

The Transformative Influence of Generative Artificial Intelligence on Legal Research and Writing in Pakistan

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Abstract

Artificial Intelligence (AI) is a modern technology that has started to encompass almost all the fields involving machine learning processes, enabling computers to imitate human intelligence. Generative AI (GAI) is a subset of AI technology that creates original content like text and images. The integration of AI into the legal domain has transformed key areas, including legal research and writing, document examination, case predictions, contract reviews, and administrative tasks in various facets of the legal profession. This paper presents an overview of AI technology, its history, and its impact on the legal field. Furthermore, it delves into the intricacies of AI's emergence in the field of legal research, the effects of GAI on legal writing, and explores the perspectives of Pakistani lawyers regarding the usage of AI technology in the legal field and their attitude towards the modification of conventional methods of legal practice. Following a comprehensive study, this paper elaborates on how the incorporation of AI technology in the legal field has transformed legal research and writing, emphasising its effects on efficiency, accuracy, and ethical considerations within the profession. Additionally, it examines the challenges and opportunities arising from the transformative influence of AI technology in the legal field, both globally and in Pakistan. The conclusion of this article includes recommendations for effectively utilising GAI tools, suggestions for addressing challenges (development of AI tools specifically having a depository of Pakistani legal material) and maximising the benefits of AI technology in the legal field.

Keywords: Artificial Intelligence, Legal Research, Generative Artificial Intelligence, Legal Writing, Legal Document Automation, AI-assisted Legal Research, Transformative Influence

Introduction

In the modern era, scientific progress across all fields is advancing rapidly and indiscriminately (Bisen, 2019). The advent of Machine Learning (ML) and the revolutionary impact of AI in the realm of technology have fundamentally shifted the trajectory of technological advancement. AI technology is being deployed in all professional fields to reduce manual work and human effort and to facilitate technical requirements with the help of intelligent machines. Like many others, the legal domain is also experiencing the transformative effects of AI technology (Surden, 2019). In the legal profession, AI and its generative features are being utilised for legal research, content creation, organising legal documents in firms and offices, extracting and managing data for legal pleadings in courts, and legal decision-making by judges (Surden, 2019). This paper sheds light on the usage of several AI tools in the legal domain and critically explores the implications of AI technology in the legal profession, assessing both the benefits and the risks associated with its adoption. Furthermore, it presents the views of Pakistani legal professionals regarding the practical application of AI, mainly about how it impacts legal research and the development of Generative AI tools for legal writing. Through the examination of these advances, the study aims to grasp the changing role of AI in restructuring legal practice in Pakistan. The paper concludes by offering practical recommendations for optimising AI tool usage in the legal domain, formulating an AI tool having access to the depository of Pakistani legal material for AI-supported legal research and writing in Pakistan, recognising potential limitations, and suggesting avenues for future research in this sphere, and effective usage of AI technology in the legal profession.

Literature Review

Encyclopedia of Britannica (2024) defines AI, as “the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings, this term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalise, or learn from experience” (Britannica, 2024). Bisen (2019) articulated that the application of AI in various professions is common nowadays. It is broadly used

in numerous fields including virtual assistants or Chatbots, agriculture sciences, independent flying retail, shopping and fashion, security services, sports analytics and exercises, animals' reproduction, stock administration, autonomous mobiles, healthcare and medical, warehousing and calculation, and within the supply chain (Bisen, 2019). The legal profession has not been exempted from the transformative impact of technological advancements. Traditional methods of research and writing in the legal field are being replaced by the innovative capabilities of GAI, which has revolutionised the domain through the application of automated content creation. Surden (2019) states that combining artificial intelligence (AI) with law involves using computers and the science of ML to make the law easier to comprehend, administer, utilise, access, and anticipate. Additionally, it entails practising AI in legal research and writing, using AI by Judges in decision-making, and policing (Surden, 2019).

Studies have demonstrated that a variety of AI-powered tools are now available for legal research, including Casetext, CoCounsel, Blue J, CARA, eBrevia, and HYPO (Sunstein, 2001), ROSS Intelligence, and LEVERTON (Kabir & Mohammad Nazmul Alam, 2023) and GAI tools for legal writing like ChatGPT, Relativity, Latch, (Law Rank, 2024) LawGeex, Beagle, Legal Robot, COIN (Contract Intelligence), Auto-GPT (Clio, 2024) and others are being widely utilised by legal professionals across the world in their practice. These AI tools are now performing tasks that were previously done by lawyers manually, such as research, content creation, drafting smart contracts, reviewing contracts, composing pleadings, formulating arguments, and even contributing to legal decision-making via integrating deep learning (DL) and natural language processing (NLP) more efficiently, accurately, and briskly than traditional methods. However, the situation in Pakistan is markedly different. According to Dharani (2023), traditional research methods typically involve visiting a law library, consulting legal publications and books, and manually searching for relevant cases. Pakistani lawyers mostly follow these conventional methods in their practice, and little has been discovered about their mindset and behaviour surrounding the use of AI technology in this sensitive field. Moreover, there are significant concerns regarding the efficiency and ethical implications of utilising AI tools in the legal domain (Dharani, 2023).

Methodology

This study seeks to address these critical questions arising from a comprehensive examination of the subject, including: How does the integration of AI technology in the legal field influence the efficiency and accuracy of legal research and writing? Furthermore, what challenges and opportunities are presented by its transformative impact, both globally and in Pakistan? The research aims to explore these issues in depth, highlighting the challenges and opportunities associated with the adoption of Generative AI (GAI) in the legal domain. Additionally, through in-depth interviews and questionnaires, this paper presents the perspectives of Pakistani lawyers regarding their awareness, understanding, and use of AI technology in legal research and writing.

The research methodology used in this paper involves a mixed-methods approach to comprehensively explore concerns regarding the implications of AI technology in the legal profession. Beginning with a clear problem definition, the study delves into existing literature to identify gaps and relevant insights. The research design incorporates qualitative and quantitative analyses through surveys and interviews involving legal professionals of Pakistan. Through random sampling, 31 lawyers with experience ranging from 1 year up to more than 30 years, practising in different domains like civil, criminal, constitutional, family, tax, company, and intellectual property, are surveyed and interviewed from Lahore. They were randomly chosen for the survey so that diverse views could be collected. The survey form comprises 14 questions, inquiring about demographic information, experience, field/ fields of practice, and experience of using AI technology in the legal profession. Ethical considerations are prioritised during the collection of data. The findings and discussions aim to present a refined understanding of identified concerns, challenges, and opportunities in the context of AI-driven legal research and writing.

Literature Review

Definition

Manning (2020) stated that the term AI was formulated by Professor Jon McCarthy (known as the Father of AI) in 1955, and he defined it as “the science and engineering of making intelligent

machines” (Manning, 2020). Moreover, McCharty (2007) himself said that Intelligence is a problem-solving part of the ability to achieve goals in the world. Several kinds of intelligence occur in people, animals, and some machines to different extents (McCarthy, 2007). Additionally, he elaborated, “AI is the science and engineering of making intelligent machines, especially intelligent computer programmes. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to biologically observable methods” (McCarthy, 2007). Another leading researcher in human intelligence, Arthur R. Jensen, suggested “as a heuristic hypothesis” that intellectual mechanisms of almost all the humans are same but the variation in intelligence is related to “quantitative biochemical and physiological conditions” (Jensen., 1998, p. 20). He saw them as swiftness, short-term memory, and capacity to create precise and retrievable long-term memories (Jensen, 1998, p. 21). However, today there is an alternate situation in the case of AI.

History of AI

Anyoha (2017) explained the evolution of AI by saying that the early 1900s saw the introduction of AI robots to the world (Anyoha, 2017). The initial step was in the form of the “heartless” Tin Man from The Wizard of Oz, and its evolved shape was the humanoid robot “Maria” in Metropolis. Moving on, till the 1950s, a peer group of researchers, mathematicians, and logicians arose with the notion of artificial intelligence, and this notion was socially absorbed in their minds (Anyoha, 2017). Young British polymath Alan Turing investigated the mathematical potential of AI and articulated that “Humans use available information as well as reason to solve problems and make decisions, so why can’t machines do the same thing”? In his 1950s study, *Computing Machinery and Intelligence*, he examined the construction of intelligent machines and methods for evaluating their intelligence within this logical framework (Anyoha, 2017). A group of logic theorists led by Allen Newell, Cliff Shaw, and Herbert Simon began working on it in the middle of the 1950s. They started a programme that was supported by the Research and Development (RAND) Corporation and was intended to replicate human problem-solving abilities (Anyoha, 2017). Then in 1956, John McCarthy and Marvin Minsky hosted a project named the ‘Dartmouth Summer Research Project on

Artificial Intelligence' (DSRPAI). This programme was considered to be a crucial step toward technological development in the field of AI and it also catalyzed the research process in this field. As a result, we have advanced forms of AI and its integration in almost all professional fields (Anyoha, 2017).

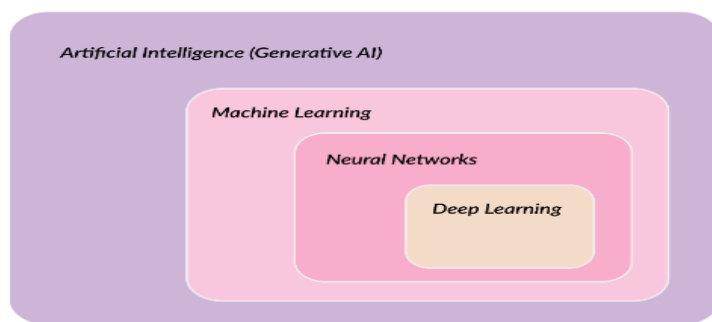
Integration of AI in the Legal field

Using sensors to interact with the environment, process information, make decisions, and act autonomously is artificial intelligence. It is defined by the OECD's AI Experts as “a system based on algorithms and self-learning guided by machine learning and deep learning” (OECD, 2019). Meanwhile, Manning (2020) defines machine learning as “the area of AI that focuses on how computer agents can use experience or data to enhance their perception, understanding, reasoning, or behaviour” (Manning, 2020). Furthermore, he argued about deep learning as the application of huge multi-layer (artificial) neural nets, which function similarly to the systematically ordered neurons in human minds and operate with uninterrupted numerical projections. Additionally, Eisenstein (2019) states that Natural language processing is the technique for rendering the language used by humans intelligible for computing (Eisenstein, 2019). ML, DL, and NLP are comprised of AI algorithms, and their purpose is to make a master framework that expects or classifies the data based on input information, so that AI uses computers and technology to mimic human intellect's capacity for solving issues and making choices (IBM, 2024).

ML, DL, NLP, and AI algorithms are useful in legal research and writing, especially in the form of Generative AI technologies (Figure 1). McKinsey and Company (2023) write that GAI tools (such as ChatGPT) portray calculations and can be used to generate new substance, including sound, code, pictures, content, recreations, and recordings (McKinsey and Company, 2023). Research and content creation are part and parcel of the legal profession, and different technologies can be used to perform this crucial task. Kabir and Alam (2023) say that traditionally, legal research used to be done manually by human lawyers, which took time and was prone to error. However, with the advent of machine learning and natural language processing, AI has the potential to enhance legal research by automating some of the processes and improving the accuracy

and efficiency of results (Md. Shahin Kabir & Mohammad Nazmul Alam, 2023, p. 1088). Davis (2020) says that generally AI can be utilised in the domain of the legal profession in six ways: record revelation, mastery automation, legal research, document administration, contracts drafting and reviewing, case records analytics, and contract and case report creation, and predictive analytics (Davis, 2020). However, this writing delves into the realm of legal research and writing, focusing on the utilisation of AI tools for generating legal documents.

Legal Research



Legal Writing

Fig. 1. Legal research and writing

AI in Legal Research

The definition of "research" according to Shuttleworth and Wilson (2008) is "any collection of statistics, findings, and pieces of evidence for the development of knowledge" (Shuttleworth & Lyndsay T Wilson, 2008). Similarly, according to the Encyclopedia of Britannica (2016), "A diligent study or analysis is called research; in particular, it can be a study or test aimed to locate and analyze facts, modify accepted beliefs or rules in light of new knowledge, or employ these newly discovered or amended hypotheses or laws in real-world situations" (Britannica, 2016). Hence, research is the methodical, thorough, meticulous, and systematic (scientific) exploration (search) of a specific area of study (knowledge) to discover (figure) the reality and add something new to the body of information that is already in existence (Biresaw & Saste, 2022). On the other hand, Barkan, Barbar, and Whisner (2015) describe

legal research as the method for discovering and collecting data required to assist in making judicial decisions, while research in law, in its most comprehensive sense, encompasses each step of a process that begins with a review of the facts surrounding the issue and ends with the implementation and sharing of the investigation's results (Steven M. Barkan, Barbara Bintliff, & Mary Whisner, 2015). Accordingly, Jain (1972) says that legal research can be generically described as the technique by which professionals find, access, devour, and evaluate the legal material to explain it to clients, courts, or to assist in making legal decisions (Jain, 1972). Generally, legal research is very important as it offers a basis underlying essentially all legal work in the curriculum as well as in the legal profession and practice. Additionally, the resolution of a client's legal issue will be directly impacted by competent legal research, and if a lawyer is unable to find the most persuasive legal evidence to back up his contention, he can't build the most compelling argument for his case (University of Illinois Law Library, 2024). Campbell (2020) says that technology and growing scientific accuracy are transforming the way lawyers work, regardless of the way they look. This shift started before COVID-19, but it has grown since more attorneys have begun working via the Internet, cases are being decided more often through pleadings rather than arguments in person, and technology is generally being adopted by legal professionals more quickly (Campbell, 2020).

Traditional methods and the evolution of AI-powered tools for legal research

Frederick (1992) says that legal research is typically carried out by those with the required extent of legal knowledge and expertise. It is a broad field with intricate and complicated demands for understanding, ability, and competence. Lawmakers, justices, attorneys, and scholars (professors and students) are among them (Hicks, 1923). Biresaw & Saste (2022) say that these entities may conduct legal research for multiple reasons. Lawmakers, for instance, do not just pass laws because they have the authority to do so. Before lawmaking, the legislature must conduct the required studies on the specific subjects covered by the legislation, utilising the appropriate research previously conducted (Wahlke & Eulau, 1959). The ongoing relevant investigation, rational inference, and

legal analysis give law its vitality for just adjudication. For practising attorneys, legal research is a professional exercise; an essential component of their work (Vick, 2004), and legal academicians too have a predominant association with legal research (Biresaw & Saste, 2022). In the pre-AI era, legal researchers spent hours and days in libraries, consulting several books to find to desired material. Dharani (2023) says that conventional research techniques usually involve going to a law library, looking through legal publications and books, and doing manual searches for pertinent cases. It was a time-consuming and resource-limited approach (Dharani, 2023). Benjamin, Anthony, & Albert (2017) say that formerly, lawyers were deemed to be specialised and competent professionals who discovered legal problems, collected the relevant information, and assessed the likely result of a court's ruling to settle a dispute by applying assessment, using their wisdom and expertise to evaluate the merits of a case and figure out the best way to deal with it (Benjamin Alarie, Anthony Niblett, & Albert Yoon, 2017). It was often believed that only highly experienced practitioners could handle these responsibilities. However, McGinnis & Pearce (2014) argue that recent developments in AI have disproved this popular belief and shown that AI is also having an impact on the legal profession (John O. McGinnis & Russell G. Pearce, 2014). As a result, AI has drastically changed the methods of legal research and practice in general, and it will continue to do so. (John O. McGinnis & Russell G. Pearce, 2014). According to Campbell (2020), some specific examples of the English legal system illustrate the idea and provide insight into how technology has facilitated effective research in the legal profession (Campbell, 2020).

Intellectual Property: Lawyers analysing trademarks in the area of proprietary rights now often depend on multiple types of software programmes for their job, particularly on programmes that evaluate the language of a patent request to previously issued and rejected claims (Campbell, 2020).

Westlaw and Lexis have largely relied on "natural language" searches that are based on algorithmic analysis instead of permitting users to construct their search terms. These searches operate similarly to Google searches, but in addition to looking at case language, the algorithms rank results based on factors such as the abundance of citations, what other professionals have chosen to

click on when searching for similar queries, and more (Campbell, 2020).

Furthermore, there are many new resources available to investigate legal issues, including Westlaw Edge, Bloomberg Law, Casemaker, Casetext, Fastcase, Findlaw, Justia, LexisNexis, MyCase Inc., Ross Intelligence, and many more. These are based on algorithms and natural language recognition, and many of them use AI to quickly identify similarities in data, operational histories, and sources. They also gather context from uploaded files to determine linkages to important problems. (Campbell, 2020)

In addition to the AI tools mentioned above, the following are some examples of programmes and software solutions that significantly advance the subject of AI-assisted legal research;

Casetext: one of the most useful resources for legal research. It uses AI technology to help attorneys discover the laws, judgments, and government guidelines they require to defend their clients. Additionally, **CoCounsel**, an option for legal assistants, is available in this programme (Law Rank, 2024).

Blue J: An AI-powered technology that helps practitioners forecast the results of cases and assess complicated legal challenges by streamlining legal investigation and evaluation (Clio, 2024).

CARA (Case Analysis Research Assistant) is a case text's brief-analysis software, after putting any legal document into the programme, uses deep lexical insights to draw precedent from a variety of sources and generate results that are directly connected to the concerns raised by the document. Crucially, this encompasses situations that have been disregarded or omitted from the document. This is especially useful for rapidly identifying cases that opposing counsel missed or purposefully excluded when writing a response to their briefs (Pablo Arredondo & Chelsea Strauss, 2016).

HYPO is discovered to function similarly to judges and can help with many facets of legal research (Sunstein, Of Artificial Intelligence and Legal Reasoning, 2001)

ROSS Intelligence supports lawyers in their legal research endeavours by allowing attorneys to put forward their queries and get relevant details such as proposed readings, relevant judgments, and additional sources (Kabir & Mohammad Nazmul Alam, 2023).

Above mentioned AI tools are helpful for lawyers in the US for legal research, as they all have access to US state laws and legal materials. However, some AI tools for contract management and

review have international services and are designed to handle contracts from various jurisdictions. These are;

LEVERTON: A unit of the German Institute for Artificial Intelligence that focuses on organising documents, extracting of information, and drafting contracts for real estate operations using AI. Its cloud-based application can quickly scan contracts in 20 languages and extract important data, including rent that must be paid, servicing expenses, and due dates. By organising this data into a convenient spreadsheet format. LEVERTON significantly simplifies the due diligence process (Kabir & Mohammad Nazmul Alam, 2023).

eBrevia: The software can be tailored by solicitors to collect particular data, which is subsequently transformed into text that can be searched. Extensive reports summarising the retrieved documents are available for download and sharing in several formats. eBrevia claims that it can analyse more than 50 papers in less than a minute with 10% higher accuracy than manual inspections (Kabir & Mohammad Nazmul Alam, 2023).

These AI tools are reshaping the landscape of legal research in a modern and advanced manner, significantly accelerating tasks, saving considerable time, minimising human error, enhancing overall efficiency, and reducing the need for extensive manual work. In contrast to traditional methods, these tools prove highly effective and more efficient in conducting research.

GAI in Legal Writing

According to Koteen, “the examination of fact patterns and articulation of arguments in legal letters and pleadings is generally referred to as legal writing” (Koteen, 2022). The Legal Information Institute (LII) states that “legal writing is any sort of composition in the field of law that aims to present legal knowledge to other people that is generally precise, simple, and most importantly of all, reliable” (Legal Information Institute, 2023). Briefs, memos, drafting wills, client letters, and even opinions from the courts are some of the most prevalent kinds of legal writing (Legal Information Institute, 2023). Contract drafting and its reviewing also fall within the circumference of legal writing. Legal writing is very crucial for academic scholars and legal professionals as well, here, we look from the perspective of the legal profession. At the recent Cooley commencement ceremony, Kimble (2018) spoke on the subject,

saying, "Lawyers write and speak for a living." They work with words, arguably the most advanced tool we have created (Kimble, 2018). He highlighted the importance of legal writing by making it part and parcel of lawyers' professional lives. Furthermore, for attorneys, legal assistants, and other law experts, legal writing is essential because a significant part of their work entails communicating their legal statements in writing (Indeed Editorial Team, 2023). Proficient writers can assist lawyers in presenting these arguments in a way that will help them get the results they require.

Before the evolution of AI and GAI tools, legal writing was carried out by professionals and their assistants manually. However, with the advent of GAI tools, AI technology is used to create legal documents, which the same tools may scrutinise and analyse in a couple of seconds. Some GAI applications are mentioned here to explore the influence of AI technology on efficient legal writing. Campbell (2020) says even in the 2000s, depositions (A witness's sworn testimony taken outside of court is called a deposition; it serves to collect material for discovery and, in certain cases, may be utilised in court, (Wex Definitions Team, 2022)) were typically marked and underlined with highlighters, and more sophisticated attorneys used Microsoft Word to shorten depositions (Campbell, 2020). While **Transcript Pad** is used by a new generation of lawyers for this purpose (McMichael, 2019). Law Rank's (2023) publication discusses various AI tools designed for legal professionals to enhance their legal writing and drafting processes (Law Rank, 2024). Those include;

ChatGPT is among the most renowned generative AI technologies available today. Several industries, including the legal sector, have used ChatGPT to create content, articles, and other types of papers. A preliminary draft of legal records, including memoranda, briefings, declarations, and more, can be produced with ChatGPT. To obtain the desired document, one will need to become proficient in prompt engineering (Law Rank, 2024).

CoCounsel is a huge language framework, designed exclusively for the legal business. It is built on a similar technology to ChatGPT and operates similarly to it in many ways (Law Rank, 2024).

Lex Machina; crawling legal databases including the USPTO, ITC/EDIS, PACER, and state court data, driven by AI

technology, a legal statistics platform developed for US lawyers that collects data on outcomes, case results, and penalties (Law Rank, 2024). This database allows users to perform queries to find patterns such as how particular judges have handled cases similar to theirs in the past, the kind of litigation expertise possessed by opponent counsel, and the kinds of compromises that have taken place in instances similar to users. (Law Rank, 2024).

Relativity: It can be the perfect answer for those who detest the discovery process. This application will assist them in managing the document evaluation process, automated collection of data, optimising suppression, and—best of all—learning from every case it receives, so the more users it has, the more proficient it becomes (Law Rank, 2024).

The **Latch**, an assistant having AI technology, is incorporated into Microsoft Word and is designed to make contract work and the negotiating process easier to manage. It is a generative assistant that can help users simplify language, generate specific assessments for contracts, and summarise agreements (Law Rank, 2024).

According to Biresaw, Saste & Umesh (2022), the following AI systems can forecast court case outcomes by referencing prior rulings (Biresaw & Saste, 2022). **LawGeex** can save up to 80% of the time by reading and summarising contracts with a precision rate of 94% overall (Michael, et al, 2018), **Thought River** can examine contracts and display the data in a web-based portal (Michael, et al, 2018), **Beagle** is intended for non-expert users who must independently analyse and deal with contracts (Beagle, 2016), **Legal Robot** before users signing on, may review, evaluate, and identify issues in contracts (Legal Robust, 2016), **Harvey** can help lawyers with duties like contract evaluation and conformity to regulations by using ML and NPL. It can also filter through enormous volumes of data and provide feedback and suggestions based on its review (Law Rank, 2024). This is based on OpenAI and GPT, and it makes use of general legal information to function. It can, however, also incorporate a legal firm's unique work product into its ML technology (Law Rank, 2024). In-house legal technology tools were created by JPMorgan, such as **COIN (Contract Intelligence)**, an AI system that is capable of retrieving 150 features from 12,000 contracts and business financing deeds. The bank's loan officers and solicitors save the equivalent of 36,000 hours of manual labour a

year due to this technology (Kabir & Mohammad Nazmul Alam, 2023).

Auto-GPT: “An experimental open-source attempt to make GPT-4 fully autonomous”. It is a new technology that was introduced in March 2023. It is one of the newest iterations of AI and responds to queries and "thinks through" complicated operations "autonomously" by pairing OpenAI's text-generating AI models (primarily GPT-3.5 and GPT-4) with a companion bot (Clio, 2024). The aforementioned tools are helpful in legal writing, and lawyers can use them for their professional work. The efficiency of these tools depends on the understanding and knowledge of users, along with their experience.

Legal documents generated by GAI tools and content created by these tools have some contrast with the manual handwork of humans. Although text produced by GAI is more reliable than content written by people by hand, it still lacks human perceptions and the ability to make choices, which can be problematic when legal papers need to be evaluated or have legal rules to be applied to particular circumstances (AIContentfy team, 2023). Also, legal writing generated by GAI tools introduces concerns such as restricted customisation, potential issues with data privacy and security, the risk of bias and discrimination, and ethical considerations that need careful attention (AIContentfy team, 2023).

Use of AI tools by Legal professionals in Pakistan in Legal Research and writing: Analysis

In Pakistan, generally, lawyers use manual ways for legal research and writing, and most of them are accustomed to traditional ways. Lawyers and legal professionals conduct legal research either by going to the library, consulting books, statutes, law journals, and reports, or doing it on a personal computer or laptop from different websites. Syeda Saima Shabbir (2012) says that the following are some useful websites in Pakistan that can be accessed by lawyers and legal professionals for legal research; <http://www.supremecourt.gov.pk> (an official website of the Supreme Court of Pakistan which offers comprehensive insights into the history, composition, administration, and significant decisions of the apex Court allowing users to access and download verdicts on cases of public importance) (Shabbir, 2012), <https://www.pakistanlawsite.com> (houses Statutes, Rules and Case

Laws of Pakistan, also contains essays, articles, and also the case laws of Pre-Partition Courts. This website houses all the legal journals like Supreme Court Monthly Review (SCMR), Pakistan Legal Decision (PLD), Pakistan Criminal Law Journal (PCrLJ), Yearly Law Review (YLR), and Civil Law Cases (CLC), can be accessed only after registration) (Shabbir, 2012), <http://www.pakistanlaw.net> (another useful website which provides information about the Laws of Pakistan, Lawyers, Case Laws and Law Articles.) (Shabbir, 2012), <http://www.ljcp.gov.pk> (the Law and Justice Commission of Pakistan's official webpage housing information about the National Judicial Policy Making Committee, National Judicial Conferences, National Judicial Policies, Law Reforms, Public Awareness Programmes, Federal and Provincial Statutes) (Shabbir, 2012, p. 2), <http://jamilandjamil.com> (a website of a private legal firm. displays various laws under different heads like Government and National Security, World Trade Organisation Laws, Shipping Laws etc.) (Shabbir, 2012), <http://www.punjablaws.gov.pk> (Punjab government's official website, featuring every law passed Punjab government between 1860 and the present) (Shabbir, 2012), <http://www.secp.gov.pk> Securities and Exchange Commission of Pakistan-SECP's official website, providing information about the Laws and Policies about the Commission) (Shabbir, 2012, p. 2), <http://www.labourunity.org> (this site displays valuable information about statistical data of Brick Kilns. Textile Mills, Banks, Sugar Mills, yellow Cabs, Jute, WAPDA and Municipal Workers Unions, Agriculture Department, Bone Crushing Industries, Furniture Industries, News Papers, Electronic Media as well as general Labor Unions and the Pakistan Bonded and Child Labor Liberation Front, News Papers, Electronic Media as well as general Labor Unions and the Pakistan Bonded and Child Labour Liberation Front) (Shabbir, 2012). Legal professionals adopt traditional writing methods through their associates or by some professional writers who have their own shops offering writing services.

To determine the use of AI tools for legal research and writing in Pakistan, the author conducted a survey (via questionnaires, and interviews) in Lahore among 31 lawyers (Advocates-High Court, Advocates-Supreme Court, managing Law firms, members of Punjab Bar Council, etc.) to gather insights on the usage of AI tools in legal research and writing. Among the

participants, various perspectives emerged regarding the usage, efficiency, and effectiveness of the utilisation of AI tools in the legal domain.

Only two lawyers (both were Supreme Court advocates having experience of more than 10 years in civil, family, constitutional, and corporate fields) responded that they are using AI tools, but their experiences differed. Respondent 1 expressed scepticism about the efficiency of AI tools, suggesting that they often produce content resembling textbooks rather than practical legal materials. Conversely, another lawyer (respondent 2) found AI tools helpful in their work. He showed satisfaction in using AI tools. When both were asked about the idea of designing a GAI tool having complete access to Pakistani legal depository (including statutes, case laws, articles, reports, etc.) or synchronising any GAI tools like (ChatGPT) with Pakistani sites (mentioned above) having legal materials because till now any GAI tool has no access to legal database of Pakistan, again both replied contrarily. Respondent 1 said that it is not too effective to synchronise any GAI tool with sites having Pakistani legal material because it is useless; first to teach the machine and then get data from it, the results may be biased as those depend upon the information given. He also pointed towards the Human factor of judgment and natural intelligence, which AI tools lack. However, respondent 2 said that it will be a footstep in revolutionising the practice of legal research and writing in Pakistan with the help of AI technology.

Eight lawyers among respondents indicated that they refrain from using AI tools in their legal research and writing practices. Their rationale primarily revolved around a preference for manual methods, citing a lack of necessity for AI tools in their workflow. Another respondent, a high court advocate, highlighted that in our legal community, there is a general lack of education and awareness regarding the necessity to cross-check or verify legal writing and research conducted by lawyers. He noted that even trial judges, due to heavy workloads, often overlook detailed pleadings and focus primarily on the names of parties and the concluding prayer section. Consequently, many lawyers, including himself, do not feel compelled to invest extensive effort into the research and writing process, opting for traditional methods with which they are familiar and comfortable. Additionally, he mentioned a lack of awareness about AI tools for legal research and writing, indicating that he and

many others in the legal profession have not explored such technologies. Another lawyer expressed reluctance to adopt AI tools due to concerns about their suitability for personal learning, noting that the content generated may not align with their preferred learning style. His words were “Human evolution is dependent upon the development of their consciousness and intelligence.” Artificial intelligence, to me, is a hurdle for this development. Through traditional methods of research and writing, we not only get the desired result but also the way to those results. AI helps only to reach desired results, like reaching a destination while sleeping throughout the journey”. He emphasised that when he conducts thorough manual research, he explores many other legal points that ultimately result in polishing his professional skills and advancing the learning aspects that he believes are sometimes overlooked while using AI tools.

Moreover, five lawyers among those 31 respondents cited reliability issues as a deterrent to using AI tools in their legal practices. They expressed concerns about the accuracy and dependability of AI-generated content. A criminal law practitioner (experience ranging from 1-5 years) said, “AI tools don’t seem reliable to me in most cases, as these generate bookish content with little practical perception”. Moreover, it was stated by a respondent, “We are not using AI tools as we believe in writing by ourselves, and we try to get guidance from books and authorities and prefer reading”. Interestingly, 16 out of 31 respondents highlighted a lack of awareness as the primary reason for not utilising AI tools in their legal work. However, they expressed openness to adopting these tools if provided with adequate knowledge and understanding of their benefits and functionalities. These survey results indicate that only 6 percent of respondents utilise AI tools for legal research and GAI tools for legal writing, and 94 percent refrain from using this technology due to various reasons. The most common reason is a lack of awareness, and that’s why 94 percent of respondents answered only 4 questions, comprising demographic and professional details; they never proceeded further as they did not use AI technology, as further questions were regarding the experience of using AI tools. 16 percent of them perceive AI tools as unreliable for legal practice, while 25 percent believe there is no necessity to employ AI technology in legal research and writing for the legal profession in Pakistan. Overall, 47 percent possess knowledge and

awareness about AI and GAI tools, whereas 53 percent lack any knowledge about AI technology and its application in the field of legal research and writing. (Figure 2) However, they express a willingness to adopt this technology if provided with sufficient knowledge and understanding of its benefits and functionalities. This survey illuminated the extent of awareness and knowledge among Pakistani lawyers regarding the utilisation of advanced AI technology in the domain of legal research and writing, and a spectrum of attitudes towards AI tools among legal professionals, ranging from scepticism and reluctance to enthusiasm and willingness to adopt. Addressing concerns regarding reliability and increasing awareness about the capabilities of AI tools could potentially encourage more widespread adoption among lawyers.

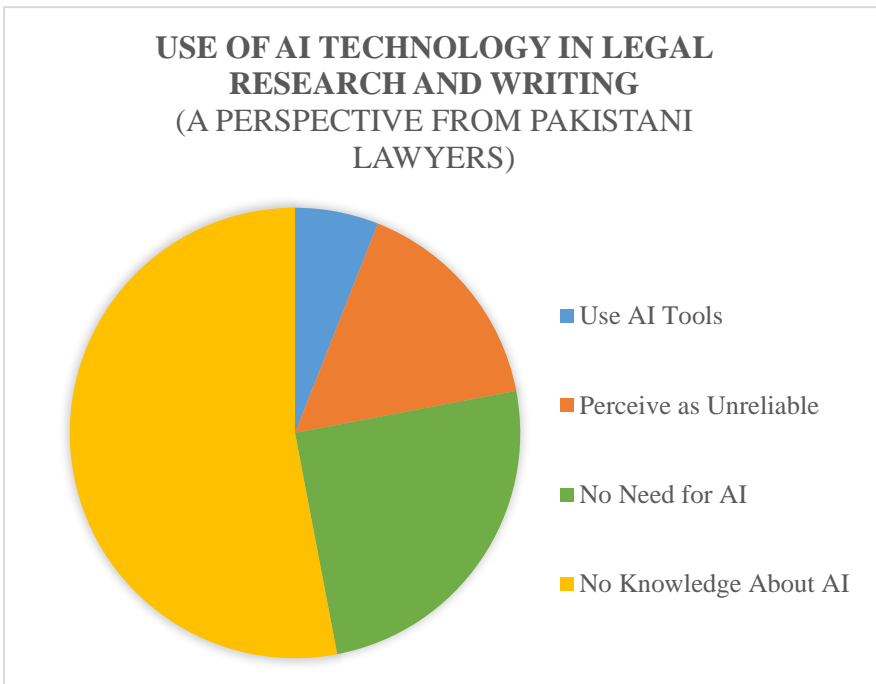


Fig. 2. Pakistani lawyers' perspective on the use of AI in legal research and writing

Implications and Challenges

Surden (2019) says, taking a step back allows us to more realistically understand the possibilities and constraints of AI

advancement (Surden, 2019). He goes on to argue that if we fully comprehend this modern technology, we will be able to grasp why AI is typically useful in particular tasks but not for others. It is significant because the same restrictions apply in the legal domain, and our primary objective is not only to identify potential legal implications of AI but also to identify potential legal implications that are unlikely to arise (Surden, 2019). He explained as follows: since AI can automate complex jobs like learning how to drive, play chess, and play video games, it can also be used to automate any other kind of complicated task. But there are different attributes for different problems that can be or cannot be managed by AI (Surden, 2019). Nachshon & Giulia (2019) concluded that although we admire the effective usage of AI in advanced legal research, this fascinating technology may be a trap for a technical man (Nachshon (Sean) Goltz & Giulia Dondoli, 2019). Thus, it is critical to recognise these differences to assess the influence of AI in law today and shortly (Surden, 2019). Goltz & Giulia Dondoli, 2019). Furthermore, this innovation could be a device for conducting research, but not an investigative strategy in itself. (id) So in this regard, there is a need for intensive care when inferring this technology for long-term achievements (Gibney, 2017). According to Vincent (2019), tasks involving basic trends, regulations, absolutely correct responses, and semi-formal or formal frameworks seem to benefit most from the use of current AI technologies (Vincent, 28). Michael, James & and Mehdi (2018) argue in this regard that in many situations when AI is needed for rational decision-making, intellectual comprehension, persuasive or discretionary conviction, or compliance with social standards, it is generally ineffective (Michael Chui, James Manyika, & Mehdi Miremadi, 2018). Furthermore, Surden (2019) elaborates that a problem domain that is susceptible to AI pertains to the ability to extract and encode relevant data exclusively (Surden, 2019). However, in the case of rules-based information frameworks, the data that forms the AI framework's foundation is typically accessible because it originates from individuals who are. For instance, if an AI tool is meant to help physicians diagnose illnesses and a question regarding the symptoms and the rationale for the diagnosis is posed, the AI tool's understanding of how to formulate the inquiry will come from working with subject matter experts in the field (Surden, 2019). Most likely, if one is eager to create an income-tax expert

framework, they would need to collaborate with experts in related industries, such as accountants and lawyers, to learn about the pertinent laws and regulations (Surden, 2019). Comparably, in many technical problem domains, it is exceedingly challenging to obtain pertinent knowledge, and in most cases, certain concepts or abstractions cannot be meaningfully expressed in computer language (Surden, 2019). Therefore, there will be less chance of automation for these issues using an AI strategy based on knowledge representation.

Biresaw & Saste (2022) state that it is difficult for AI to read, analyse, comprehend, and assess legal texts (Hawkins, 2018). Tools cannot answer legal questions effectively, as Question-and-Answer systems built on AI technology do not understand legal reasoning (Biresaw & Saste, 2022). Moreover, Ashley (2017) says that AI tools can't comprehend the same question in different circumstances, as AI tools do not work consciously like humans (Ashley, 2017). In addition, there are several issues and challenges, such as a lack of field experts, engineers with expertise in artificial intelligence, a lack of recognised design techniques for developing expert systems in the legal field., a wide range of considerations regarding the implications of AI tools for the legal profession, and insufficient effectiveness of quality-control systems in legal AI tools (Richard, 1990). Apart from everything else, a significant obstacle to the development of lawful AI is the increased possibility of cybersecurity breaches or attacks in AI systems (Richard, 1990). Overall, AI has a lot of negative effects on the legal profession, including unemployment, worries about data privacy, moral and ethical requirements, unauthorised use of data, and the unintended development of a super-intelligent AI—also known as the "Singularity problem" (WIPO, 2019). Therefore, there is a lot of space to cover in the field of AI, and it will take time for this technology to grow more effectively so that future problems may be mitigated.

Future Prospects and Recommendations

According to Kabir and Alam (2023), there is still great room for further progress and improvement in the area of artificial intelligence in the legal profession. If this technology evolves, its impact on the legal profession will also increase. Along with that, it is necessary to evaluate the moral and legal consequences of AI in

the legal profession and ensure that technology is used ethically and transparently (Kabir & Mohammad Nazmul Alam, 2023). Campbell (2020) says that it is possible to measure legal writing precisely when it is done, and the legal writing style can forecast results. (Campbell, 2020). For that, better tools are necessary to understand whether the outcomes correlate with the legal writing style or have a causal effect on them. To cope with this challenge, legal experts have to welcome this technology and walk through this field so that their expertise can be utilised to develop better AI tools for legal professionals.

The study recommends that researchers and technology experts have to delve deeper into this technology and its effective utilisation in the legal profession. Given the sensitive nature of professional conduct and client data, legal professionals and educators must embrace this technology to advance the legal practice. By aligning their focus towards AI, the legal profession can keep pace with the rapidly evolving world. Experts and policymakers should develop strategies to address concerns and facilitate the smooth integration of AI into legal practice. Awareness programmes and workshops are essential to familiarise Pakistani lawyers with AI tools and positively encourage their adoption. Furthermore, there are currently no specific AI tools tailored to the Pakistani legal depository for legal research within Pakistan's jurisdiction, nor are there GAI tools designed for document creation in the context of Pakistani laws, including legal pleadings and contracts governed by Pakistani jurisdiction. Nevertheless, PLR x AI (beta), an experimental feature integrated into <https://pakistanlegalresearch.com>, aims to harness the potential of AI in legal research and is currently in the development phase and is available for testing and demonstration purposes. ChatGPT provides some data about Pakistani case laws and legal material, but not in in-depth detail, because it does not have access to the depository of Pakistani legal material (not learned with data specifically of the legal domain in Pakistan. Hence if any AI tool like ChatGPT or Auto-GPT is synchronised with Pakistani websites including; <https://www.pakistanlawsite.com>, <https://www.pljlawsite.com>, other law sites, high courts and Supreme courts websites which have a depository of Pakistani legal material, case laws, reported judgments, it will be a revolutionary step towards a combination of AI technology and legal filed in Pakistan. Or a comprehensive tool

is developed that combines both AI capabilities for legal research and GAI functionality for legal writing, specifically tailored to the jurisdiction and nuances of Pakistani law. This will provide Pakistani legal experts with a platform to carry out effective and precise research to prepare legally sound documents, including pleadings, contracts, and opinions, with more efficiency. By integrating AI technologies, the research process can be streamlined, providing relevant insights and facilitating the drafting of precise and compliant legal documents within a limited time. This advancement will ultimately enhance productivity and accuracy in legal practice within the Pakistani context, revolutionising the domain of legal research and writing. Lastly, for this endeavour to be affordable for the majority of lawyers and for those who do not have a solid financial foundation, the government sector must either own it or support it.

Conclusion

The evolution of AI-powered tools has led to significant advancements in both legal research and writing practices. In legal research, traditional methods often involved manual searches through libraries and databases, which were time-consuming and labor-intensive. Meanwhile, with the evolution of AI technology and AI-powered tools, such as NLP algorithms and ML techniques, researchers can now access vast repositories of legal information quickly and efficiently. The case studies and examples provided in this research show the effectiveness of AI tools in legal research, highlighting their capacity to evaluate vast amounts of data, locate pertinent statutes and case law, and offer legal practitioners insightful information. Similarly, in legal writing, GAI tools have transformed the process of drafting legal documents, contracts, and briefs. AI-powered tools can assist in contract analysis, document generation, and even legal analysis, thereby enhancing the accuracy and efficiency of legal writing tasks. This research also presents the study conducted on Pakistani lawyers regarding the usage of AI tools in legal research and GAI tools in legal writing, illuminating the perspectives of Pakistani lawyers and their attitude towards the implication of advanced AI technology in the legal profession. Furthermore, case studies have demonstrated how AI can enhance the effectiveness and quality of legal writing, leading to greater

productivity and effectiveness in legal practice. While the positive impacts of AI on legal research and writing are evident, some challenges and limitations need to be addressed. Among the difficulties in integrating AI into the legal field are ethical issues, algorithmic biases, and dependability worries. Moreover, the legal and moral implications regarding the usage of AI-generated content in legal proceedings require careful consideration to ensure fairness and transparency. Looking ahead, there are promising prospects for further advancements and future trends in AI for legal research and writing. Legal professionals, educators, and policymakers must collaborate to effectively utilise AI tools and maximise their benefits while mitigating potential challenges. Recommendations include the introduction of AI tools specifically tailored to the Pakistani legal context, with full data repositories of Pakistani legal materials and websites. Such tools can significantly enhance the efficiency and accessibility of legal research and writing in Pakistan. In the end, the integration of AI in legal research and writing offers immense potential to transform the legal profession, improve efficiency, and enhance access to justice. The legal sector may effectively utilise AI to better fulfil societal requirements and promote the values of justice and fairness by adopting AI technologies and addressing related problems.

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