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Abstract

Artificial Intelligence (AI) is substituting human decision-making in every aspect of life where law stands with no exception. New technological trends offer expeditious and cost-effective AI tools yet confront challenges such as privacy invasion, bias, fairness, and hallucinations, necessitating regulatory oversight. Like other countries, the USA and Pakistan have initiated AI solutions in their legal domain. A strong regulatory oversight is indispensable for its legitimacy and efficiency. Based on their functions and ethical considerations, AI tools in the legal profession face competing opinions. With qualitative research methodology, the research aims to explore how AI is transforming and reshaping the legal regime, focused on the comparative analysis of the USA and Pakistan. The research paper critically examines the legal frameworks and impacts of AI solutions and how both countries navigate the complexities of AI-based decision-making.

Keywords: AI, Accountability, Bias, Ethical Considerations, National AI Policy, Regulatory Oversight, US AI Policy

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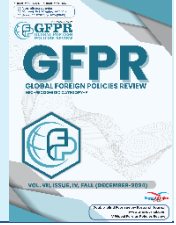
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Artificial Intelligence and Legal Decision-Making in the USA and Pakistan: A Critical Appreciation of Regulatory Frameworks

Abstract

Artificial Intelligence (AI) is substituting human decision-making in every aspect of life where law stands with no exception. New technological trends offer expeditious and cost-effective AI tools yet confront challenges such as privacy invasion, bias, fairness, and hallucinations, necessitating regulatory oversight. Like other countries, the USA and Pakistan have initiated AI solutions in their legal domain. A strong regulatory oversight is indispensable for its legitimacy and efficiency. Based on their functions and ethical considerations, AI tools in the legal profession face competing opinions. With qualitative research methodology, the research aims to explore how AI is transforming and reshaping the legal regime, focused on the comparative analysis of the USA and Pakistan. The research paper critically examines the legal frameworks and impacts of AI solutions and how both countries navigate the complexities of AI-based decision-making.

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Contents

- [Introduction](#)
- [Modern Trends of AI in Legal Landscape](#)
- [AI in Legal Decision-Making and its Regulatory Frameworks – A Comparative Analysis](#)
- [Effects of AI on Legal Adjudications](#)
- [Conclusion](#)
- [References](#)

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Introduction

The integration of AI in the legal province is a significant shift, and its proliferation in different legal spheres necessitates a critical analysis of its impacts and associated challenges. Undoubtedly, AI-powered solutions have the potential to revolutionize the traditional justice system and transform legal operations, but their ethical concerns and interlinked disruptions, like hallucinations, cannot be overlooked (Bridgesmith & Elmessiry, 2020). The instant development of AI motivated substantial changes, which are also evident in the legal domain and raise concerns regarding transparency and fairness.

AI is not a modern brainchild, rather it can be traced back to older texts. In 1842, Ada Lovelace exhibited the scope and potential of computer science and technology. She is also accredited with the first algorithm for a computer engine. Historically, AI can be traced back to Charles Babbage and Ada Lovelace who are believed to have predicted the advent of AI and put together machines that could perform intelligent tasks. Technological advancement led to machine learning – a capability to learn without explicit programming – resulting in the independent development of AI, which is the ability to learn from datasets in a manner unforeseen by its designer (Rehan & Kalhor, 2022). In 1943, the



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first mathematical model of a neural network was contributed which is now recognized as AI (McCulloch & Pitts, 1943).

Even though the term AI was coined in 1956 and has been associated with a series of concepts, there is no consensus on a comprehensive definition of AI (Calo, 2017; de Almeida et al., 2021). However, it can be defined as the capability of a non-natural entity to make choices by an evaluative process (Turner, 2018). The capacity to make choices gives a certain degree of autonomy, which is not absolute. To comprehend differently, AI can make autonomous choices despite human input at any stage. With divergent opinions, AI is becoming more accepted in legal proceedings: some believe that AI is a tool to increase productivity and accuracy whereas others believe that it could jeopardize the right to a fair trial and may lead to miscarriage of justice. It is critical to understand whether AI-driven decision-making is capable of just and fair decisions, considering its reliance on the embedded datasets and patterns where the potential case outcomes cannot be fair enough if the datasets provided are biased (Surden, 2019).

With the emergence of AI and technological advancements, the prospects of efficiency in the judicial system are multiplying. AI-powered solutions offer tools to facilitate and advance the cause of justice such as predictive analytics and document automation, which can help reduce case backlogs, assist in the decision-making process, or even replace judges in certain cases (Gentile, 2022). Nevertheless, the ethical challenges of bias, privacy, and fairness are of great concern. Since 1980, the legitimacy of AI has had impetus, and scholars ascribed to the legitimacy concerns, its potential impacts on human subjective judgment, and data privacy (Leslie, 2019). The debate on the legitimacy of AI is an intricate and evolving phenomenon where its credibility is subject to ethical standards and concerns (Qureshi et al., 2024).

AI solutions can predict unforeseen events, trends, policies, and decisions based on the provided patterns and datasets. AI can be referred to as a human-like machine capable of performing intelligence-based activities. It characterizes humans' cognitive capacities and develops human-like behavior. AI research focuses on the brain and mimics its functions, which could be utilized as an alternative to human actions and could adapt itself to the changing environment (Martin-Bariteau & Scassa, 2021).

The research has been divided into the following segments for its operational framework: the first introduces and conceptualizes AI in legal operations. The second examines contemporary trends in Legal AI, which provides architecture and mechanisms for AI legal. The third focuses on the development of AI in legal operations and their regulatory frameworks. It provides a comparative analysis of the existing legal regimes and

identifies their shortcomings. The fourth focuses on the implications of AI. It sheds light on its advantages and potential drawbacks, coupled with the consequences of their ethical considerations. The last segment concludes and provides an insight into the future application of AI in law.

AI Technologies in the Legal Field – An Overview

AI integrates technologies that stimulate human cognitive capabilities to perform various tasks, including analytics, problem-solving, and language comprehension. Like any other scientific development, AI is transforming the legal system. The initial phases of AI comprised the formation of legal landscapes and simple automation. In this phase, the expert system played a significant role with the underlying objective of contributing algorithmic structure, which could inspire the cognitive process to produce results. The first AI systems were imperfect but demonstrated potential in automating legal duties leading to further developments. Subsequently, data analytics and Machine Learning Techniques (MLT) became focal. The MLT has potentially improved intelligence, adaptability, and data-driven decision-making without coding.

With the emergence of pattern recognition skills, a significant milestone was reached in MLT. The NLP trains AI to interact with human language, which enables legal professionals to have more complex conversations with them. The development of Artificial Neural Networks (ANNs), complex data-mining, and deep learning layouts had enduring impacts on the legal industry, particularly the contract analysis and algorithmic evaluation to predict case outcomes (Shahid et al., 2023). In the legal sector, data analytics is an emerging field, and it refers to the use of legal methods and tools to focus on predicting potential trends, events, and behaviors (Flanagan & Dewey, 2018). Through data analytics, legal professionals utilize more effective tools for sifting through extensive databases containing precedents and legislation. Based on its functions, AI can be broadly categorized into limited AI and general AI: the former is assigned to perform specific tasks, and in the legal context, most AI applications fall under this category. The latter exhibits human-like intelligence in various spheres and is more susceptible to hallucinations in legal operations.

The following are commonly used AI applications integrated with law: Predictive Analytics, which helps utilize algorithms for predicting case results. It uses data to predict potential events or trends. It examines historical data and patterns to forecast future scenarios. Classification, clustering, and time series models are mostly used to identify patterns that might project future outcomes, which can help drive strategic decisions (Cote, 2021). Based on their reliance on historical data,

predictive analytics could produce biased results, which is a great ethical concern. NLP plays a significant role in legal operations, which enables computers to comprehend and communicate with human language leading to generative AI (Holdsworth, 2024). It aids legal insight with the potential to revolutionize the legal profession. It offers cost-effective services, minimizing human errors, and automating legal drafting. Nonetheless, its ethical apprehensions cannot be disregarded. Inherent bias, for instance, is one of the ethical concerns, based on the voluminous datasets from various resources, which might contain bias and discriminatory language for or against a community, caste, or gender resulting in unfair outcomes. Consequently, the decision-making process will be compromised, leading to a miscarriage of justice.

To mitigate the apprehension of prejudice, the developers should invest in bias detection strategies and thoroughly neutralize the historical datasets to defuse all biases. In addition to biased datasets and patterns, complex and varying interpretations of legal language are significant concerns for which domain-specific knowledge is a must. Likewise, document automation is a cost-effective AI solution that can help craft and edit complex legal documents. A significant tool that deals with the emotional tone of a language is sentiment analysis, which is used to extract subjective information from a language (Eliot, 2020). It is useful in evaluating public sentiment and may help navigate public opinion about something (Mäntylä et al., 2018).

Modern Trends of AI in Legal Landscape

Recent technological developments demand the integration of specific AI tools into legal regimes. The developers focus on developing sophisticated AI tools to enhance the efficiency and quality of the administration of justice. Ross Intelligence, for example, offers EVA, a legal research tool, to assist users in answering their legal queries, making case research and citations easier. In contrast to general AI tools such as ChatGPT, the most reliable legal AI solutions are Lexis+ AI by LexisNexis, Westlaw, and Practical Law by Thomson Reuters (Magesh et al., 2024). These applications, however, still face ethical challenges such as legal hallucinations – when AI tools produce plausible but fictitious outcomes (Dahl et al., 2024).

Legal arguments encompass a structure that consists of propositions and conclusions intended to persuade a decision-maker. Hence, comprehension of arguments' logical construct is fundamental in assessing their legitimacy and rationality. Based on sets of rules or datasets, AI algorithms can learn these structures and evaluate arguments, followed by the required results. The following are the four tasks undertaken by the argumentations: task identification, to identify the conclusion of an argument in a text and determine its

feasibility in a known form of argument also known as argumentation scheme. The second is task analysis which finds implicit conclusions in an argument to be made explicit for properly evaluating the argument. The third is task evaluation, which determines whether an argument is strong or weak based on the generally applicable criteria. The fourth is task invention, which constructs new arguments that may be used for a specific conclusion (Dahl et al., 2024).

For algorithmic evaluation of legal arguments, AI systems employ various mechanisms: Argumentation Framework is a mechanism whereby AI deals with contentious information and draws conclusions from it using formalized arguments. It utilizes formal logic systems to characterize and assess arguments systematically. The Argumentation Framework in AI is further categorized into Abstract Argumentation Framework, a set of abstract arguments in the form of data or proposition where conflicts between arguments are represented by a binary relation based on the set of arguments. Logic-Based Argumentation Framework is based on a pair of arguments where the first part comprises a set of arguments that could prove the formula for the second part. Value-based Argumentation Framework focuses on exchanging arguments and the stronger arguments prevail over the pretext of certain values assigned to it. Assumption-based Argumentation Framework is a set of rules and attacks of the arguments based on assumptions and contraries.

Another mechanism for algorithmic evaluation of legal AI is Textual Analytics or Text Mining whereby written, spoken, or visual messages are critically examined to produce a deeper understanding of the message. It refers to the discovery of knowledge from text archives. In the legal context, legal analytics derive significantly meaningful insight from legal data. The most significant text mining is the NLP technique, employed to evaluate the language and structure of legal documents and identify the main arguments and counterarguments. This method is used in learning, understanding, recognizing, and producing human language content. It is used to provide valuable support in legal work (Ashley, 2017). Another mechanism is Machine Learning Models which learn from legal datasets to assess the intensity of arguments based on previous results and followed by a decision. These techniques help legal professionals prepare litigations, allowing expeditious and accurate research and reducing the time and cost of legal work.

AI in Legal Decision-Making and its Regulatory Frameworks – A Comparative Analysis

In 1963 while analyzing the conceivable IT use in legal provinces, Lawlor's prescient work surprised the world that computers would evaluate and project legal decisions (Lawlor, 1963). In this regard, a systematic

study was conducted by the European Court of Human Rights. The research exhibited that their model could foresee the court's decision with 79% accuracy. The empirical shows that formal facts are the most significant predictive factors (Aletras et al., 2016). The following segment explains the evolution of legal decision-making in the USA and Pakistan:

In the employment of AI technology, the US being a global leader has been increasingly using AI in different legal fields such as predictive analytics, document review, legal drafting, and legal research. The employment of AI tools is subject to controversies because they can perpetuate biased outcomes based on the data they are trained on, which could be detrimental to the criminal justice system focusing on sentencing and bail matters. For instance, the US courts use the Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) algorithm. COMPAS is a risk assessment tool for assessing the risk of recidivism on a scale of one to 10 – to examine the apprehension of reoffending, which becomes a focal point for discussions regarding AI in legal decision-making. The algorithm provides an objective appraisal of the accused prospect of reoffence, which helps assist judges in awarding more informed sentencing decisions. However, the COMPAS algorithm faced severe criticism for its likelihood of reinforcing racial biases though optimized for overall accuracy and questioned the due process of law. The Wisconsin Supreme Court, however, declared that the use of COMPAS does not violate due process but placed restrictions on its use. Both state and trial courts referenced risk assessment scores despite COMPAS's author's refusal to reveal its data source. The algorithms deemed the culprit at high risk of reoffending, hence he was denied bail and sentenced to six years. The SC allowed the tool at the cost of depriving an individual of his liberty. The Court's opinion exposes misunderstandings about how algorithms might work. Moreover, it has questioned the transparency and fairness in decision-making, leading to potentially biased, discriminatory, and unjust outcomes (Angwin et al., 2022; Review, 2017).

Similarly, jury selection could provoke biased results where the datasets encounter inherent prejudices, leading to legitimacy concerns of the entire selection process. AI tools such as ML and NLP are employed to sift through a huge dataset based on public records and social media platforms which might affect a person's favorability as a potential juror. It is of great importance to ensure a fair jury selection process. Attorneys are mandated to avoid gender and racial discrimination while picking juries. If the algorithm favors or disfavors a particular race or gender, based on the embedded datasets, it could frustrate and vitiate the entire selection process (Robinson, 2023).

A significant case study was conducted on whether a child should be removed from their family owing to abusive circumstances. A data model based on unfairly discriminatory data was employed but the unwanted bias was mitigated by several means. Unwanted bias stems from the public datasets reflecting societal prejudices. Middle and upper-class families showed a higher tendency to hide abuse by using private health care. African American and biracial families' referrals occur three times higher than white families. The above study demonstrated how unwanted bias can creep into our models irrespective of the methodology we are comfortable with (McKenna, 2022).

There are various techniques whereby unwanted bias can be avoided: mitigating diversity deficits both in terms of demographics and skill sets wherein women and people of color remain underrepresented. One must also be aware of proxies and technical limitations. It is important to realize the confines of our data models and technological solutions to bias. Employment of NLP debiasing model and tools for supervised learning algorithms, and compliance with the legal obligations to ensure responsible use of AI technology in legal decision-making. The developer, however, cannot overcome all the issues alone. Ethical issues can only be fixed if society is fixed (McKenna, 2022). A regulatory landscape is, therefore, inevitable for the trustworthy use of AI in legal operations.

Even though the US does not have a comprehensive federal legislative framework to regulate AI, its legislative landscape is based on a combination of federal and local laws subjected to potential challenges like conflicting regulations. With the following legislative initiatives, an AI-legal regime has been evolving in the US: the National Artificial Intelligence Initiative Act of 2020 (NAIIA, 2020), which provides guidelines and aims at leading the world in research and development through a trustworthy AI system. It is committed to preparing a workforce to integrate AI across all systems of the economy and coordinate AI research and development with government agencies. The NAIIA also includes the Office of Science and Technology Policy (OSTP), a National AI Research Institute to develop AI datasets and testbeds, and training through outreach. Likewise, AI in Govt. Act, 2020 has a three-pronged objective: to facilitate AI integration in the federal government, to advance its competence, use, and adoption at the government level, and other activities for fostering public welfare and promoting the efficiency of government operations. The Advancing American AI Act of 2021 is another legislative effort to assist certain agencies in navigating AI programs and policies across the federal government.

In the 117th Congress, 75 AI-related bills were introduced but only six were successfully enacted. In the

118th Congress, 40 AI-related bills were introduced but none were passed. 33 bills were still pending for legislative consideration. In Jan 2023, OSTP published a blueprint for the AI Bill of Rights. Likewise, an AI Risk Management Framework was released, followed by two more policies, the SAFE innovation framework for AI policy and the Blumenthal & Hawley Bipartisan Framework on AI, to guide Congress for potential AI-related legislation. In April 2023, four federal agencies while underscoring their enforcement powers AI demonstrated that technology should not be considered an excuse for violation of law. A report published by Stanford University revealed that between 2016 – 2022, 14 states passed AI-based legislation: seven by Maryland, six by California, and five each by Massachusetts and Washington (Marcin, 2024). Till now, nearly 60 AI-related laws have been passed by 28 states (Standard, 2024).

Further navigating its vision toward AI governance, President Biden issued an Executive Order (EO) in Oct. 2023 regarding the safe and reliable use of AI with the directions to combat algorithmic discriminations and covers the following eight policy fields: the first policy field is about Safety and Security Standards for AI. The developers were assigned to develop safe and trustworthy AI-powered solutions and were required to share critical information and safety test results with the government. To direct further actions on AI and security, the White House Chief of Staff and National Security Council were assigned to develop a National Security Memorandum. The second policy field focuses on Citizens' Privacy from AI-related Risks, the EO urges guidelines for federal agencies to examine privacy-related matters. The third policy field covers Equality and Civil Rights, the EO calls for guidelines to address algorithmic biases and ensure a fair system. The fourth policy field offers Protections to Consumers, Patients, and Students, the EO urged to promote responsible use of AI in healthcare and education. The fifth policy field Support Workers, the EO calls for AI-driven policies to mitigate harm and amplify its benefits. The sixth policy field covers Innovation and Competition, the EO urges for a just and competitive AI ecosystem coupled with the initiatives to invite skilled force in relevant areas. The seventh policy field is about the US Leadership Abroad, the EO calls for bilateral and multilateral AI engagements to address global challenges. The eighth policy field focuses on Trustworthy and Effective AI technologies, the EO necessitates new guidelines for the government to use AI tools and accelerate government initiatives in hiring AI experts.

Reaction to the EO is characterized as a landmark and sweeping, both Democrats and Republicans supported its main provisions. Further, the EO sent a strong message to the world regarding the US stance on AI. Nevertheless, its regulatory oversight of data privacy

is important for effective and robust AI-powered solutions. To further AI research collaboration, the US and EU signed 'AI for the Public Good' in January 2023. Under the Trade and Technology Council (TTC), cooperate and implement a joint roadmap on AI tools and risk management. Listed 65 key terms and compiled a catalog of existing and emerging risks, including challenges posed by generative AI. For instance, the US has yet to legislate on the intellectual property rights of AI generative works (Irfan et al., 2024). However, the US Copyright Office and courts have started to confront whether generative AI work may be copyrighted and how it may infringe copyrights in other works (Zirpoli, 2023). Despite the US being considered a global AI leader in all sectors, its regulatory landscape is patchwork and lacks comprehensive federal legislation to overcome its associated challenges and consequences.

Conversely, Pakistan is at the initial stage of adopting AI, particularly in legal decision-making. Recently, a judge used an AI-powered solution while adjudicating a case ("Muhammad Iqbal v. Zayad," 2023). The court explained how AI is shaping the future of legal decision-making. The court applied ChatGPT-4 to test the predictive outcomes of the software. The court sought principles to grant an injunction in a civil case in Pakistan and compared it with the relevant statutory law. The court concluded that the results produced by the AI tool (irreparable harm, balance of convenience, and prima facie case) were the same as mentioned in civil law: Order 39, Section 94 (c) and (e) of the Code of Civil Procedure 1908 & Section 37(1) of the Specific Relief Act 1963. In addition, the tool produced three extra points for granting the injunction: good faith, public interest, and equitable consideration, which may amount to hallucinations. The judge, nonetheless, considered these extra conditions within the domain of law, though not stipulated in the statutes, but established through judicial precedents. The court asserted that the results of the AI tools are different in form but identical in substance ("Muhammad Iqbal v. Zayad," 2023).

The judicial system of Pakistan faces significant challenges such as a backlog of cases, limited resources, and poor case management (Munir, 2018). Despite the growing concern in navigating AI to address these issues, the adoption of AI in Pakistan's legal framework remains limited. Though efforts have already been initiated to include AI tools for case management and legal research, these efforts are still in their infancy, which will be a fundamental technology-based disruption to legal operations (Marchant, 2017). To improve the efficiency of the judiciary, the National Judicial Automation Committee (NAJC) has been reconstituted with the underlying objectives of the digitalization of the process and records, applications for access to justice, and case management. The Committee intends to automate the

judicial process and integrate AI into the legal process and research. The Committee is mandated to prepare a national plan based on AI to improve the efficiency of the administration of justice (Broadcasting, 2023).

The Apex Courts have adopted some initiatives leading to the automation process: cause listing, case status, online court proceedings, case flow management system, case management system, and case record management system (Shafiq et al., 2022). The courts started adopting AI-powered solutions for case management to address the backlog, avoid unnecessary delays, and improve the overall efficiency of the court system. These initiatives are promising necessitating the regulatory oversight and technological infrastructure, which are inevitable for the integration of AI in Pakistan's legal regime. The Ministry of Information Technology & Telecommunications has drafted the National Artificial Intelligence Policy that offers a range of initiatives such as fair utilization of personal data and adoption of AI.

The National AI Policy focuses on the responsible utilization and augmentation of AI and allied technologies. The policy also aims to raise public awareness regarding AI solutions and provide a legal framework for addressing associated challenges like data privacy. Through public and private partnerships, Pakistan has advanced some efforts like Presidential Initiatives for AI Computing (PIAIC), the Centre for AI and Computing (CAIC), the National Centre of AI (NCAI), and the Sino-Pak Centre for AI (SPCAI) (Telecommunication, 2023). Based on gaps and challenges, the policy has been constructed on four main pillars: public awareness, market enabling, a developing trusted environment, and evolution and transformation (Telecommunication, 2023). Considering Biden's Executive Order of 2023 regarding AI, one of the policy fields is the US commitment to bilateral and multilateral engagements to address global challenges. Pakistan can learn from the US experience and should engage with the US on AI-powered solutions in various sectors including the legal sphere.

Moreover, the judiciary in Pakistan must consider the following aspects while employing AI in the legal domain: the judiciary must be sensitized about the trustworthy use of AI in legal operations and the consequences of its ethical challenges such as bias, privacy, and hallucinations. Any irresponsible use or permission to use AI could lead to defeat the cause of justice. The Pakistan Bar Association and the Supreme Court should formulate professional ethical standards to utilize AI in legal operations. Soon the judiciary will face challenges of hallucinations and biases once it realizes the issue of plausible but fabricated response. Legal professionals should also consider specific legal AI tools instead of general AI applications wherein the prospects of hallucinated responses multiply. It is noteworthy that in

religiously dominated states like Pakistan where religion is a significant concern, the adoption of AI in policymaking and adjudication would face challenges to debiasing data from religious influence that could potentially affect religious minorities.

The US is a global leader in AI, backed by technological infrastructure and a legal system prone to innovation, successfully incorporating various AI tools such as NLP and Machine Language (ML) in legal research and case analytics, allowing legal professionals to work further efficiently. Nevertheless, the integration of AI in legal decision-making is not fully appreciated due to concerns regarding the complexity of algorithms and the probability of biased outcomes. In Pakistan, the tendency towards integration of AI in the legal framework is hindered by many factors: limited resources and technological infrastructure, lack of skilled professionals, and insufficient regulatory framework. By considering these factors, a potential for AI to advance the efficiency of Pakistan's legal system by realizing the fact that investment in technology and capacity-building is inevitable for uplifting its legal framework.

The rapid growth of AI technology and its associated challenges necessitates regulatory oversight. For instance, the EU has started addressing ethical concerns like data governance, privacy, and accountability (Commission, 2020). Likewise, the UK has established a council to guide a secure AI ecosystem and is committed to becoming a global AI superpower in the next 10 years (Department for Digital, 2021). These efforts, however, constitute a patchwork regulatory atmosphere without significant cooperation in developing AI standards. International bodies like the UN should design a comprehensive legal framework for AI integration into law that meets all the required standards of justice and to which the member states should comply while formulating their domestic regulatory frameworks. However, some initiatives have been undertaken in the form of a Report on Governing AI for Humanity, Global Governance of AI, and an Advisory Body on AI, etc. (Body).

In the Pak-US context, there is a fundamental difference between the regulatory landscapes in legal decision-making of both the USA and Pakistan: the former operates AI through federal and state regulations coupled with the guidelines from the legal fraternity like the American Bar Association (ABA) with the ultimate objective to ensure the use of AI to meet with the minimum standards of justice without compromising the principles of fairness and impartiality (West et al., 2019). The latter lacks any comprehensive statutory regulation to deal with AI in the legal domain. Even though the National AI policy provides guidelines for regulatory oversight, Pakistan has yet to draft a comprehensive AI regulatory framework.

Comprehensively, AI solutions in sentencing and predictive policing opened a new debate among US legal scholars on their ethical concerns including fairness, accountability, hallucination, and potential erosion of human judgment. For instance, the issue of prejudice in datasets may adversely affect marginalized communities if AI tools are not designed meticulously, focused on data training, debiasing techniques, and a rigorous review process. Unlike the US, in Pakistan, these issues remain undiscussed because it has just commenced AI in legal operations. To facilitate a smooth transition, Pakistan should consider these challenges and learn from the US experience to overcome potential hindrances in the administration of justice.

Effects of AI on Legal Adjudications

The integration of AI in the legal sphere has substantially reshaped the administration of justice, raised legitimacy concerns, and underscored the codification of the legal system (Hildebrandt, 2018). To have an idea about the prospective implications of AI, it is imperative to examine its functions. AI has the potential to assist human judges instead of replacing them entirely, particularly where human rationale is required (Campbell, 2023). AI tools like predictive analytics project unforeseen scenarios and could help predict case outcomes (Mishra & Silakari, 2012). Contract analytics helps with drafting and reviewing commercial contracts (Geis, 2008). Likewise, automating documents can help create, edit, and maintain complex documents (Fathima et al., 2024). AI-powered solutions are comparatively more efficient (Ma, 2022). Data automation significantly assists legal professionals in saving their time for other critical matters (Legg & Bell, 2019; Pagallo & Durante, 2016). AI tools are cost-effective with consistent results, reducing the chances of errors (Chaudhuri et al., 2014). It helps scale legal services in business operations (Armour & Sako, 2020). The use of AI in the legal sphere also brings challenges of ethical and other considerations: based on its reliance on historical data, AI-driven decisions could lead to discriminatory and unfair treatment of the parties (Ntoutsis et al., 2020). To exemplify, predictive policing tools are subject to criticism for targeting marginalized communities on the pretext of prejudices present in the datasets (Browning & Arrigo, 2021). Transparency in AI legal operations is a considerable challenge to its legitimacy (Diakopoulos, 2014). The complexity of the laws is also a critical issue because AI handles structured data and the complexity in legal reasoning poses significant challenges. Sometimes laws are considered in a specific context where human intuition and ethical considerations are required, which AI may not mimic accordingly (Wright, 2020).

Generative AI tools are still in their beginning, despite the abundance of data training. One of the

emerging issues in legal AI-assisted tools is hallucinated references to the legal drafts and research which could mislead the court and may amount to heinous offences like gross negligence and fraud. At times, the AI tools provide a response based on illusionary references and precedents, and the lawyers use these tools for legal research and submit them to the court, without verifying them, which might contain false citations based on the output of generative AI solutions. For instance, an attorney submitted a legal brief prepared with generative AI assistance. The draft incorporated citations to the cases as precedents to support his stance. However, the court discovered that six of those precedents did not exist, they had been deemed by the online tool (Neal, 2024).

Looking at the spectrum of the ethical perspective, AI-based decision-making are coupled with potential challenges like bias, transparency, and accountability, which should be resolved as a priority (Ejjami, 2024). The US should design regulatory oversight to advance the cause of justice and fair play in AI-based decision-making. Further, the rapid growth of AI and its influence on legal decision-making necessitates regular updating of legal and ethical frameworks to keep up with the technological advancements in the legal arena. Likewise, Pakistan should focus on constructing technological infrastructure to effectively integrate AI into its legal framework focused on regulatory oversight to keep a check on the use of AI to overcome ethical issues and public awareness to repose trust in the AI-driven justice system.

The ABA underlined that professionals should investigate the ethical impacts of AI and uphold the client's interest, which is the ultimate responsibility of a lawyer (Rogers & Bell, 2019). AI depends on big data creating privacy issues and necessities strict security measures (Tom et al., 2020). Liability and accountability are other crucial concerns, based on the automated review process followed by an autonomous decision. For instance, if an AI system produces a flawed legal argument, it could lead to a miscarriage of justice. In such a situation, to whom should be held liable – the legal professional, the developer, or the AI itself? In an AI-backed decision-making process, a liability framework is a significant area for the current legal scholarship.

Conclusion

To conclude, AI significantly contributes to and assists in legal decision-making, it brings ethical challenges of bias, transparency, and accountability. AI-powered solutions can substantially assist legal professionals, litigants, and judges. Undoubtedly, AI is transforming and reshaping the legal regime, it should be used as a tool for assistance to foster the cause of justice and not as an entity to replace the attorneys or judges. The discretionary authority of the judicial officers is to choose among the

available alternatives based on the premise of the realities and context of each case to which a judge applies his subjective judgment. AI tools learn from the human cognitive abilities provided in the form of datasets and predict potential case outcomes accordingly without employing subjective judgment, which could be regarded as an efficient but mechanical way of dispensing justice and less likely to be considered a prudent adjudication. Moreover, the biases in previous datasets and the rational and legal insight of the developers cannot be overlooked. Concerns regarding bias, fabricated references, and data privacy are significant areas for further scholarship.

The prospects of AI legal are characterized by reinforcement rather than replacement of legal

professionals as it will not make lawyers irrelevant rather their role will be more interactive and AI-dependent (McKamey, [2017](#)). AI-powered solutions can help provide affordable legal services to underprivileged communities and may bridge gaps in access to justice. Unlike traditional legal services, it can navigate the legal process cost-effectively (Marwala & Mpedi, [2024](#)). AI legal applications pose challenges and opportunities. The USA and Pakistan are going through the same transition of AI integration at different scales, where regulatory oversight for addressing their ethical concerns is inevitable. Further interdisciplinary research is necessary to navigate the complexities and implications of AI legal tools.

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