



Gray literature in research: Definitions, utility, challenges, and Indian perspectives

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Abstract

Gray literature refers to research outputs and information that are produced outside traditional commercial publishing and distribution channels. These materials include government and institutional reports, policy documents, theses and dissertations, conference proceedings, working papers, technical notes, and research produced by non-governmental organizations. Gray literature plays a crucial role in academic and applied research by providing timely, context-specific, and policy-relevant information that may not be available in peer-reviewed journals. Despite its importance, gray literature poses challenges related to discoverability, quality assessment, long-term preservation, and standardized citation. This paper critically examines the concept of gray literature, its definitions and typologies, its utility in research, challenges associated with its use, and Indian perspectives with special reference to social sciences, library and information science research. The paper also highlights citation patterns, digital initiatives in India, and suggests strategies to improve the integration of gray literature into scholarly communication.

Keywords: Gray literature, traditional, non-governmental organizations, policy-relevant information

Introduction

Traditional scholarly communication relies heavily on peer-reviewed journals, academic books, and commercially published conference proceedings. These formal publication channels ensure quality control, academic recognition, and long-term preservation of research outputs. However, a substantial volume of valuable research and information is produced outside these channels. Such materials, commonly referred to as gray literature, represent an essential yet often underutilized component of the global knowledge ecosystem (Auger, 1998; Farace and Schöpfel, 2010) [1,2].

Gray literature is particularly significant in developing countries like India, where government agencies, academic institutions, research councils, and non-governmental organizations generate extensive documentation on policy, development, environment, public health, and social issues. These documents often address local and regional problems, making them indispensable for researchers, planners, and policymakers (Mandal and Mandal, 2024) [7]. Therefore, understanding the role, strengths, and limitations of gray literature is vital for comprehensive and evidence-based research.

Defining Gray Literature

The concept of gray literature has evolved over time. One of the earliest widely cited definitions describes gray literature as “that which is produced on all levels of government, academics, business, and industry in print and electronic formats, but which is not controlled by commercial publishers” (Wood, 1982) [10]. The Luxembourg definition, proposed by the Grey Literature Network Service (GreyNet), further refined this understanding by emphasizing the non-commercial nature and limited distribution of such materials (Schöpfel, 2011) [9].

Gray literature typically includes:

- Government reports, policy documents, and white papers

- Research and technical reports from institutions and laboratories
- Theses and dissertations
- Conference papers, posters, and proceedings
- Working papers and preprints
- Manuals, guidelines, and standards
- NGO and international organization publications

In the Indian academic context, electronic theses and dissertations (ETDs) hosted on platforms such as Shodhganga constitute one of the largest and most systematically organized bodies of gray literature (INFLIBNET Centre, 2023) [5].

Significance of Gray Literature in Research

1. Complementing Formal Literature

Gray literature complements peer-reviewed literature by filling gaps in coverage, especially in emerging, interdisciplinary, and applied research areas. It often reports preliminary findings, negative results, or region-specific studies that may not be published in mainstream journals (Hopewell *et al.*, 2007) [4].

2. Reducing Publication Bias

In systematic reviews and meta-analyses, the inclusion of gray literature is considered essential to reduce publication bias, as studies with non-significant or unfavorable results are less likely to appear in peer-reviewed journals (Paez, 2017) [8]. Government reports and institutional studies can provide robust datasets and methodological insights that enhance the reliability of research synthesis.

3. Relevance to Indian Research Needs

In India, gray literature is extensively used in social sciences, environmental studies, public health, education, and rural development research. Government documents such as census reports, National Sample Survey (NSS) data,

policy briefs, and planning commission reports are indispensable primary sources for empirical research (Kastikar, 2020)^[6].

Indian Research on Usage and Citation of Gray Literature

1. Citation Patterns in Social Science Research

Studies on citation behavior in India indicate a substantial reliance on gray literature. Mandal and Mandal (2024)^[7] analyzed citations in social science research publications and found that a significant proportion of references consisted of government reports, theses, and institutional publications. The preference for these sources was attributed to their contextual relevance, authenticity, and accessibility. Similarly, earlier bibliometric studies revealed that policy-oriented disciplines such as economics, sociology, and public administration cite gray literature more frequently than natural sciences, reflecting their dependence on official data and policy documents (Hajje and Mulla, 2018)^[3].

2. Library and Information Science Perspectives

Library and information science (LIS) research in India has extensively examined the role of gray literature. Citation analyses of LIS dissertations demonstrate frequent use of unpublished reports, conference papers, and doctoral theses, highlighting their scholarly value (Hajje and Mulla, 2018)^[3]. LIS scholars also emphasize the responsibility of libraries in organizing, preserving, and providing access to gray literature through institutional repositories.

Challenges in Using Gray Literature

1. Discoverability and Access

One of the primary challenges associated with gray literature is poor discoverability. Unlike journal articles indexed in databases such as Scopus or Web of Science, gray literature is dispersed across multiple platforms, organizational websites, and archives. Although initiatives like Shodhganga have improved access to theses, many reports and working papers remain difficult to locate (Schöpfel, 2011)^[9].

2. Quality and Credibility Assessment

The absence of formal peer review raises concerns regarding the quality and reliability of gray literature. Researchers must apply critical appraisal techniques, such as evaluating authorship, institutional affiliation, methodology, and transparency of data, before using these sources (Paez, 2017).

3. Citation and Preservation Issues

Gray literature often lacks standardized bibliographic information, making accurate citation challenging. Additionally, documents hosted on websites may be removed or updated without notice, raising issues of long-term access and preservation. Persistent identifiers and repository-based archiving are therefore essential.

Best Practices and Future Directions

To enhance the effective use of gray literature in research, the following measures are recommended:

- Strengthening national and institutional repositories with standardized metadata and persistent identifiers
- Training researchers and students in gray literature search strategies and critical appraisal methods
- Encouraging libraries to actively collect and curate gray literature
- Integrating gray literature into academic databases and discovery tools
- Developing clear citation guidelines for gray literature in accordance with APA and other style manuals

Conclusion

Gray literature constitutes a vital component of scholarly communication by providing timely, localized, and policy-relevant information that complements traditional academic publications. Indian research clearly demonstrates the extensive use of gray literature, particularly in social sciences and library and information science disciplines. While challenges related to access, quality assessment, and citation persist, systematic organization, critical evaluation, and institutional support can significantly enhance the visibility and credibility of gray literature. Recognizing and integrating gray literature into mainstream research practices will ultimately lead to more comprehensive and socially relevant scholarship.

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