



## ARTIFICIAL INTELLIGENCE AND LEGAL ANALYTICS: TRANSFORMATIVE TOOLS FOR LEGAL RESEARCH

By

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### ***Abstract***

*The legal profession involves extensive research work termed legal research, it is a skill that must be mastered by law students, law teachers and practicing legal practitioners. These group of people spend great deal of their time reading and writing, preparing briefs, reports, letters and other assignments. Artificial intelligence has transformed the traditional practices of searching for legal resources which historically has been a daunting labor-intensive process involves searching for legal resources in both prints and electronic formats, legal research in the year past involves assembling and gathering of voluminous books on both primary and secondary sources of law for legal research activities mostly in the law libraries of a law school, courts and law firms. This paper discusses various legal research tools that can ease the work of legal professionals and students and gathered information from literature such as journal articles, databases and other sources. The advent of technological innovation has brought a lot of changes to legal researching using technological tools, mostly done through online platforms such as Google and Bing, Westlaw, Heinonline, Case text, legal databases and other online tools to conduct efficient and effective legal research.*

**Keyword: Artificial intelligence, legal analytics, Transformative, Tools, Legal research**

### **1.0 INTRODUCTION**

Artificial intelligence has permeated every sector of the economy and it has continued to evolve and integrate into our daily lives and activities. Legal profession and academia cannot be an exception in embracing Artificial intelligence in their day- to daily activities especially in conducting legal research which is the foundation of any legal proceeding.<sup>1</sup> Artificial intelligence are technologies such as machine learning and natural language processing.

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<sup>1</sup> Darth Vaughn and Whitney Stefko. 'Artificial intelligence and the practice of law. Arizona Summit on Artificial Intelligence, Law and Courts, <https://nacmnet.org/wp-content/uploads/AI-and-Practice-of-Law-Final-White-Paper.pdf> accessed on 2nd November, 2024.



Black's law Dictionary defined legal research as the finding and assembling of authorities that bear on a question of law.<sup>2</sup> The process of identifying the law in statutes, regulations, court decisions and opinions that can be apply to the facts of your case. Legal research support lawyers to find legal opinion, legal precedents to back up an argument in court be it a brief or a motion.

Legal research is the study of scientific and technical methods and approaches of the science of law. Legal research is a process of discovering the authorities that are applicable to specific legal issues by lawyers, law students, judges and law lecturers. It is a method of searching for relevant information in solving legal problems encountered by lawyers in the course of solving legal riddles and puzzles. The basic elements in legal research are legal researcher. They are legal practitioners trained in the art of law, they write legal drafts to answer specific legal questions either a judge in court or student learning to become lawyer, law teacher who teaches law, who writes articles, books for the purpose of enriching<sup>3</sup> the students Legal research involves searching of various law sources such as primary, secondary sources, judicial precedent or case law, statutes, legislation, Acts and administrative decisions. Legal research is the process of identifying and retrieving information necessary to support legal decision making to solve complex issues to get specific facts requires complete answers and for clients to pay for your expertise. Legal research involves consulting primary and secondary sources of legal information to see if a case has been reversed, overruled overturned, reaffirmed, questioned or cited the precedential value of a case be determined.<sup>4</sup>

There are limited legal framework on Artificial Intelligence, particularly in Nigeria, Nigeria has no law guiding the use of Artificial Intelligence, in 2024 the government of Nigeria came up with an initiative by unveiling the Nigeria Artificial Intelligence Research Scheme (NSIRS)<sup>5</sup> Other laws guiding the use of technology include Nigeria Data Protection Act (NDPA) and Cybercrime Act.<sup>6</sup>

<sup>2</sup> Garner, B.A, Black's law dictionary 10<sup>th</sup> Ed. Thomson West, London, (2014) 246

<sup>3</sup> Patel, K. & Gandhi, A.' Analyzing the impact of Artificial Intelligence on legal research and legal education' (2023), International Journal of Legal Developments and Allied Issues, 9(5),p.10 <https://thelawbrigade.com/>, accessed on 4<sup>th</sup> November, (2024)

<sup>4</sup> Awwal – Bolanta, O. Artificial Intelligence governance in Nigeria: Analysis of gaps in existing legal frameworks (2024) (8) Ekiti State University Law Journal. 82-114.

<sup>5</sup> Established in 2024, NAIS is one of the National Information Technology Development Agency's (NITDA) initiative on Artificial Intelligence in collaboration with National Centre for Artificial Intelligence and Robotics (NCAIR).

<sup>6</sup> Cybercrime (Prohibition, Prevention, Amendment Act 2024), 6(2)



### 1.1 Evolution of Legal Research

The technological development of legal research began with the invention of the printing press in the 18<sup>th</sup> century allowed case law to be printed and distributed widely to the people. In 1879 a bookseller turned publishers by the name John West started publishing decisions of the Judges and later another publisher known as Frank Shepherd published Shepherd citator a digest which is still available in law libraries around the world enable researchers to look at the citation of a case. Digitization of legal resources started in the year 1960s using computer to make legal publishing using machine -readable format of case laws. Which was done by the government of the United States of America, the first database was Finding Legal Information Through Electronics (FLITE in 1963, by 1971, the Department of Justice introduced Justice Retrieval and Inquiry System (JURIS) followed by Mead Data Corporation also known as LEXIS in 1973 to offer the first commercial full text case service and Westlaw came on board in 1975 and LOIS publisher in 1976. By 1990s came the development of World Wide Web with the internet allowed educational institutions, government and individual to access legal resources both subscription and free legal resources<sup>7</sup>.

The transformation in legal researching was as a result of the invention of the internet, computer and World Wide Web which have made law library to be accessible to users with a click of buttons and the era of researching with piles of volumes of books has gone. Data bases can be accessed by many users at different jurisdictions at the same time. Legal research is the ability to find, evaluate, and use sources of legal information to solve a legal problem .

Legal research requires understanding and interpretation of legal precedents. Legal research is the method to first determine the stages required to answer the legal question and then trail the process to gather relevant data to answer those questions. This entire procedure of legal research forms an integral part of the legal profession.

Legal research is a necessity not an optional or incidental part of the legal process. Commonly, any legal practice will search for primary and secondary sources of legal information, irrespective of jurisdiction and subject matter. The two legal information resources of legal research are primary law concentrating on case law, status, and regulations and secondary sources explaining the legal theory, such as treaties, journals, and digests ,identifying facts, arguments, and principles relevant to the matter at hand. In addition, legal research provides a wide-ranging of any legal issues. Legal research includes a search for sufficient authority that can be applied precisely to facts or issues within the ambit of the

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<sup>7</sup> Rajkumari, A. 'Indian legal research: An evolutionary and perspective analysis (August 23, 2000)<http://14.139.60.116:8080/jspui/bitstream/123456789/719/14/Indian%20Legal%20Research.pdf>, accessed November 3, 2024



law.<sup>8</sup> In addition, brings legal research in line with the definition of the law, as stated above, by viewing it as a process of identifying the rules that govern human activity and finding sources that explain or analyses those rules. It is, therefore, obvious that legal research necessitates an organized and systematic research rather than mechanical process.<sup>9</sup>

### **1.2 Evolution of Artificial Intelligence**

The idea of Artificial intelligence started in the mid- 20<sup>th</sup> century by researchers in an attempt to build tools that can think like human being, machines to mimic human cognition. Massachusetts Institute of Technology researcher Joseph Weizenbaum was the first to introduce a computer programme that was able to communicate between people using natural language processing. By the 21<sup>st</sup> century deep learning and algorithms mimicking the neural networks within human brains was introduced and later the introduction of natural language processing as a linguistic way of equipping machines with ability to communicate in human language be it spoken and written, and the recent development of the Generative Artificial intelligence a technological tool that can generate new contents, images texts and codes. Artificial intelligence technology derives computer processable semantic and contextual meaning from natural and human language. The practice of law and the administration of justice will be more radically affected in the coming fifty years by Information Technology than by any other single factor of which we can be aware today. Leaders in the legal profession acknowledge that legal practice is undergoing a transformation, and most commentators believe that the pace of this transformation is accelerating.<sup>10</sup>

### **1.3 Understanding Legal Analytics**

Technological innovation was first introduced by Lee Loevinger in 1949 using the term Jurimetrics which involves application of mathematical equation and statistical data to the principles of law in order to address legal problems and later introduced was the legal analytics also known as predictive justice by using quantitative legal prediction to get legal results. Data sets were been made through legal analytics algorithms such as case law, precedents, statutes and rules.<sup>11</sup>

<sup>8</sup> Foster, L. & Kennedy, B. 'Technological development in legal research' (2000), The Journal of Appellate Practice and Process, 2(2), P275.

<sup>9</sup> Serfontein, E. 'Inclusivity towards legal research: A historical and future perspective; New Contree,64(1) <https://newcontree.org.za/index.php/nc/article/view/329>, accessed on 4<sup>th</sup> November, 2024.

<sup>10</sup> Zakir, M.H., Bashir, S., Naz, A.R., Khan, S.H., (2024)' Artificial Intelligence and Machine Learning in legal research: A comparative analysis, Qlantic Journal of Social Sciences, 5(1), p. 307-317, available at <https://submissions.qlantic.com/index.php/qjss/article/view/344>, accessed on November 6, 2024.

<sup>11</sup> Legal research skills: An Australian Law Guide : 2024 edition, <https://uq.pressbooks.pub/legal-research-skills-an-australian-law-guide-2024-edition/> accessed on 3<sup>rd</sup> November, 2024



In the past, legal practitioners have served clients by using their brain and applying facts to law using legal reasoning to identify relevant cases, statutes, case law and rules which is a core skill of successful lawyering. The evolution of technology, a new tool emerged known as legal analytics as supplement to legal research or legal reasoning done by lawyers using their brain.<sup>12</sup>

Legal analytics relies on advanced technologies such as Natural Language Processing, Machine Learning and Artificial Intelligence to structure and analyses raw legal data from millions of legal documents. Legal analytics provides quick access to legal resources which traditionally will take longer time to do. It is a technological legal research procedure with a stroke of button used to find quick answers to legal questions<sup>13</sup>. Legal analytics is the process of incorporating data into law through forecasting, legal strategy, legal management in legal industries and is also applicable to legal research. Application of legal analytics to legal research can lead to smart conduct of legal research and save the time of user and with little stress. Legal analytics involves mining data contained in case documents and docket entries and aggregate data to provide insights into the behaviour of the judges, lawyers, parties, courts and law firms. Legal analytics is the use of big data, algorithms, and Artificial intelligence to make predictions of trends and outcome, it involves large amount of data such as court dockets, case outcome, legal filing, client information, predict results and improve decision making, court records, court appearances, motions and rulings, identifying patterns in legal proceedings.<sup>14</sup> Examples of legal analytics tools are case text for e- discovery analytics software provides electronic information exchange between parties during investigations. Another one is predictive legal analytics used to analyses the trends, correlation and irregularities in cases to build strategies to win cases and evaluate suspects in a matter. Legal analytics are of much benefits to law students, lawyers and law teachers, it saves time on manual data sourcing, predict case outcome through e-discovery, prioritize legal documents that can be relevant to cases and anticipate and predict results.

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<sup>12</sup> Nasser, B., Saleh, M., Abu- Naser, S. (2023)' Implications and applications of Artificial Intelligence in legal domain, International Journal of Academic Information Systems Research,7(12), P18-25.

<sup>13</sup> Spiegel, R., (2023) 'Legal analytics: Definition, tools and applications. <https://www.smokeball.com/blog/legal-analytics>, accessed on 5<sup>th</sup> November, 2024.

<sup>14</sup> Ashley, K., (2017) ' Artificial Intelligence and legal analytics : New tools for law practice in the digital age. <https://www.cambridge.org/core/books/artificial-intelligence-and-legal-analytics/> accessed 7<sup>th</sup> November, 2024



#### **1.4 Artificial Intelligence and the Law**

Artificial Intelligence is now popular among legal practitioners across the globe, it is a software that performs processes which a lawyer would otherwise have done using his cognitive. AI would mirror a person's reasoning, mimic the analytical reasoning of lawyers to arrive at a legal solution same as legal research and arrive at same conclusion as a real legal practitioner. IBM Watson project was developed in the form of ROSS intelligence programme that assists in legal research citations built by loading corpus of sources of legal materials. the first AI introduced to ease legal research. The founder of Ross Artificial Intelligence has been introduced to assist legal researchers as tools of legal analysis for legal research discovery, and document review, contract review.<sup>15</sup>

Artificial intelligence tools are used in legal analytics by law firms in the documents review, contract negotiations, enhanced document retrieval process, generate legal memos, document generation, such as wills, incorporation documents, loan agreement, promissory notes and contracts, filling of motions, complaints, briefs and predictive analytics which predicts the outcome of a case through analysis of data using constitutions, statutes, case laws and secondary sources.<sup>16</sup>

#### **2.1 Artificial Intelligence Tools impacting Legal Research**

The AI tools are being used in legal analytics. AI is the process of simulating human intelligence through machine processes, robots perform functions and think and reason like human beings. AI tools in legal research include legal research databases, document reviewer software, chatbots such as<sup>17</sup>

I. ROSS intelligence is a software that analyses documents critically and review document using natural language processing to perform legal research and memo drafting, provides summary of a case and give alerts of relevant cases, equips with related cases and arguments and looks overturned cases by the Supreme Courts.<sup>18</sup>

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<sup>15</sup> Navneet, K., (2022) 'Transformative trends: Exploring the evolving role of Artificial Intelligence in the legal landscape. International Journal of Science and Research, 7(942), P.1-4.

<sup>16</sup> Marchant, G.E., (2017) 'Artificial Intelligence and the future of legal practice' the SciTech Lawyer, 1(4), [https://www.iadclaw.org/assets/1/7/10.4-\\_Marchant\\_ai\\_and\\_practice](https://www.iadclaw.org/assets/1/7/10.4-_Marchant_ai_and_practice)

<sup>17</sup> Gupta, S. & Tripathi, K., (2023) 'Reviewing the new tools in law: Legal analytics, CPJ Law Journal, 13(1), <https://www.cpj.edu.in/wp-content/uploads/2023/01/CPJ-LAW-JOURNAL-Jan-2023-Issue-1.pdf>, accessed 4<sup>th</sup> November, 2024

<sup>18</sup> Gupta, S. & Tripathi, K., (2023) 'Reviewing the new tools in law: Legal analytics, CPJ Law Journal, 13(1), <https://www.cpj.edu.in/wp-content/uploads/2023/01/CPJ-LAW-JOURNAL-Jan-2023-Issue-1.pdf>, accessed 4<sup>th</sup> November, 2024



that can answer legal questions using Natural Language Processing to understand questions in natural language and provide relevant answers. The following AI tools are available for the practice of law, teaching of law and learning of law.

- ii. Lex Machina owned by Lexis Nexis is an analytical software for craft strategies of cases, analyzing previous litigation data sets, case records of judges and their behaviour and strategies of opposing counsels, trial management and algorithms, opposing counsel and parties and predicts the chances of a motion to be granted or denied.<sup>19</sup>
- iii. Hyperlex manages and monitor contract from creation to negotiation by drawing comparisons and offers best and speedy conclusion.
- iv. Law Geex uses machine learning for contract drafting and review, make suggestions and identifies missing clauses, speed up contract review processing and it saves time and energy.<sup>20</sup>
- v. TIMI was launched in 2018 as the first AI legal assistance in Nigeria which can interact with users to get things done fast is a local AI by Law pavilion designed to manage, record and analyses and present legal data in an accessible way for lawyers and legal researchers.<sup>21</sup>
- vi. Evisort is a software that accelerates contract creation and management process by using natural language processing, it uses advanced AI to automate data search, extracts data from contract to improve accountability by keeping track of renewal and approval of contracts<sup>22</sup>.
- vii. KIRAWas founded by Noah Waisberg as a software using advanced machine language algorithm to provide due diligence on contract and also useful in contract review by highlighting, extracting relevant facts for analysis<sup>23</sup>
- viii. DO NOT PAY is a legal research assistant for legal professionals in searching relevant legal information speedily, give legal advice, document drafting and providing solution to legal matters<sup>24</sup>

<sup>19</sup> ROSS Intelligence-Features, <https://www.rossintelligence.com/feature> accessed 5th November, 2024.

<sup>20</sup> The power of Artificial Intelligence in legal research <https://www.lexisnexis.com/community/insights/legal/b/thought-leadership/posts/the-power-of-artificial-intelligence-in-legal-research> accessed on 3<sup>rd</sup> November, 2024

<sup>21</sup> Welcome to LexisNexis- Choose Your Path, <https://www.lexisnexis.com/en-us/gateway.page>, accessed 3<sup>rd</sup> November, 2024.

<sup>22</sup> TIMI AI companion for every lawyer, <https://legalnaija.com/timi-ai-companion-for-every-young-lawyer/> accessed 29<sup>th</sup> November, 2024

<sup>23</sup> The unparalleled leader in contract AI, <https://www.evisort.com/> accessed 28<sup>th</sup>, November, 2024.

<sup>24</sup> What is Kira, How does it work? <https://www.legaltechitalia.eu/kira-systems-what-if-all-the-heavy-lifting-could-be-done-by-ai/> accessed 23<sup>rd</sup> November, 2024.



- ix. Legal Pedia a comprehensive digital platform designed for legal research and productivity in Nigeria, provides access to a wide range of resources, including, updated laws applicable in Nigeria, sharing research, creating and exchanging notes, and collaborating with team members<sup>25</sup>.
- x. CARA stands for Context-Aware Research Assistant legal research tool, an advanced AI-powered platform designed to streamline legal research. CARA helps legal professionals to quickly find relevant cases, statutes, and other legal documents tailored to their specific legal context<sup>26</sup>.
- xi. Key Cite is a product of Westlaw, Thomson Reuter, is an online citation tool, helps in verifying the validity of legal authorities such as cases, statutes, and regulations and to find additional resources related to those authorities, also complementing the online Shepard's citation tool<sup>27</sup>.
- xii. Luminance is a legal research tool primarily designed to assist legal professionals in document review, contract analysis, due diligence, and compliance checks. Luminance focuses on analyzing and managing large sets of legal documents.<sup>28</sup>

### 3.0 CONCLUSION AND RECOMMENDATIONS

Artificial intelligence has become important tools in legal research, users of legal resources such as students, law lecturers, practicing lawyers, judges need to equip themselves with the necessary skills in order to enjoy the benefits of these tools. Due to the dynamic nature of law, Legal research is a continuous process for legal practice and to ensure up to date research, legal practitioners should keep abreast of current findings in the practice through the use of evolving technologies for effective and efficient legal research activities. As Artificial Intelligence continues to evolve, integrating it into legal research and education will be essential for maximizing its potential while maintaining the integrity of the legal profession.

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<sup>25</sup> The rise of the robot lawyer, Do Not Pay legal AI faces challenges  
<https://www.lexology.com/library/detail.aspx?g=fcf42316-ad93-40f5-9e10-c2aecc17cb9a>

<sup>26</sup> LegalPedia speedy legal research tool. <https://legalpediaonline.com/speedy-legal-research/> accessed on 6<sup>th</sup> November, 2024.

<sup>27</sup> Biresaw, S.M., & Saste, A.U., 'The impacts of AI on research in the legal profession. *International Journal of Law and Society*, 5(1), P 53-56. <http://www.sciencepublishinggroup.com/j/ijls>

<sup>28</sup> Ashley Waters, '11 Common Ethical Issues in Artificial Intelligence' (CompTIA Community Blog, November 16 2023, accessed 19 October 2023)



The deployment of Artificial Intelligence (AI) and legal analytics into legal research has proven to be a transformative development, pointedly enhancing efficiency, accuracy, and accessibility to legal information. AI-powered tools, such as machine learning algorithms, natural language processing, and predictive analytics, enable legal professionals to conduct comprehensive case law analysis, identify relevant precedents, and forecast judicial outcomes with greater precision. It is highly recommended that legal institutions, law firms, and academic bodies adopt AI-driven legal research tools to improve decision-making processes and streamline legal workflows. Furthermore, policymakers should establish ethical guidelines and regulatory frameworks to ensure the responsible use of AI in legal practice. Additionally, legal education curricula should incorporate AI literacy to equip future lawyers with the necessary skills to leverage these technologies effectively.