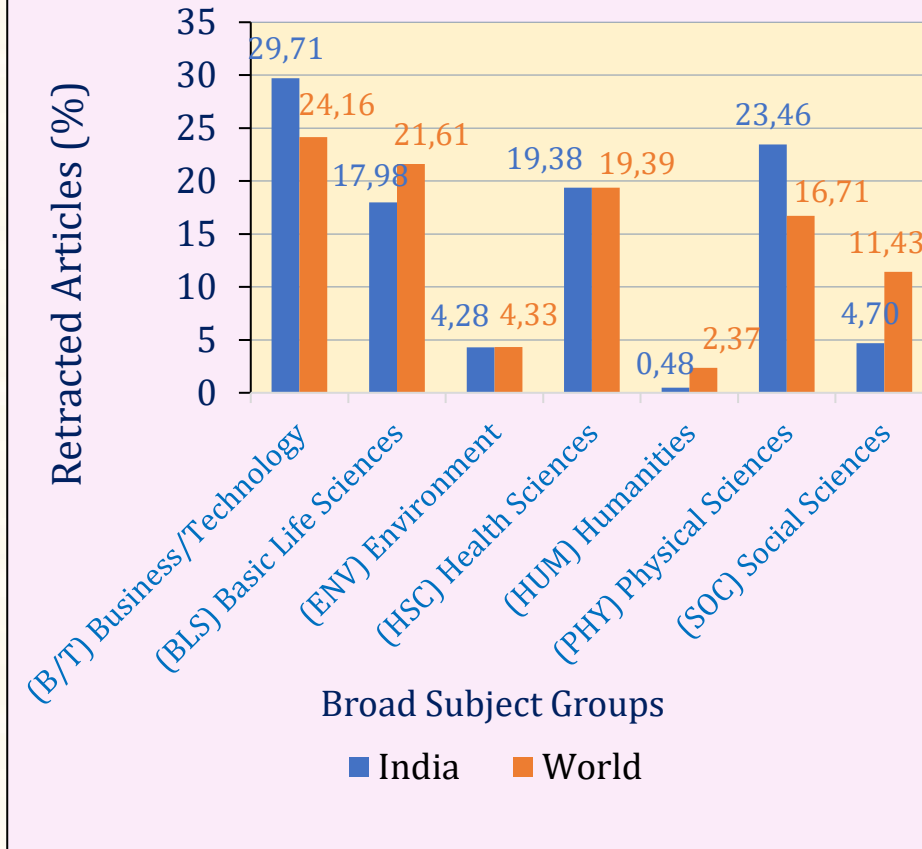


Fig.5

Source: Prepared based on data collected from **Retraction Watch database**. Available from: <http://retractiondatabase.org/>. [Accessed May 16, 2024]

Percentage of Retracted Articles Across Subject Groups with Indian Authorship (2010-2023)

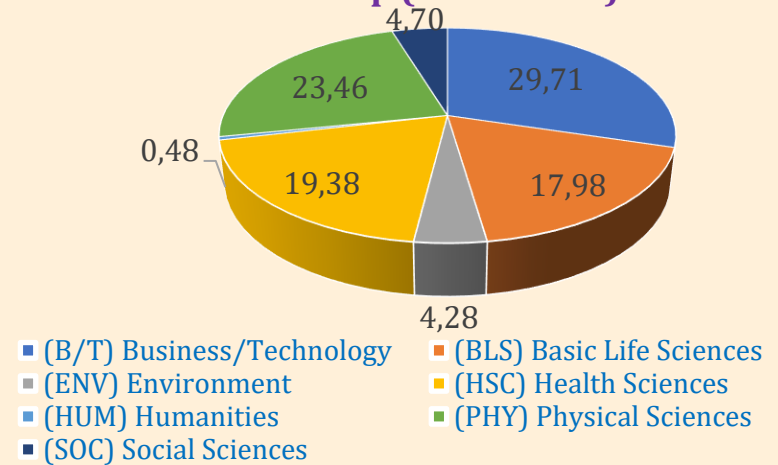


Fig.6

Percentage of Retracted Articles Across Subject Groups in World (2010-2023)

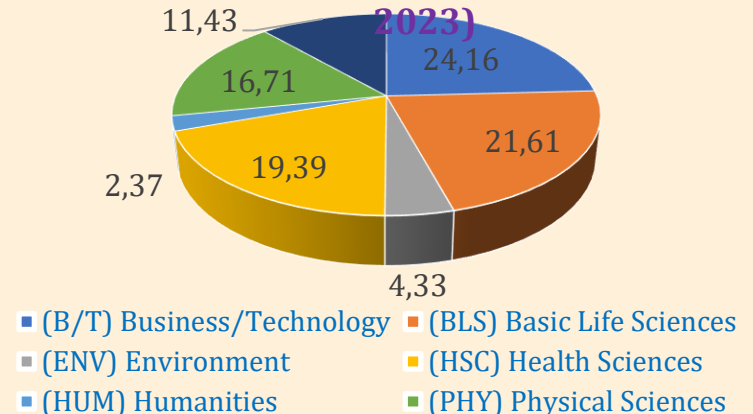


Fig.7

Share of Retracted Articles Across Broad Subject Groups (2010-2023)

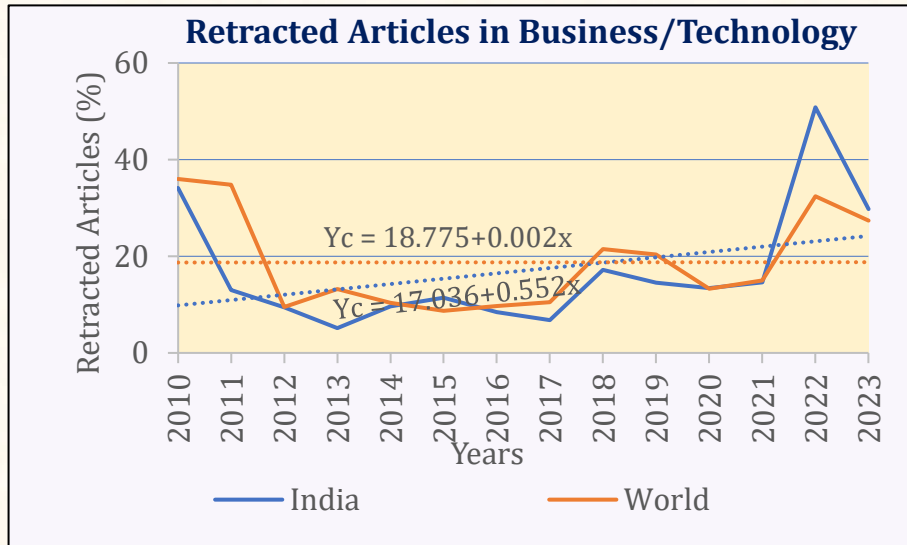


Fig.8

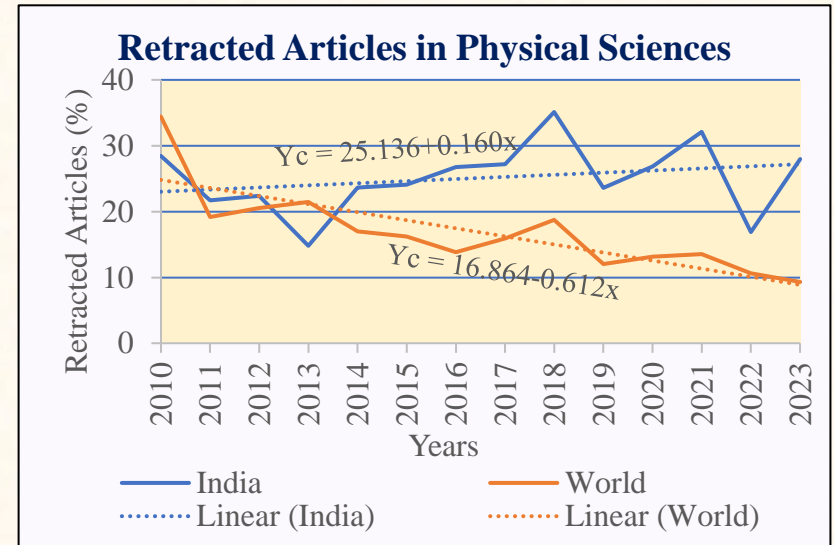


Fig.9

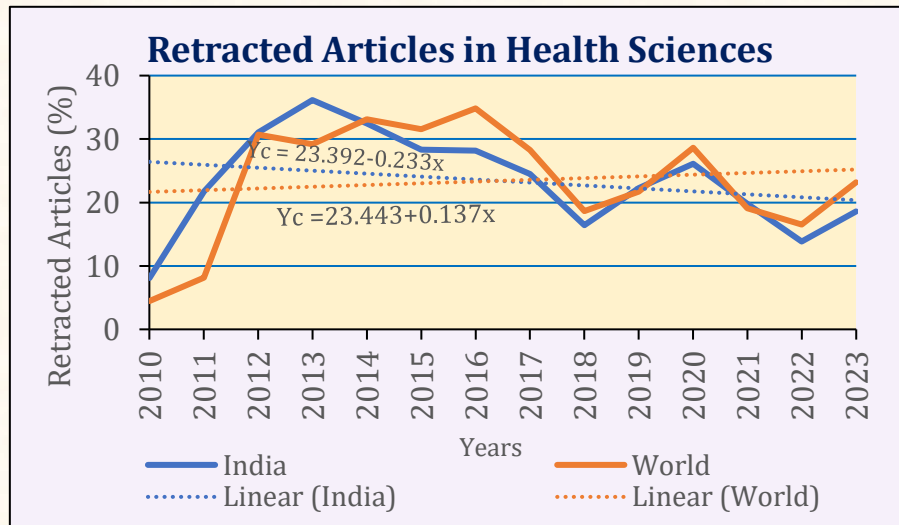


Fig.10

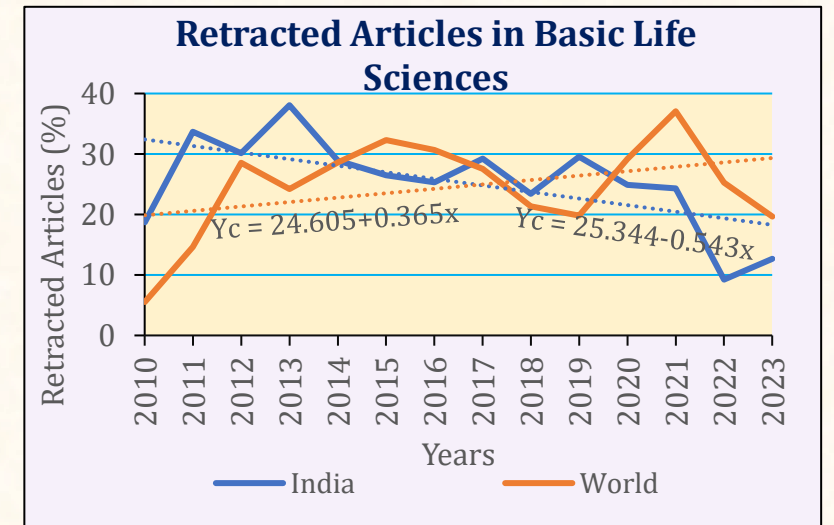


Fig.11

Source: Prepared based on data collected from **Retraction Watch database**. Available from: <http://retractiondatabase.org/>. [Accessed May 16, 2024]

Share of Retracted Articles Across Broad Subject Groups (2010-2023)

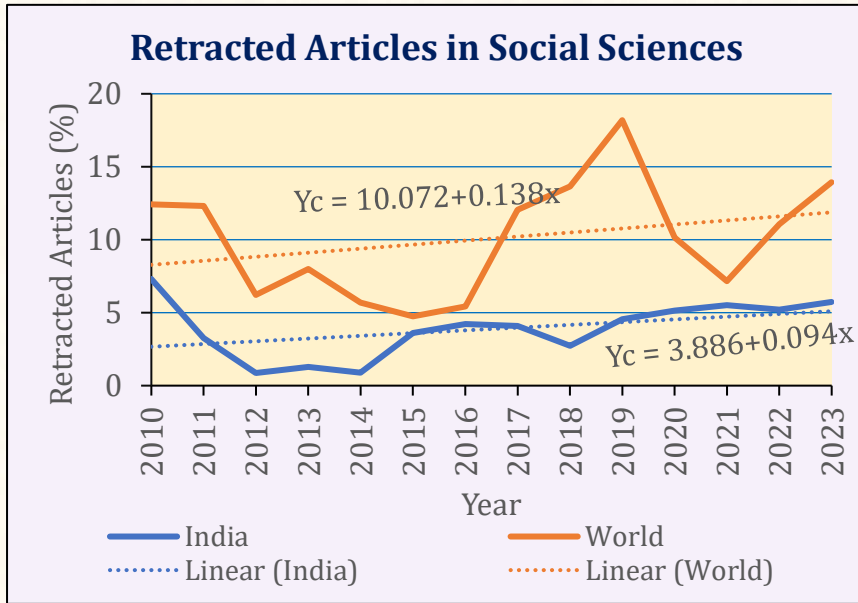


Fig.12

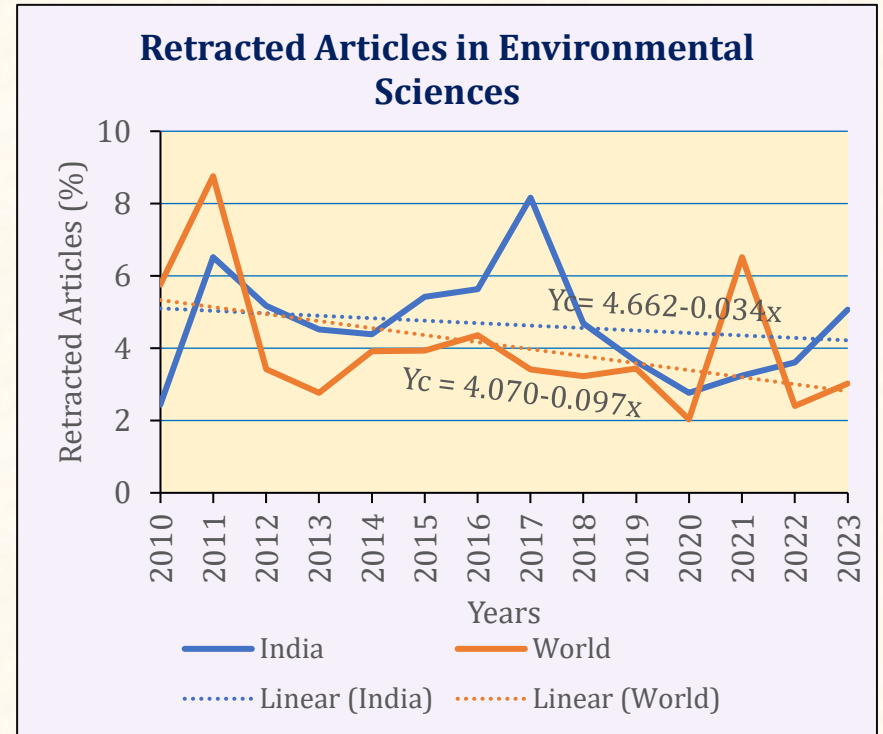


Fig.13

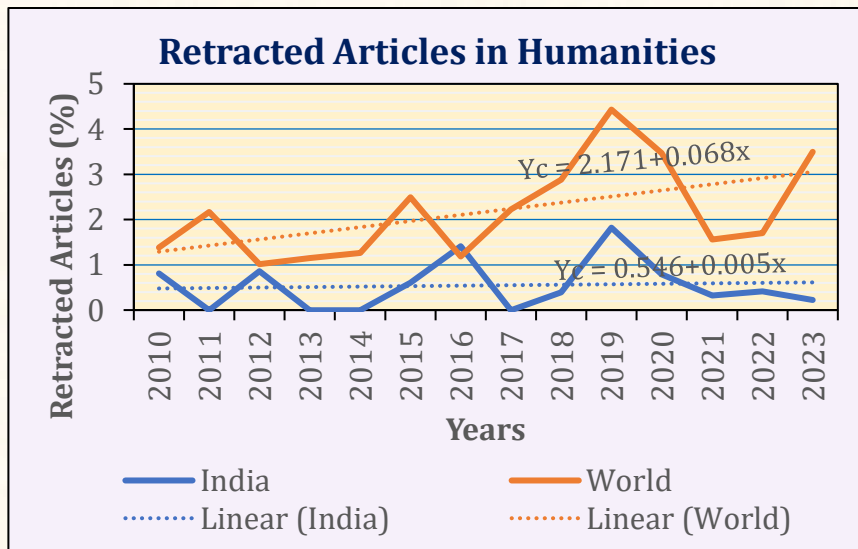


Fig.14

Source: Prepared based on data collected from **Retraction Watch database**. Available from: <http://retractiondatabase.org/>. [Accessed May 16, 2024]

Reasons for Retraction of Articles (2010-2023)

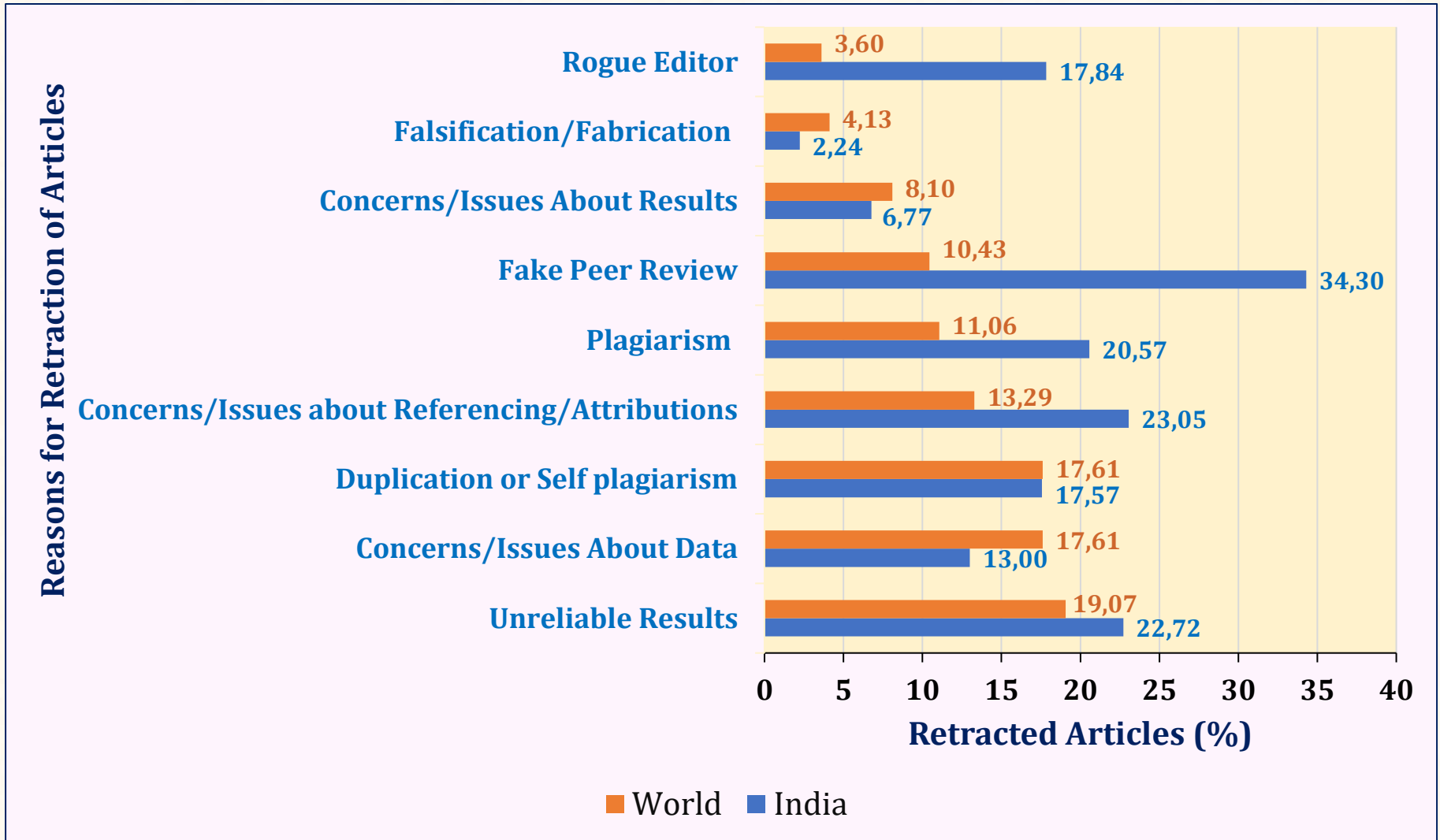


Fig.15

Source: Prepared based on data collected from *Retraction Watch database*.
Available from: <http://retractiondatabase.org/>. [Accessed May 16, 2024]

University Grants Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018

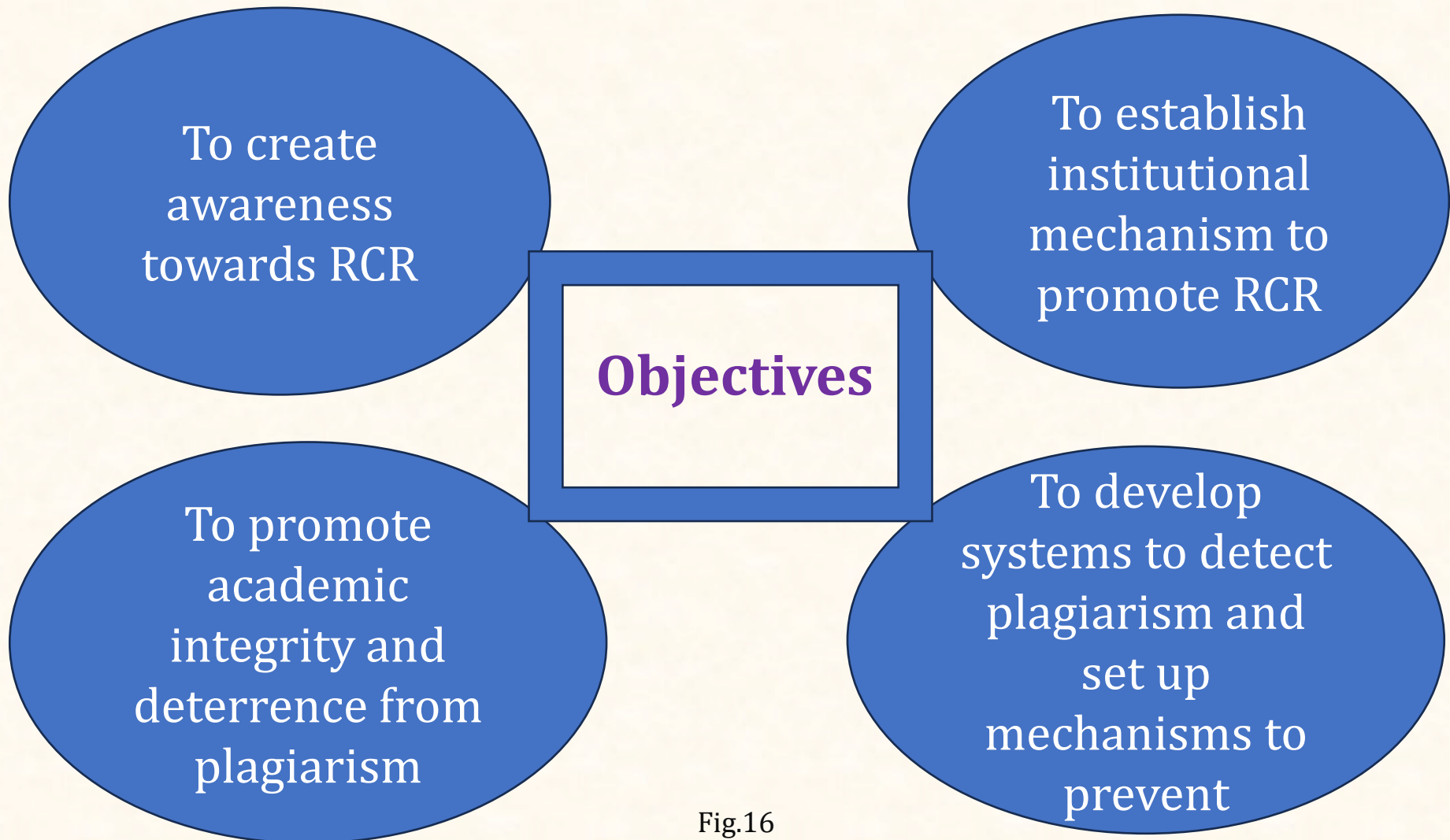


Fig.16

Table 1. Plagiarism and Penalties in UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018

Plagiarism		Penalties
Levels of Plagiarism	Similarities (%)	Submission of thesis and dissertations
Level 0	Upto 10	No penalty
Level 1	Above 10 to 40	Submission of revised script within 6 months
Level 2	Above 40 to 60	Debarred from submitting a revised script for a period of one year
Level 3	Above 60	Registration for that programme shall be cancelled

Table 2. Plagiarism and Penalties in UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018

Levels of Plagiarism: Similarities	Penalties in Academic and research publications
Level 0: Upto 10%	No penalty
Level 1: Above 10% to 40%	Shall be asked to withdraw manuscript
Level 2: Above 40% to 60%	i) Shall be asked to withdraw manuscript ii) Shall be denied a right to one annual increment iii) Shall not be allowed to be a supervisor for a period of two years.
Level 3: Above 60%	(i) Shall be asked to withdraw manuscript ii) Shall be denied a right to two successive annual increments iii) Shall not be allowed to be a supervisor for a period of three years

UGC-Consortium for Academic and Research Ethics (CARE) Universities in India

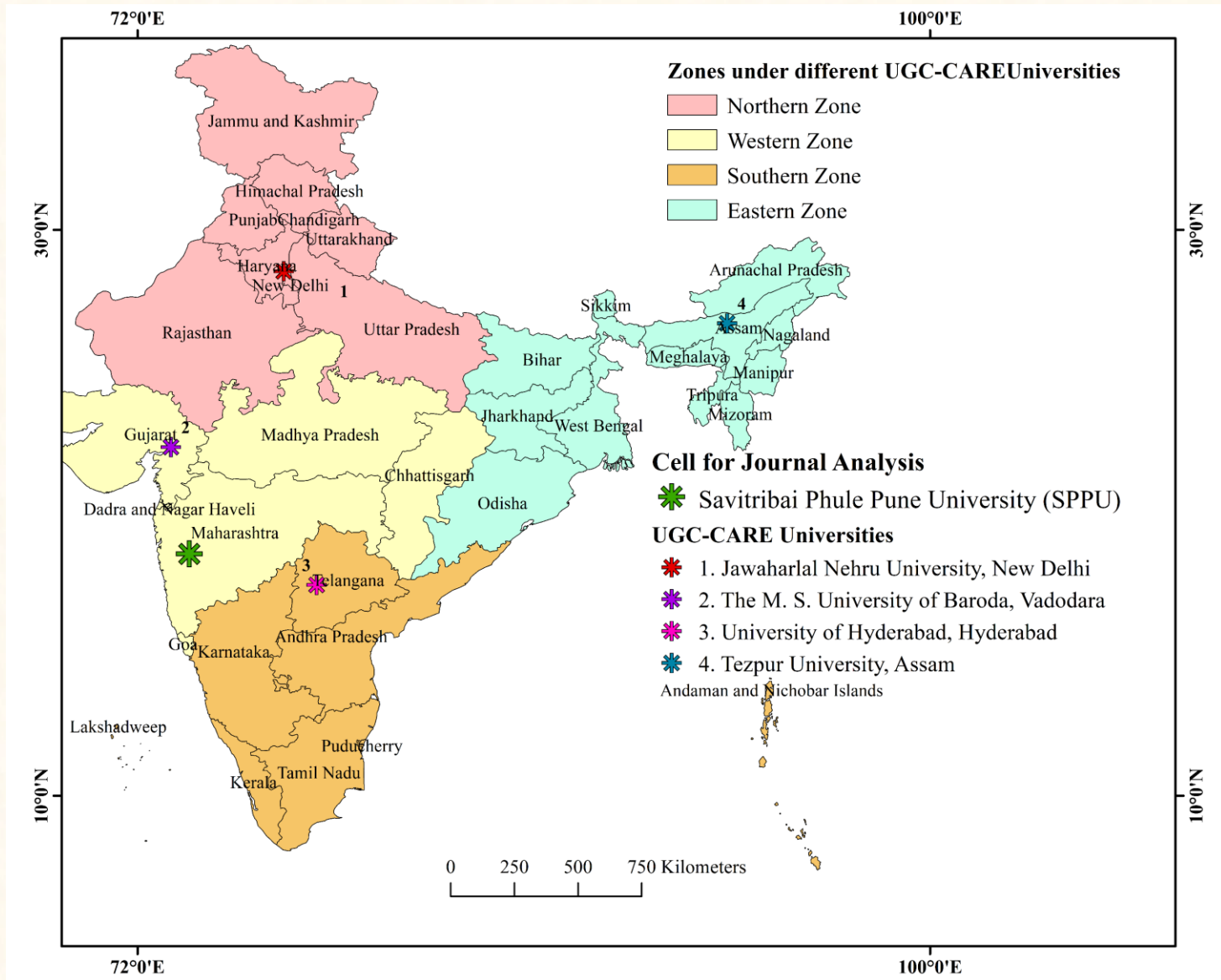


Fig.17

UGC: Initiatives for Research Integrity and Research Ethics

- Two credits mandatory course entitled “Research and Publication Ethics (RPE) in Ph.D. Course Work Programme in 2019.

Information and Library Network (INFLIBNET) Centre (Gandhinagar, Gujarat, India)

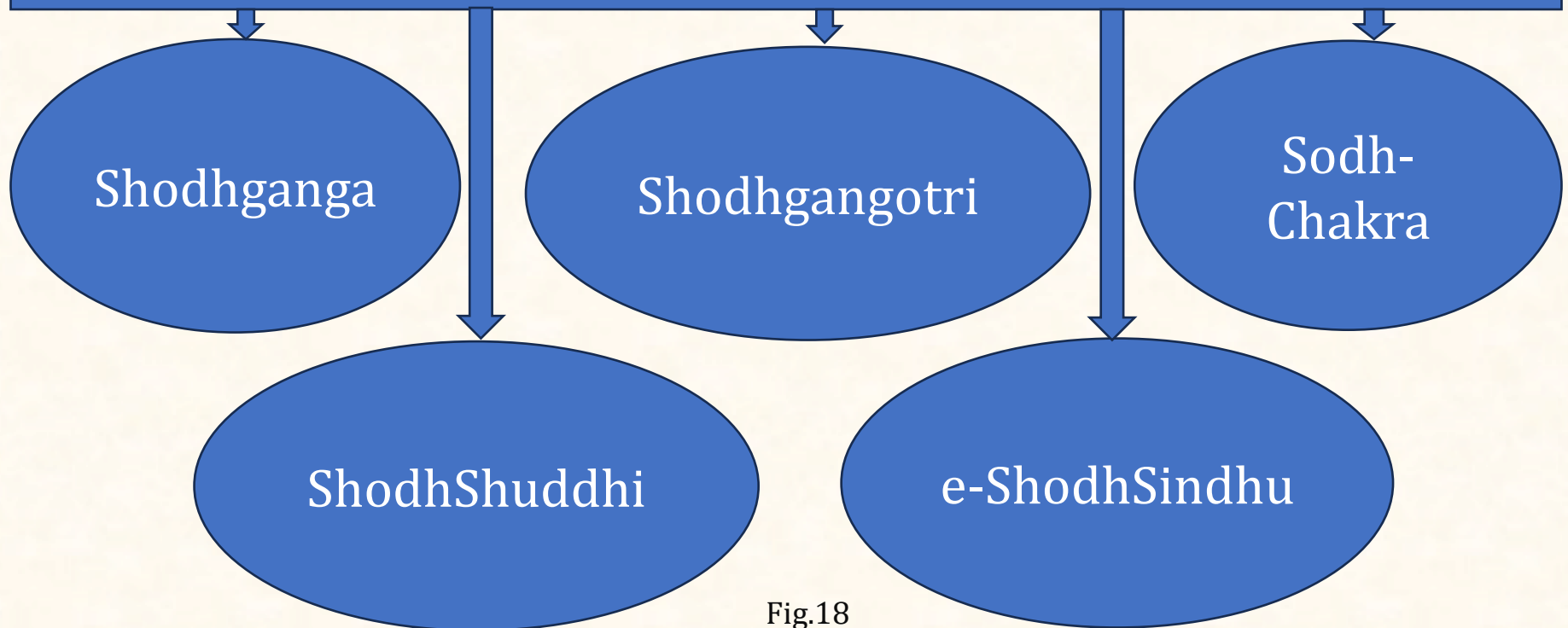


Fig.18

Indian Council of Medical Research (ICMR): Research Integrity and Research Ethics in Biomedical and Health Research in India

Ethical Guidelines for Biomedical Research on Human Participants (2006)



- Good clinical practice (GCP) training certificate for investigator was not mandatory
- Sexual minorities were not specified as vulnerable group
- Record keeping and archiving: 3 Years
- Three categories of risk and freedom of participant to withdraw from research

National Ethical Guidelines for Biomedical and Health Research Involving Human Participants (2017)

- Good clinical practice (GCP) training certificate for investigator is mandatory (preferably within 5 years)
- Sexual minorities have been specified as vulnerable group
- Record keeping and archiving: 5 Years for regulatory clinical trials
- Four categories of risk, new dimension of risk assessment and freedom of participant to withdraw from research

ICMR: Research Integrity and Research Ethics in Biomedical and Health Research

Clinical
Trials
Registry-
India (CTRI)
(2007)

National Ethical
Guidelines for
Biomedical
Research
Involving
Children 2017

National
Health
Policy 2017

National
Guidelines
For Stem
Cell
Research
2017

ICMR Policy on
Research
Integrity and
Publication
Ethics 2019

ICMR
Bioethics
Unit

Fig.19

ICMR Policy on Research Integrity and Publication Ethics (2019)

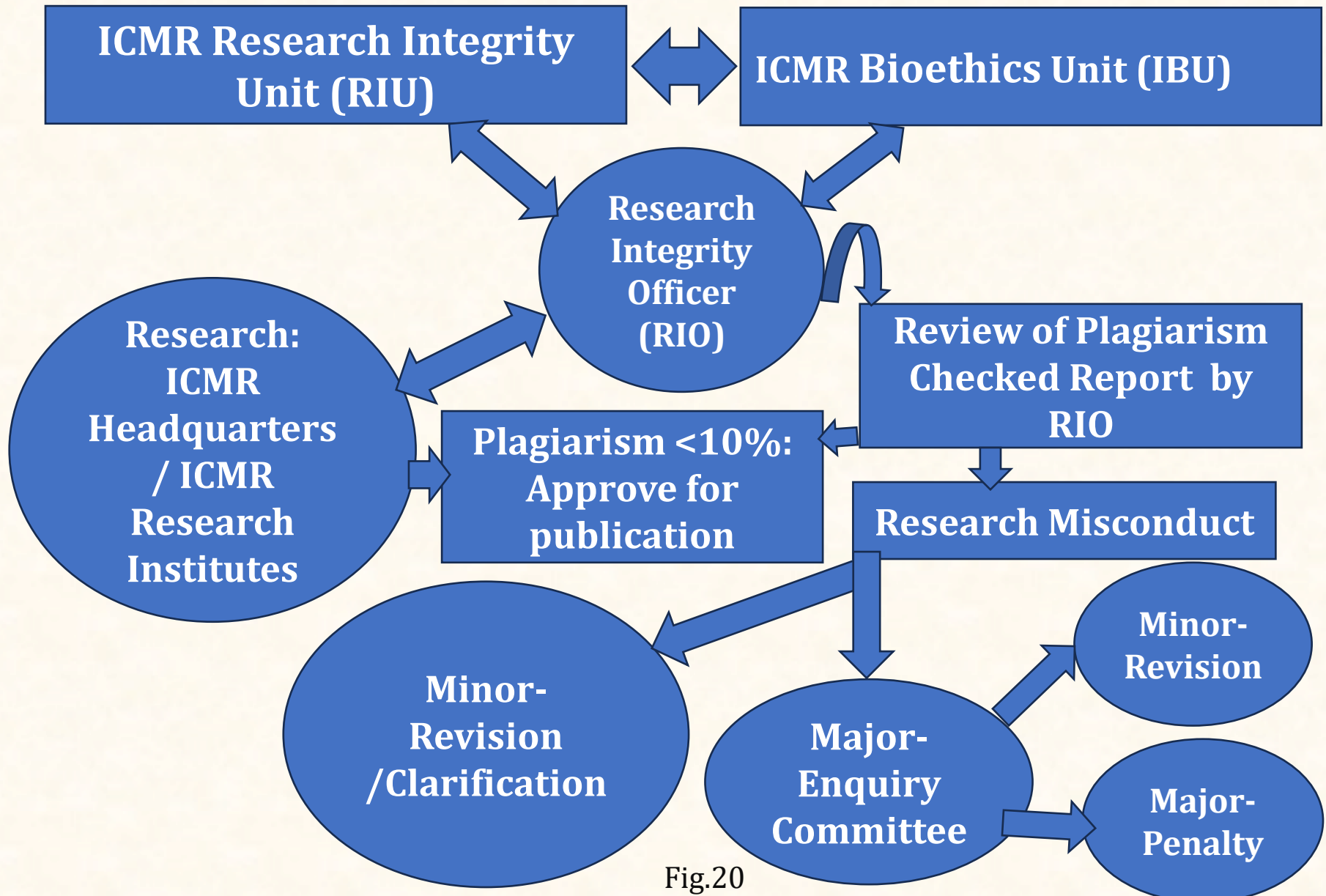


Fig.20

Future Ahead: Proposed Strategies

- Promote value based education from school level.
- To build academic integrity across disciplines.
- To reform evaluation system from school level.
- To develop an inclusive research culture sensitive towards linguistic and ethnic diversity in India.
- To develop a nation wide research infrastructure addressing the regional economy.

Conclusion

A new policy framework with raising awareness and training on research integrity and ethics are required in addressing socio-economic inequality, cultural diversity and social needs in India.

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Govt. of India (2020). National Education Policy 2020. Ministry of Human Resource Development, Government of India

Acknowledgement

I would like to express my sincere gratitude to the Co-Chairs of the 8th World Conference on Research Integrity 2024 for providing Travel Grant to participate in the conference.

I am grateful to University of Kalyani, West Bengal, India for extending necessary support to carry out this research.

I also wish to express my sincere thanks to Dr. Paramita Roychowdhury, Associate Professor, Kazi Najrul University, West Bengal, India for providing valuable suggestions.

Thank You