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USE OF TECHNOLOGY IN LEGAL RESEARCH: CHANGING METHODS & EMERGING CHALLENGES

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ABSTRACT

Legal research is an important part of the legal profession because good legal arguments depend on accurate and reliable information. Traditionally, legal research was mainly carried out through printed books, law reports, journals, commentaries, legal encyclopaedias and physical libraries. Although these methods are still useful, the rapid development of technology has significantly changed the way legal research is conducted.

Today, a researcher can access statutes, judicial decisions, government notifications, research articles and international legal materials within a few minutes through online databases and digital libraries. Search engines, electronic databases, online case-law repositories and artificial intelligence-based tools have made legal research faster and more convenient. Technology has also made it possible to search large amounts of legal information using keywords, concepts and advanced search techniques.

However, the use of technology does not mean that every piece of information available online is reliable. Researchers may face problems relating to inaccurate information, outdated judgments, incorrect citations, plagiarism, data privacy, copyright and excessive dependence on artificial intelligence. The increasing use of generative AI has created an additional challenge because AI systems may produce convincing but incorrect legal information, commonly referred to as AI hallucination.

This research paper examines how technology has changed traditional legal research methods and analyses the major benefits and challenges associated with technology-based legal research. It also focuses on the growing role of Artificial Intelligence in legal research and the need for human verification, research ethics and responsible use of technology. The paper argues that technology should be treated as an assisting tool rather than a replacement for the reasoning and judgment of a legal researcher.

Keywords: Legal Research, Technology, Artificial Intelligence, Digital Legal Research, Legal Databases, Online Research, Data Privacy, Research Ethics, AI, Legal Education.

INTRODUCTION

Legal research is the foundation of effective legal study and legal practice. A lawyer, judge, researcher or law student cannot properly analyse a legal issue without first identifying the relevant law and understanding how courts have interpreted it. Legal research therefore involves much more than simply finding a provision in a statute. It includes identifying legal issues, locating relevant legislation and case law, examining judicial reasoning, comparing different legal positions and developing a logical conclusion.

For a long time, legal research was primarily dependent on physical resources. Researchers had to visit libraries, search through books, read printed law reports and manually locate relevant cases and statutory provisions. This process required considerable time and patience. It was also difficult to search a very large amount of material within a short period.

The development of information and communication technology has changed this situation. Legal information is now available through online databases, digital libraries, government websites and electronic repositories. A researcher can search hundreds or even thousands of documents without physically visiting a library.

Technology has also changed the nature of legal research. Earlier, the researcher mainly searched for information. Today, technology can help in organising information, identifying related judgments, extracting relevant passages and summarising large documents. Artificial intelligence is increasingly being used to assist researchers in these tasks.

The Bar Council of India has itself recognised the importance of technology in legal education. In 2024, the BCI directed law institutions to incorporate emerging areas such as electronic discovery, cyber-security, robotics and Artificial Intelligence into legal education and also emphasised computer education in legal courses.

Therefore, technology is no longer separate from legal research. It has become an important part of the modern research process.

At the same time, technological development creates new challenges. A researcher who simply accepts information generated by an online platform or AI tool without verification may make serious errors. In legal research, an incorrect case citation or a wrongly stated legal principle can affect the entire research conclusion.

The important question, therefore, is not whether technology should be used in legal research. The real question is **how technology can be used effectively while maintaining accuracy,**

originality, reliability and research ethics.

MEANING AND NATURE OF LEGAL RESEARCH

Legal research can broadly be understood as a systematic process of identifying, collecting, examining and analysing legal information to answer a particular legal question.

A legal researcher may need to examine:

- Constitutional provisions;
- Statutes and subordinate legislation;
- Judicial decisions;
- Government notifications;
- Rules and regulations;
- Legal journals;
- Books and commentaries;
- International conventions;
- Reports of committees and commissions; and
- Other relevant legal and socio-legal materials.

Legal research is not merely the collection of information. The researcher must understand the material and determine how it applies to the legal issue being studied.

For example, if a researcher is studying the legal regulation of Artificial Intelligence in India, merely collecting articles about AI would not be sufficient. The researcher would need to examine constitutional principles, existing legislation, regulatory policies, judicial decisions and international developments.

This makes **analysis and interpretation** essential elements of legal research.

TRADITIONAL METHODS OF LEGAL RESEARCH

Before the development of digital technology, legal researchers mainly depended on physical sources.

1. Legal Books

Books were one of the most important sources of legal information. Standard textbooks, commentaries and legal treatises provided detailed explanations of legal principles.

2. Law Reports

Researchers relied heavily on printed law reports to find judicial decisions. Finding a

particular case could require searching through several volumes.

3. Legal Journals

Legal journals provided academic discussions, case comments and analysis of developments in law.

4. Physical Libraries

Libraries were the central place for legal research. Researchers had to physically access books, journals and reports.

5. Manual Indexing

Researchers often used indexes, digests and subject classifications to locate relevant legal materials.

These methods helped develop strong research skills because researchers had to read carefully and analyse sources in detail. However, they were time-consuming and sometimes made access to information difficult.

EVOLUTION OF TECHNOLOGY IN LEGAL RESEARCH

The development of computers and the internet brought a major change in legal research.

The first important development was the digitisation of legal materials. Judgments, statutes and articles began to be stored electronically. This made information easier to preserve, search and share.

The next major development was the growth of online legal databases. Researchers could search legal materials by case name, citation, subject, statute or keywords.

The development of search engines further increased accessibility. Today, legal researchers can locate government documents, judgments and academic materials from different jurisdictions through online searches.

The latest stage is the use of Artificial Intelligence. AI-based systems can assist with document analysis, legal information retrieval, summarisation and identification of related legal materials. Research on legal information retrieval shows that AI technologies such as natural language processing and machine learning are increasingly relevant to the organisation and retrieval of legal information.

Thus, legal research has moved through three broad stages:

Traditional Research → Digital Research → AI-Assisted Research

MAJOR TECHNOLOGICAL TOOLS USED IN LEGAL RESEARCH

1. Online Legal Databases

Online legal databases have become an important research resource. They allow researchers to search case laws, statutes, regulations and other legal materials using keywords and citation-based searches.

Such databases reduce the time required to locate relevant authorities.

2. Digital Libraries

Digital libraries provide access to books, journals, reports and academic materials electronically. Researchers can access these resources from different locations.

3. Government Legal Websites

Government websites provide access to legislation, notifications, policy documents and other official information.

Official sources are particularly important because legal researchers should prefer authentic and authoritative material whenever possible.

4. Search Engines

General search engines have made legal information more accessible. However, search engine results should not automatically be treated as authoritative legal sources.

A researcher should always trace the information back to the original source.

5. Electronic Case-Law Research

Digital case-law repositories allow researchers to locate judgments by case name, citation, judge, subject or keywords. This has significantly reduced the time involved in locating judicial decisions.

6. Artificial Intelligence

Artificial Intelligence is the newest major development in legal research. AI tools can assist researchers in:

- identifying relevant information;
- summarising lengthy documents;
- finding related legal concepts;

- comparing documents;
- organising research material;
- generating initial research ideas; and
- assisting with drafting.

However, AI-generated material must be independently verified before it is relied upon.

CHANGING METHODS OF LEGAL RESEARCH

Technology has changed not only the sources of legal research but also the research process itself.

Traditional approach:

Question → Library → Books → Law Reports → Reading → Analysis → Conclusion

Technology-assisted approach:

Research Question → Online Search → Digital Databases → Case/Statute Identification → Electronic Analysis → Verification → Critical Analysis → Conclusion

The modern researcher can conduct preliminary research much faster. Instead of spending hours locating basic information, more time can be devoted to interpretation and critical analysis.

However, this change has also created a risk. Faster research does not necessarily mean better research.

A researcher may find hundreds of sources but fail to understand which sources are legally authoritative. Therefore, technological efficiency must be combined with traditional research skills.

ROLE OF ARTIFICIAL INTELLIGENCE IN LEGAL RESEARCH

Artificial Intelligence has become one of the most important technological developments affecting legal research.

AI-based legal research tools can process large amounts of information and identify relationships between legal materials. Some systems can assist with finding similar judgments, analysing documents and extracting relevant information.

Recent research on AI-enabled legal databases in India suggests that AI is changing the way legal information is accessed and organised, while also raising concerns about bias, transparency and concentration of legal data.

AI can therefore be useful at different stages of research.

1. Identifying Research Topics

AI can help a researcher brainstorm possible research questions and identify emerging areas of law.

2. Preliminary Literature Search

AI can assist in identifying books, articles and other materials that may be relevant to a particular subject.

AI may assist in identifying cases involving similar legal issues.

3. Document Summarisation

Long judgments and reports can be difficult to read within a short period. AI tools can provide preliminary summaries that help researchers identify important sections.

4. Comparative Research

AI can assist in comparing legal provisions and identifying differences between jurisdictions. However, AI should not be treated as the final authority.

A researcher must read the original judgment, statute or article before relying upon the information.

ADVANTAGES OF TECHNOLOGY IN LEGAL RESEARCH

1. Saves Time

Technology significantly reduces the time required to locate legal information.

2. Easy Access

Researchers can access legal information from almost anywhere with internet access.

3. Large Volume of Information

Digital systems allow researchers to search large collections of legal documents.

4. Better Organisation

Electronic folders, databases and research-management tools make it easier to organise research materials.

5. **Easy Comparison**

Researchers can compare statutes, judgments and academic materials more efficiently.

6. **Wider Access to International Law**

Technology has made it easier for Indian researchers to access international judgments, treaties, foreign legislation and academic literature.

7. **Assistance to Students**

Technology has made legal research more accessible to law students who may not have access to large physical libraries.

8. **Supports Interdisciplinary Research**

Modern legal issues often involve technology, economics, sociology, medicine and other disciplines. Digital research makes interdisciplinary material easier to locate.

EMERGING CHALLENGES IN TECHNOLOGY-BASED LEGAL RESEARCH

The advantages of technology should not hide its limitations. Modern legal researchers face several new challenges.

1. **Accuracy and Reliability**

One of the biggest problems is the reliability of online information.

Not everything available on the internet is legally correct. A researcher may accidentally rely on an outdated provision, an incorrect summary or an unofficial version of a judgment.

Therefore:

Online availability $\neq$ Legal authenticity

The original and authoritative source should always be checked.

2. **AI Hallucination**

Generative AI systems may sometimes provide information that appears correct but is actually false.

For example, an AI system may generate a case citation that does not exist or incorrectly

describe what a court decided.

This is particularly dangerous in legal research because citations and legal authorities must be accurate.

A recent Indian legal research guide similarly emphasises that AI-generated legal research should be grounded in actual sources and that citations and the continuing validity of authorities should be verified.

Therefore, the basic rule should be:

AI-generated information → Verify with original authority → Then use

3. Plagiarism

Technology has made copying information extremely easy.

A researcher can copy text from websites, articles or AI-generated material within seconds. This creates a serious risk of plagiarism.

Academic research requires originality. Even when information is obtained electronically, the researcher must properly acknowledge the source.

Technology should therefore be used for **research assistance**, not for copying another person's work.

4. Data Privacy

Legal research may involve sensitive information, including personal details contained in court documents.

Researchers must be careful while uploading confidential or personal information to online platforms or AI systems.

India's Digital Personal Data Protection Act, 2023 recognises the importance of protecting digital personal data while also permitting lawful processing of such data.

Therefore, researchers should consider privacy and confidentiality before entering sensitive information into third-party technological tools.

5. Copyright Issues

Digital availability does not mean that every document can be freely copied or reproduced. Books, journal articles, databases and other digital materials may be protected by copyright. Researchers must therefore distinguish between:

Accessing information and reproducing protected content.

Proper citation and responsible use of copyrighted material are essential.

6. ***Algorithmic Bias***

AI systems learn from data. If the underlying data contains biases, an AI system may reproduce or even strengthen those biases.

In legal research, this may influence which cases or materials are presented to the researcher.

Therefore, researchers must maintain a critical approach instead of assuming that an AI-generated result is neutral.

7. ***Digital Divide***

Not every researcher has equal access to technology.

Some institutions have advanced databases, high-speed internet and AI tools, while others may have limited resources.

This can create inequality between researchers and educational institutions.

Technology can therefore improve access to justice and knowledge, but only if access to technology itself is reasonably available.

TECHNOLOGY AND RESEARCH ETHICS

Research ethics become even more important when technology is used. A legal researcher should follow certain basic principles:

Accuracy

Information must be verified before being used.

Originality

The researcher must avoid plagiarism.

Transparency

Where necessary, the researcher should disclose the use of technological or AI assistance.

Confidentiality

Sensitive information should not be unnecessarily uploaded to external platforms.

Responsibility

The final responsibility for the research remains with the researcher.

Technology may assist a researcher, but it cannot take responsibility for the final research product.

IMPACT ON LEGAL EDUCATION

Technology has also changed legal education.

Law students are increasingly expected to understand digital research tools. Modern legal education therefore cannot be limited to traditional reading methods.

The Bar Council of India has recognised this development by directing legal education institutions to incorporate areas such as Artificial Intelligence, electronic discovery, cybersecurity, robotics and blockchain into legal education.

This shows that technology skills are becoming part of modern legal education. A law student should therefore ideally possess two kinds of skills:

Traditional Legal Skills + Technological Research Skills

Traditional skills include:

- legal reasoning;
- interpretation;
- critical thinking;
- case analysis; and
- understanding legal principles. Technological skills include:
- database searching;
- electronic research;
- digital document management;
- understanding AI tools; and
- verification of online information.

The combination of both is necessary for effective modern legal research.

INDIAN PERSPECTIVE

India has witnessed significant growth in digital access to legal information.

Government portals, online case-law resources, digital libraries and commercial legal databases have made legal materials more accessible.

The development of technology is also reflected in legal education policy. The BCI has emphasised that legal education must respond to changing technology and has specifically directed institutions to incorporate computer education and emerging technological subjects. The Indian legal research environment is therefore moving towards greater digitalisation.

At the same time, India needs stronger awareness about responsible use of AI in legal research.

Technology should not result in researchers becoming dependent on automated answers.

The researcher must continue to:

1. identify the legal issue;
2. locate primary legal sources;
3. read the original authority;
4. verify the information;
5. critically analyse the law; and
6. develop an independent conclusion.

CRITICAL ANALYSIS

Technology has clearly improved the speed and accessibility of legal research. However, speed should not become the only measure of good research.

A good legal researcher does not simply collect information. The researcher must decide:

- whether the source is authoritative;
- whether the law is still valid;
- whether the case has been distinguished or overruled;
- whether the information is relevant;
- whether the source is biased; and
- how the law should be interpreted in the particular context. These tasks require legal reasoning.

AI can help with the mechanical part of research, but legal research also requires human judgment.

Therefore, the future of legal research should not be viewed as:

Human Research vs Technology

Instead, it should be viewed as:

Human Legal Reasoning + Responsible Technology

This approach allows researchers to use technology without losing the essential human element of legal analysis.

FINDINGS OF THE STUDY

The research leads to the following findings:

1. Technology has significantly changed traditional methods of legal research.
2. Online databases and digital libraries have made legal information more accessible.
3. Technology has reduced the time required for preliminary legal research.

4. Artificial Intelligence is increasingly becoming an important research-assistance tool.
5. AI can assist with searching, summarising and organising legal information.
6. AI cannot be treated as a substitute for primary legal authorities.
7. Incorrect or fabricated AI-generated citations are a serious concern.
8. Plagiarism has become easier because digital information can be copied quickly.
9. Data privacy and confidentiality are important concerns when using online and AI-based tools.
10. Legal researchers require technological literacy along with traditional legal research skills.
11. Human verification and critical analysis remain essential.
12. Legal education institutions should provide students with proper training in digital legal research and responsible AI use.

SUGGESTIONS

Based on the above analysis, the following suggestions can be made:

1. *Technology Training*

Law students should receive practical training in digital legal research.

2. *AI Literacy*

Legal education should teach students how AI works, its limitations and the risks of relying on AI-generated information.

3. *Mandatory Verification*

Researchers should verify AI-generated legal information against original judgments, statutes and other authoritative sources.

4. *Ethical Guidelines*

Universities and research institutions should develop clear guidelines for responsible use of AI in academic legal research.

5. *Protection of Confidential Information*

Researchers should avoid uploading sensitive personal or confidential legal information to unknown platforms.

6. *Promotion of Original Research*

Technology should be used to improve research rather than to replace independent thinking.

7. *Access to Technology*

Educational institutions should make reliable digital research facilities available to

students.

8. *Continued Importance of Libraries*

Physical libraries should not be completely ignored. Books, commentaries and printed resources remain valuable sources of legal analysis.

CONCLUSION

Technology has changed the way legal research is conducted. The traditional researcher who depended mainly on physical books and law reports has been replaced by a researcher who can access a huge amount of legal information through digital platforms.

Online databases, electronic libraries, search engines and Artificial Intelligence have made legal research faster, easier and more accessible. They have also created opportunities for researchers to explore national and international legal developments more effectively.

However, technological development also brings serious challenges. Inaccurate online information, AI hallucinations, plagiarism, copyright issues, data privacy, algorithmic bias and excessive dependence on technology can affect the quality of legal research.

The most important lesson is that technology should be considered a **tool for legal research, not a replacement for legal reasoning**. An AI system may help locate information, but the researcher must determine whether that information is correct and legally relevant.

The future of legal research will therefore depend on the ability of researchers to combine technological skills with traditional legal skills. A successful legal researcher of the future will not simply know how to search the internet or use AI. The researcher will know **how to question** the information, verify it, analyse it and use it responsibly.

Thus, technology has not reduced the importance of legal researchers. Instead, it has changed the skills that a good legal researcher needs. The future lies in a balanced approach where technology provides speed and accessibility, while human judgment provides accuracy, interpretation and ethical responsibility.

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