Research Article

LIS TODAY

Year 2024, Volume-10, Issue-1 (June)

www.acspublisher.com

Open Source Plagiarism Checking Software: An Assessment of Awareness and Utility Among Social Science Research Scholars of Lalit Narayan Mithila University, Darbhanga, Bihar: A Study

Kumari Soni[1], Akash Kumar Singh[2] and Rajeev Roushan[3]

[1]Research Scholar, Dept. of Library and Information Science, SKD University Hanumangarh, Rajasthan
[2]Asst. Professor, Dept. of Library and Information Science, SKD University Hanumangarh, Rajasthan
[3]Assistant Professor, Political Science, RNAR College, Samastipur, Lalit Narayan Mithila University, Darbhanga

ARTICLE INFO

Key words: Open Source Software; Plagiarism; Plagiarism Checking Software; Social Science Researchers; Lalit Narayan Mithila University; LNMU.

doi: 10.48165/lt.2024.10.6

ABSTRACT

This study investigates the awareness and usage of open-source plagiarism checking software among research scholars in the Social Sciences discipline at Lalit Narayan Mithila University (LNMU), Darbhanga, Bihar. Given the increasing importance of academic integrity, this study aims to identify the level of knowledge, usage patterns, and perceived benefits of these tools among researchers. A structured questionnaire was administered to 60 participants, revealing a moderate level of awareness but limited usage. The findings suggest the need for enhanced training and institutional support to promote the effective use of open source plagiarism detection software. Although there is a notable intention to use plagiarism detection resources, various barriers remain that must be addressed to optimize their utilization and reinforce academic integrity in research practices.

Introduction

In the digital age, the integrity of academic work is increasingly scrutinized, particularly in the context of research and publication. Plagiarism, defined as the unauthorized use or reproduction of someone else's ideas or work, undermines the foundation of scholarly communication and can have serious repercussions for researchers (Fishman, 2014). As the pressure to publish increases, so does the temptation to engage in unethical practices, making the role of plagiarism detection tools pivotal in maintaining academic integrity.

Open source plagiarism checking software offers an accessible and cost-effective solution for researchers aiming to ensure the originality of their work. Unlike proprietary tools that often require significant financial investment, open-source alternatives provide essential functionalities without the associated costs, thereby democratizing access to important academic resources (Bretag, 2016). However, the effectiveness of these tools relies heavily on the awareness and usage practices of researchers.

At L. N. Mithila University, located in Darbhanga, Bihar, social science researchers play a vital role in contributing to knowledge and policy formulation. Despite the

*Corresponding author.
E-mail address: skishor.89@gmail.com (Kumari Soni)
Received 20.09.2024; Accepted 08.10.2024
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availability of open-source plagiarism detection tools, there has been limited exploration of the awareness and utility of these resources among the university's social science scholars. Understanding the current state of knowledge and usage can provide valuable insights into how these tools can be better integrated into the research process.

This study aims to assess the awareness and utility of open-source plagiarism checking software among social science researchers at Darbhanga. By identifying the level of awareness, usage patterns, and perceived barriers, the research seeks to highlight the importance of these tools in promoting academic integrity and enhancing the quality of scholarly work in the social sciences. Ultimately, the findings will contribute to the ongoing discourse on the need for effective technological solutions in the academic landscape.

Open-Source Plagiarism Checking Software

Open-source plagiarism checking software has emerged as a valuable tool for researchers, educators, and students aiming to maintain academic integrity and ensure the originality of their work. Unlike proprietary software that requires a subscription or licensing fee, open-source tools provide free or low-cost alternatives, making them accessible to a broader audience. This accessibility is particularly important in educational institutions and developing regions where budget constraints may limit access to proprietary options.

Key Features

Open-source plagiarism detection tools typically offer several key features:

- **Text Comparison**: These tools analyze submitted text against a vast database of existing literature, websites, and academic papers to identify similarities and potential instances of plagiarism.
- **Originality Reports**: Most tools generate detailed reports that highlight matched content, allowing users to see where similarities occur and assess whether proper attribution has been made.
- **User-Friendly Interface**: Many open-source tools are designed with usability in mind, featuring intuitive interfaces that make it easy for users to navigate and utilize the software effectively.
- **Customizable Options**: Being open-source, these tools can often be customized or extended to meet specific user needs, allowing for greater flexibility in their application.

Popular Open-Source Plagiarism Checkers

Several open-source plagiarism detection tools have gained popularity among researchers and educators:

- **Plagscan**: While partly proprietary, Plagscan offers an open-source version that allows users to check documents against various databases. It is user-friendly and provides comprehensive reports on similarity indices.
- **Grammarly**: Although primarily a grammar-checking tool, Grammarly includes plagiarism detection features in its premium version. However, its basic version remains free and widely used.
- **MOSS (Measure of Software Similarity)**: Originally developed for computer science, MOSS checks for similarities in programming code but can also be adapted for textual analysis, making it a unique option in the plagiarism detection landscape.
- **Plagiarism Checker X**: This tool allows users to compare documents against online sources and provides a user-friendly interface for quickly identifying potential plagiarism.
- **Unicheck**: While primarily a commercial tool, Unicheck offers a free trial. It supports integration with various learning management systems and provides detailed plagiarism reports.
- **CopyLeaks**: Offers an API for developers and provides a free version for educational institutions. It checks for plagiarism across web content and academic papers.

Advantages of Open-Source Tools

1. **Cost-Effective**: The primary advantage of open-source plagiarism detection software is its affordability. Many researchers, especially in developing countries, may find proprietary tools prohibitively expensive.
2. **Accessibility**: Open-source tools can often be accessed and utilized without institutional barriers, making them available to a wider audience, including independent researchers and students.
3. **Community Support**: Open-source projects often benefit from community contributions, which can lead to continuous improvement, regular updates, and a wealth of shared knowledge among users.
4. **Customization**: Users can modify the software to fit their specific needs, which is particularly useful for institutions looking to tailor solutions for their academic environment.

Challenges and Limitations

Despite their many advantages, open-source plagiarism checking tools also face several challenges:

1. **Limited Databases**: Open-source tools may not have access to extensive databases compared to proprietary options like Turnitin. This can limit their effectiveness in detecting all instances of plagiarism.
2. **Varied Quality**: The quality of open-source tools can vary significantly, with some lacking the advanced algorithms and features found in proprietary software.
3. **User Training**: Effective use of these tools often requires user training, as researchers and students may not be familiar with how to interpret the results or utilize the software effectively.

Literature Review

Open-source plagiarism detection tools have emerged as viable alternatives to proprietary software, which often comes with high subscription fees. Research indicates that while proprietary tools like Turnitin are widely recognized for their effectiveness, open-source options such as Plagscan and Grammarly also offer robust functionalities at little to no cost (Baker, 2020). These tools not only enhance accessibility for researchers with limited financial resources but also contribute to a culture of academic integrity by democratizing access to plagiarism detection capabilities (Ramsay, 2019).

Plagiarism detection software serves a critical function in maintaining academic integrity by identifying instances of copied content and ensuring proper attribution (Bretag, 2016). The rise of digital resources and the ease of information sharing have made it increasingly difficult for researchers to avoid unintentional plagiarism. As noted by Fishman (2014), the consequences of plagiarism can be severe, including damage to reputation, legal repercussions, and academic penalties. Consequently, the use of effective plagiarism detection tools is vital for researchers to safeguard their work.

The consequences of plagiarism can be severe, leading to academic sanctions, loss of reputation, and legal repercussions (Eret & Dincer, 2014). Academic integrity is crucial in fostering a culture of honesty and responsibility within educational institutions. According to Davis et al. (1992), a lack of understanding regarding what constitutes plagiarism often leads to unintentional violations. Educational institutions have a responsibility to promote academic integrity through clear policies and educational programs. Studies show that when institutions emphasize the importance of integrity, students are more likely to adhere to ethical standards in their work (McCabe & Treviño, 1993).

The literature indicates that while open-source plagiarism checking software has the potential to enhance academic integrity and support researchers in their efforts to produce original work, significant gaps in awareness and utilization persist. Addressing these gaps through targeted training and resources is essential for fostering a culture of integrity in academic research. Future studies should focus on evaluating the effectiveness of educational initiatives and exploring the specific needs of researchers to facilitate the adoption of these valuable tools.

Objectives of the Study

1. To assess the level of awareness of open-source plagiarism checking software among research scholars.
2. To evaluate the usage patterns of these tools in their academic work.
3. To identify barriers to the effective use of plagiarism detection software.
4. To providing recommendations based on the findings.

Research Methodology

This study employs a quantitative research design to assess the awareness and utility of open-source plagiarism checking software among social science researchers at L. N. Mithila University, Darbhanga. The quantitative approach allows for the collection and analysis of numerical data, facilitating the identification of patterns and trends related to awareness and usage. The target population for this research includes social science researchers at L. N. Mithila University, Darbhanga. A stratified random sampling method will be employed to ensure that various disciplines within the social sciences are adequately represented. The sample size will consist of 60 participants, which is deemed sufficient to provide reliable and generalizable results.

Data Analysis and Interpretation

Demographics Details

The study sample included 60 research scholars, with a gender distribution of 60% male and 40% female respondents (Figure 1). This demographic representation suggests a male-dominated sample, which could influence the

perspectives and experiences shared regarding research practices.

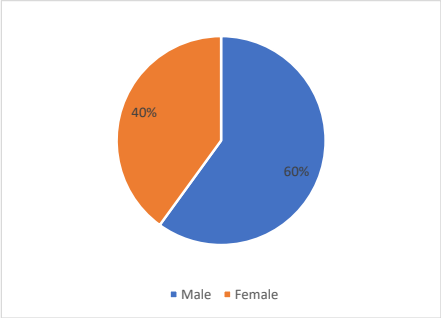

Fig. 1: (Demographics Details)

The data indicates that a significant portion of the respondents (43%) were in the early stages of their research, specifically in their first year (Table 1). This suggests that the majority of the participants are relatively new to the research process, which may impact their familiarity with various research tools and methodologies, including plagiarism detection software.

Table 1: (Demographics Details)

Research Experience	Percentage
Less than 1 year	43 %
1-2 years	26 %
1-3 years	23 %
More than 6 years	8 %

Awareness of Open Source Tools

Awareness of open-source plagiarism checking software was reported by 63% of the respondents (Figure 3), indicating a substantial level of recognition of these tools within the research community. However, only 28% of respondents had utilized these tools in their research work (Figure 4). This discrepancy highlights a gap between awareness and actual usag e, suggesting potential barriers or hesitations among scholars to implement these tools in their research practices.

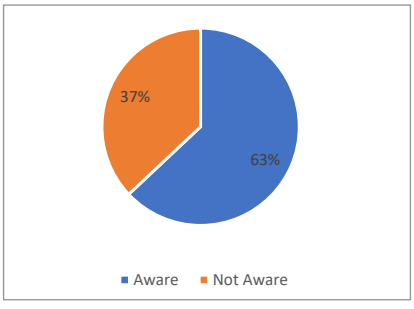

Fig. 3: (Awareness of Open Source Tools)

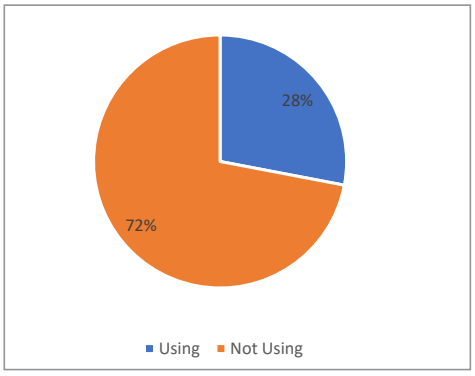

Fig. 4: (Awareness of Open Source Tools)

It is evident from Table 2 that among the open source software the most respondents were aware of Grammarly. Among the various open-source software options, Grammarly was the most recognized tool among respondents, suggesting it is a well-known resource for ensuring writing quality.

Table 2: (Open-source plagiarism checking tools)

Specify which open-source plagiarism checking tools you are aware	**Percentage** *(multiple answers permitted)*
Plagscan	***55%***
MOSS	***23%***
Grammarly (free version)	***68 %***
Other	***31 %***

Usage Patterns

Among those who used plagiarism detection tools, 32% reported using them frequently, while 55 % used them occasionally and 9 % rarely (Table 3). The primary reason for usage was to ensure originality and avoid unintentional plagiarism (Table 4).

Among those who reported using plagiarism detection tools, 32% indicated they used them frequently, while 55% used them occasionally, and 9% reported rare usage (Table 3). The predominant reason for utilizing these tools was to ensure originality and avoid unintentional plagiarism (Table 4). This finding emphasizes the importance placed on academic integrity among research scholars, as they seek to maintain high standards in their work.

Table 3: (Usage)

Usage	Percentage
Frequently (more than 5 times a month)	32 %
Occasionally (1-5 times a month)	55 %
Rarely (less than once a month)	13 %

Table 4: (Reason for usage)

Reason for usage	Percentage
To check the originality of my work	22 %
To avoid unintentional plagiarism	48 %
To evaluate the work of students/peers	4 %
Other	26 %

Barriers to Usage

The study identified (Table 5) several barriers to the effective use of plagiarism detection software, including lack of training (40%), limited access to technology (25%), and insufficient awareness of available tools (35%).

Despite the recognition of the importance of plagiarism detection tools, several barriers were identified that hinder their effective use (Table 5). Notably, 40% of respondents cited a lack of training as a significant barrier, suggesting that educational institutions may need to enhance training programs regarding the use of these tools. Additionally, 25% of respondents reported limited access to technology, while 35% indicated insufficient awareness of available tools. These barriers collectively highlight the need for improved resources, training, and support to facilitate the effective integration of plagiarism detection software into research practices.

Table 5:

Barriers to Usage	**Percentage**
Lack of training	40 %
Limited access to technology	23 %
Insufficient awareness of available tools	22 %
Other reason	15 %

Findings & Recommendation

The findings indicate a moderate level of awareness and usage of open-source plagiarism checking software among research scholars at Lalit Narayan Mithila University. This suggests a need for enhanced educational initiatives to promote the benefits of these tools and provide training on their use.

Key Findings

1. **Demographic Composition**: The study sample included 60 research scholars, with a gender distribution of 60% male and 40% female respondents, indicating a predominance of male scholars in the sample.
2. **Research Stage**: A significant portion (43%) of respondents were in the early stages of their research, specifically in their first year, suggesting that the sample primarily consisted of novice researchers.
3. **Awareness of Plagiarism Detection Tools**: Approximately 63% of the respondents were aware of open-source plagiarism checking software, indicating a reasonable level of awareness about available resources among the scholars.
4. **Utilization of Tools**: Despite the high awareness, only 28% of respondents reported having used plagiarism detection tools in their research, highlighting a gap between awareness and practical application.
5. **Preferred Software**: Among the various open-source software options, Grammarly was the most recognized tool among respondents, suggesting it is a well-known resource for ensuring writing quality.
6. **Frequency of Use**: Of those who used plagiarism detection tools, 32% reported frequent usage, while the majority (55%) used them occasionally, and 9% did so rarely. This indicates that while some scholars actively engage with these tools, many use them sporadically.
7. **Primary Motivation**: The main reason for using plagiarism detection tools was to ensure originality and avoid unintentional plagiarism, underscoring the importance of maintaining academic integrity in research.
8. **Barriers to Effective Use**: The study identified several barriers to the effective use of plagiarism detection software:
   - Lack of training (40%)
   - Limited access to technology (25%)
   - Insufficient awareness of available tools (35%)

These barriers suggest that targeted interventions are needed to enhance the effective use of plagiarism detection resources among research scholars.

Recommendations and Suggestions

Recommendations

1. **Gender Inclusivity Initiatives**: To address the gender imbalance in research, institutions should implement programs that encourage female participation in research activities. This could include mentorship programs, workshops, and scholarships specifically targeting female scholars.
2. **Targeted Training Workshops**: Given that a significant portion of respondents are early-stage researchers, institutions should organize targeted training workshops focusing on the use of plagiarism detection tools. These workshops can cover how to effectively utilize these tools to enhance research quality.

3. **Increase Access to Technology**: To overcome the barrier of limited access to technology, universities should ensure that students have access to plagiarism detection software through institutional licenses. This could be facilitated by providing computer labs equipped with necessary software or remote access options.
4. **Awareness Campaigns**: Institutions should conduct awareness campaigns to promote the availability and benefits of plagiarism detection tools. This could include informational sessions, flyers, and online resources that explain how and when to use these tools effectively.
5. **Integration into Curriculum**: Incorporate training on plagiarism detection tools into the research methodology courses for postgraduate students. This approach will help familiarize students with these resources early in their academic journey.
6. **Encourage Regular Use**: To increase the frequency of tool usage, institutions should encourage scholars to integrate plagiarism checking as a routine part of their writing and research process, perhaps by setting guidelines that recommend using these tools before submission of any research work.
7. **Foster a Culture of Academic Integrity**: Institutions should promote a culture of academic integrity by emphasizing the importance of originality in research. This can be achieved through seminars, discussions, and by showcasing the consequences of plagiarism.
8. **Support for Underutilized Tools**: While Grammarly was the most recognized tool, institutions should also promote awareness of other available plagiarism detection software to provide researchers with multiple options tailored to their specific needs.

Suggestions

- **Feedback Mechanisms**: Establish feedback mechanisms where researchers can share their experiences with plagiarism detection tools, including challenges faced and suggestions for improvement. This can help institutions adapt their support systems effectively.
- **Collaboration with NGOs and Government**: Collaborate with NGOs and government organizations to enhance the accessibility of plagiarism detection tools and training resources, particularly for students in remote areas.
- **Monitor and Evaluate**: Regularly monitor and evaluate the effectiveness of implemented training and awareness programs. This will help in identifying areas for improvement and ensure that the initiatives are meeting the needs of the researchers.

Conclusion

The integrity of academic writing is paramount, especially in the realm of social sciences where research outputs contribute significantly to knowledge and policy formulation. Plagiarism, defined as the act of using someone else's work without proper attribution (Fishman, 2014), undermines this integrity. The rise of open-source plagiarism detection tools offers a potential solution for scholars aiming to ensure originality in their work. Open-source plagiarism checking software plays a crucial role in promoting academic integrity and helping researchers maintain originality in their work. While these tools offer significant advantages in terms of cost and accessibility, challenges remain regarding their databases and overall effectiveness.

As awareness and usage of these tools increase, ongoing improvements and community support will be essential in maximizing their potential impact in the academic landscape. This study seeks to fill this gap by investigating the current state of knowledge and application of these tools. The study reveals that while there is a basic awareness of open-source plagiarism checking software among research scholars at Lalit Narayan Mithila University, the actual usage remains low. Addressing the identified barriers can significantly enhance the integrity of academic work in the social sciences.

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