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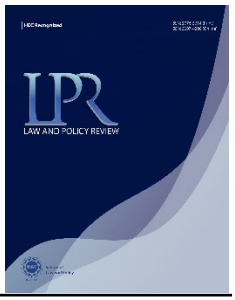

Title:	**Developing a Legal Framework for Digital Policy: A Roadmap for AI Regulations in Pakistan**
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Developing a Legal Framework for Digital Policy: A Roadmap for AI Regulations in Pakistan

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Abstract

Exploring the steps for establishing a legal framework for artificial intelligence (AI) is an emerging national concern for federal governments. As the field of AI continues to develop rapidly, countries all over the world are striving to effectively regulate and legalize this new technology. The purpose of this research paper is to propose a legal framework for digital policy in Pakistan, taking into account privacy issues, ethical issues, and possible societal effects. This study offers Pakistan a risk management framework for navigating the challenges of AI regulation by examining global practices and peer-reviewed studies. Taking into account the ethical implications, legal apprehensions, and potential social impacts, now the nations are contending with the task of framing effective codes of practice and laws to govern this emerging technology. Through rapid review methodology, this study analyzes international practices and draws upon expert opinions to provide a comprehensive roadmap for Pakistan to navigate the complexities associated with AI regulations.

Keywords: AI, ethical issues, global practices, law, legal dilemmas, national policy, privacy and data protection.

Introduction

Intersection of digital and computational knowledge with social sciences and legal studies is an emerging scholarly concern for data ethicists, cultural critics and futurists. Digital privacy and AI ethics are getting increasingly important in governance and regulatory concerns with the mystified application of highly diverse uses and functions of artificial intelligence and surveillance. In order to improve our understanding of complex digital harms and provide guidance for targeted (internal and external) legal actions, regulatory procedures, and sustainable national action plan that

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prevent the escalation of present biases and digital disparities, now the research in cross-disciplinarity with a more legal focal point is administratively urgent than ever before. The first section introduces the usage of AI in legal sector and briefly outlines parliamentary level proceedings on instituting a morally and legally bound technology-adoptation of AI systems in Pakistan. Then it reviews the relevant scholarly literature on legal challenges and ethical repercussions.

Ethical nature of recent research in Futures Studies in particular is already focusing on topics like emergent (toxic) knowledge, big data, censorship (Sardar, 2020) information warfare and algorithmic accountability. Recent publications are now covering issues like strategizing and stratifying ethical AI (Nyholm, 2024), causal fairness analysis in machine learning (Plečko & Bareinboim, 2024), network measurements (Ververis et al., 2024), information controls (Ruan et al., 2021), digital divide (Lythreatis et al., 2022), gender and technology-facilitated violence (Søndergaard, 2020). This study aims to draft a proposal for an AI regulatory framework for enacting a straight regulation and legalizing specific uses of AI systems and related risks (Ahn & Chen, 2020). In order to be able to demonstrate the complexity under fairness-use policy, legal dilemmas and disputation mediation, reflexive appraisal of emerging ethical questions in AI governance remains an underexplored area of study. This study seeks to demystify national-level policy formulations to consider and evaluate the cross-sectorial methods and symbiotic practices that brings together the social realities, technological sciences, and the field of law. It will discuss selective methodological advancements and real-world difficulties encountered when collaborating in inter-ministerial coordination.

That is why a structural digital governance model is required to upkeep theory, practice and training in line with techno-legal or technical hitches and glitches that come with intergovernmental and interdepartmental working. It offers insights into the legal challenges encountered and strategies used on public interest and human agency issues in various domains by concentrating on the craft of inter-departmental coordination and multifaceted collaboration at federal level. In order to develop a legal framework for digital policy, the next section follows a general introduction of AI regulatory approaches in the world with a detailed federal level roadmap for AI regulation in the country. Put in together, how can Pakistan

check-in AI governance and improve public sector based on updated global legal insights (AI reports, AI acts, readings, international conferences and official documents) and recently proposed international practices on ethical and responsible AI.

Objectives

The objectives of this study are as follows:

1. To provide an overview of the current legal status of AI in the country.
2. To demystify fair-use policy on AI with legal dilemmas and ethical complications.
3. To present a basic overview of AI regulatory procedures worldwide, with comparable legal interventions in Pakistan.
4. To draft inter-sectorial AI regulations for digital policy that align with both regulatory framework and societal values.

Brief History of AI Regulation as Central Policy Question in Parliament of Pakistan

The Personal Data Protection Bill is a Pakistani law that attempts to protect personal data from misuse by corporations and governments. The normative implementation of General Data Protection Regulations (GDPR) by the European Union equally impacted the Cyber Law policymakers of Pakistan (Bentotahewa et al. 2022). Indeed, there are risks involved in this new technology applications, therefore identification of all issues must be borderline. Which AI systems should be approved and which must not? (Ahn & Chen, 2020). What are the comparable legal liabilities to advance the right to use to the Pakistani market. Where light transparency obligations are likely to be enacted and where strict provisions must be made?[1] An agreement among and between federating units is needed to state their broad policy on this emerging technology. Provincial and national assemblies are required to initiate parliamentary readings on AI legal and regulatory framework subject to ample adjustments to the

[1]"What is the 'Personal Data Protection Bill 2018'? And "Maximum Punishment Proposed: Moit&t Drafts 'Personal Data Protection Bill 2018,'" Business Recorder, accessed June 3, 2024, https://fp.brecorder.com/2018/07/20180708388700/.

delineation of approved and non-approved AI systems, and their subsequent sanctioning of generative and regenerative uses.[2]

The Pakistani constitution safeguards the right to privacy, ensuring personal data protection for individuals and organizations. It states that "Whoever obtains, sells, possesses, transmits or uses another person's identity information without authorization shall be punished with imprisonment for a term which may extend to three years or with fine which may extend to five million rupees, or with both." Chapter II, Articles 8 through 28, addresses each Pakistani citizen's fundamental rights. Laws that conflict with or violate the rights established in this chapter are null and void, as stated in Article 8. The Chapter further forbids discrimination based on sex and declares that all citizens are equal before the law. In addition, there is a section that specifically mentions particular accommodations for women and children, as well as a general prohibition against discrimination in public settings on the grounds of race, religion, caste, sex, place of residence, or birthplace. [3]

Personal Data Protection Bill May 2023, outlines procedures for processing personal data, promoting fair practices in the digital economy by providing legal protections for online transactions and facilitating data sharing for personal, international, and e-commerce services (Ministry of Information Technology & Telecommunication, 2023). The Personal Data Protection Bill aligns with global and regional legislation on data protection to address the digital transformation impacting economic, political, and social activities. It ensures extra protection for children, who are early adopters of emerging technologies, as they are vulnerable to digital threats. The bill aims to foster trust online and ensure the collection of personal data for lawful, fair, and consensual purposes, allowing it to be used or disclosed

[2] "Pakistan currently has not enacted data protection legislation per se similar to data protection legislation enacted in other countries of the world, however the Prevention of Electronic Crimes Act, 2016 ("**PECA 2016**") at present serves the same purpose to a certain extent. Moreover, a draft of the Personal Data Protection Bill 2023 ("**PDPB**") has been introduced by the Ministry of Information Technology and Telecommunications with a view to having the same being promulgated into law after public consultation, approval from both Houses of Parliament and receipt of assent from the President of Pakistan." "Compare Data Protection Laws around the World." DLA Piper Global Data Protection Laws of the World - World Map. Accessed June 2, 2024. https://www.dlapiperdataprotection.com/.

[3] www.https://portal.mohr.gov.pk/national_framework/constitution-of-pakistan/

for the purposes for which it was collected or related. The bill regulates personal data collection, processing, use, disclosure, and transfer, providing a data protection mechanism and addressing offenses related to data privacy violations, respecting individual rights and dignity (Ministry of Information Technology & Telecommunication, 2023).

It is anticipated that by enhancing forecasting, streamlining processes and allocating resources, and customizing offerings AI technologies would yield several economic and societal advantages across various domains, such as public health and environment, finance, mobility, and agriculture. However, law making process cannot go unnoticed over the implications of AI systems for constitutionally driven fundamental rights, as well as the AI technologies user's products-services related safety risks. Above all, fundamental rights including the freedom of speech, human dignity, nondiscrimination, privacy, and personal data protection may be compromised by AI systems.[4] Because of how quickly these technologies are developing, AI regulation has emerged as a legal challenge for the governments and society in recent years (Human Rights Watch, 2024). To guarantee that Pakistani citizens can profit from new technologies created and operating in accordance with social values, religious principles, and national ethos, policymakers committed to developing a "humancentric" approach to AI.

The Parliament of Islamic Republic of Pakistan recently pledged in its draft to encourage the adoption of AI and address the risks related to specific applications of this cutting-edge technology (Ministry of Information Technology & Telecommunication, 2023). The legislature has shifted from a lenient to relatively legislative approach, promoting uniform guidelines for the creation, deployment, and placement of AI systems. Though personal data protection bill on digital technologies was not that much strict at earlier stages, (Government of Pakistan, 2016), yet for the creation, deployment, and placement of AI systems, Data Protection Bill 2023 adopted a hard legislative approach, with the introduction of different chapters compiling a whole lot of coordinated directions as a formal legal and policy matter.

[4] An extended concern over the middle ground between techno-optimism and techno-pessimism is an ongoing debate.

Various recommendations advocating for a federal approach to AI were supported by the parliament of Pakistan. The national assembly adopted a number of resolutions urging the adoption of national legislation in the area of artificial intelligence. It also urges to evaluate the effects of digital technologies and to draft a framework in its comprehensive 2023 recommendations on civil law rules. A first legislative resolution called for the imposition of strict liability on operators of high-risk AI systems and the harmonisation of the legal framework for civil liability claims (Ministry of Information Technology & Telecommunication, 2023). It also sought to create a legal framework of ethical principles for the development, deployment, and use of robotics, AI and related technologies.

AI, Law and Policy Debates

Before adding to a formal legal framework for AI regulations, it is important to understand how AI is impacting the field of law and legal practice itself. As now computers can complete tasks faster than people, thanks to a rapidly developing technology called AI, so it has enabled the faster completion of time-sensitive tasks, revolutionizing a number of fields, including the legal profession (Villasenor, 2023). The discussion of artificial intelligence's potential legal ramifications is growing in popularity. AI systems consist of a control unit and a processing component. AI helps with human rights defense, navigating the legal system, and comprehending legal documents. It also protects the lives of individuals in remote regions, making access to the law more accessible. As AI continues to advance, it could significantly impact the future of law. By offering people online tools to handle and resolve their legal issues, AI is completely changing the legal sector (Hartman, 2024). AI-assisted search engines can make Pakistan's dynamic and ever-evolving legal systems, like judicial precedents, simpler. Law firms can verify facts, provide data, and settle cases more quickly and efficiently with the help of AI-assisted platforms (Stepka, 2022).AI has the power to completely change how lawyers practice law as well as how people view it.

AI is also transforming the legal sector by cutting down on the time and labor needed for analysis, making decisions, and representation. Although AI won't replace lawyers, it will increase their productivity and knowledge, making both legal professionals and law firms more efficient (Mathur, 2022). It has the potential to revolutionize various other sectors, including healthcare, education, transportation, and governance. However, the

unregulated deployment of AI systems presents challenges related to data privacy, accountability, fairness, and biases in particular. To enable the positive impacts of AI while mitigating potential risks, it is essential for Pakistan to establish a legal foundation that promotes responsible and ethical deployment of AI technologies.

Nations can align with internationally approved AI policy and set the path for ethical, responsible, and inclusive AI adoption within their respective borders by implementing specific principles and strategies. To maximize AI's potential benefits for societies around the world while addressing the intricate regulatory challenges, it is imperative to promote international collaboration and knowledge-sharing (Oxford Analytica, 2023). This study encourages cooperation and partnerships in order to share research, exchange best practices, and jointly address global challenges pertaining to AI regulation with other countries, international organizations, and industry stakeholders. It also establishes global norms and regulations for AI research and application to promote uniformity and interoperability across nations. It helps in creating not just a thorough ethical framework and guidelines that cover the issues of AI privacy, transparency, justice, accountability, and human rights, but also consult with professionals from a range of sectors, such as academia, business, and civil society, to develop and improve these frameworks while taking national boundaries and societal norms into account.

This study helps in legislating vigorous data protection and privacy laws that prioritize the rights of people and safeguard accountable data handling practices in the AI ecosystem. Such robust policy guidelines decree informed consent, data minimization, purpose limitation, and deliver individuals with mechanism over their own personal data. While considering the prospective of responsible data sharing and cross-border collaborations, this study helps in implement data governance practices that regulate data collection, usage, sharing, and access for AI systems. Further legislation involves creating policies and rules that facilitate accountability and transparency in AI systems. This could involve specifications for auditability, model documentation, and AI algorithms that are understandable and interpretable. The recent debates are also struggling with procedures for impartial assessments and certification of AI systems in order to guarantee adherence to legal requirements, moral principles, and the avoidance of discriminatory or biased behavior (Kutterer, 2024).

Opening the door for AI education and training initiatives will provide people the know-how and abilities they need to engage in the AI-driven economy and to ensure a fair transition to the AI era, proactively address potential socio-economic effects of AI, such as job displacement, and develop strategies for re-skilling and upskilling workers. The legal framework also adds in creating rules and guidelines for AI safety to guarantee the responsible application of AI systems, especially in areas like transportation, healthcare, and critical infrastructure where human impact is substantial. When it comes to safety and national security, it also boosts cybersecurity defenses to keep AI systems safe from hostile intrusions and guarantee the accuracy and reliability of AI data and algorithms (Kalhoro, 2024).

An Overview of the Legal Challenges for Governments in Implementing AI Policies

The government of Pakistan should be prepared to tackle the legal issues raised by the development of appropriate AI legislation in order to stay up with the technology's rapid progress. This section looks at the legal obstacles governments face while developing and implementing AI legislation. This section examines key topics including privacy, data governance, liability, ethics, and intellectual property in an effort to shed light on the legal obstacles that governments must overcome in order to ensure the responsible and accountable use of AI. Governments worldwide are realizing that AI has the potential to change the world, but they also understand that controlling its use is necessary to safeguard people's rights, advance justice, and assure the benefits to society and environment (Galaz et al., 2021). Nonetheless, converting AI principles into useful legal frameworks offer governments with unique solutions for complex issues and corporate social responsibility.

To validate AI-led decisions, we need to set a criteria for transparent, clear, and auditable algorithms. When it comes to privacy and data governance, it has been found out that regulating privacy while promoting AI innovation requires governments to find a careful balance. It is difficult to create regulations that protect privacy rights without obstructing development. Without doubt AI makes broad use of data, therefore its governance, permission, transparency, and security are issue. For tackling these matters and dealing with intercontinental data flows, governments all over the world now need to develop plan of action on data protection and

governance (Bostrom, 2014).The subsequent foremost task is liability and accountability because AI systems regularly include complex nets of algorithms and data sources, therefore determining who is answerable for mistakes, mishaps, or skewed results is always complex as well. In order to ensure accountability, governments need to institute firm legal structures for AI related damages. By substantiating legal decisions governments must formulate ways to individual and case to case level responsibility for AI systems.

The ethical and social impact of AI is another significant legal challenge. When it comes to moral canons such as accountability, transparency, nondiscrimination, and fairness, governments must be concerned with developing ethical course of action on AI research and application. Finding a balance between varying ethical perspectives and universal standards is a legal challenge. Regarding the societal ramifications, an extensive adoption of AI as agreed by many could be detrimental to society as it could cause so many negative impacts like job loss and economic inequality. Government level legislative frameworks must include issues on digital divide, social repercussions, and equitable benefit distribution from AI to ensure an inclusive and just AI-driven future. A new legal obligation for governments now is to protect innovation, copyright protection, patentability of AI-related inventions, and ownership of content produced by AI so to speak intellectual property rights. AI technology presents intricate IP issues, such as. To accommodate the distinctive characteristics of outputs produced by AI, governments must reevaluate the current intellectual property regulations. Data ownership is also complex matter; determining who owns the data that is used to train AI models is crucial. To achieve a fair balance between the rights of individuals and the potential to advance society, governments need to define data ownership rights and regulate data marketplaces.

Summary of AIs Ethical Repercussions

The potential for AI in national development is enormous, yet to circumvent unfairness or unexpected consequences it is essential to make sure AIs ethical use, taking into account its possible societal impact and human-touch (Bostrom, 2014). However, that there may occur many kinds of legal disagreements (either global or local) which must be discussed for AI to reach on full legal potential.

According to Gezgin et al. (2021), AI-powered machines are based on supra-technological foundations that slavishly support wealthy and strong nations, impeding sustainable development and fostering a new kind of digital orientalism by escalating already-existing divides. Concerns about the alternative social reality are deeply ingrained in the metalanguage of dominance that permeates western society (Sardar, 2020). Thus, it is imperative that cultural critics step up to present an accurate image and practical advice on how to avoid erasing non-western history in post-normal times. Machine learning is expected to rely on the deepening of certain reductionisms pertaining to gender, race, color, and religion in addition to AI's Orientalist reflexivity (Lexalytics, 2022). A recent legal concern is bias in AI algorithms. Fergosen found that the data that AI algorithms are trained on determines the quality of those algorithms, meaning that biased material will be reproduced by AI systems if it contains flaws or preconceptions (Ferguson, 2017). Another issue is that as AI-powered solutions proliferate, some employment may become obsolete, leading to job loss and unstable income. This is especially troublesome for Pakistan because there is a sizable diaspora there that provides income. The majority of workers will return, which will further increase resource availability and hence political instability (Mesa, 2023). Julia Glidden is of the view that in order to mitigate dangers, robust data protection frameworks, algorithmic transparency, and accountable AI practices are central (Apple Podcasts, 2022). Ethicists argue that prioritizing confidentiality and safety methods are indispensable for fair AI use (Harari, 2018). Therefore the administrations must concentrate on enormously complex *legalities* of AI technologies (FWD50, 2022).

Due to the unique bureaucratic procedures and low level of collaboration in Pakistan's public sector, there are still issues that need to be resolved. These include inadequate infrastructure, poor data quality, a dearth of qualified AI experts, and ethical conundrums. AI-law experts must collaborate with industry, academia, and the federal government to find solutions to these issues and build a robust AI ecosystem (Nagano, 2018). Another quasi-legal dimension may be that if workers are to be able to adapt to the changing nature of the labor market, then both the public and private sectors need to develop retraining and upskilling programs (Dong & McIntyre, 2014). Last but not least, for example, with regard to education and research as uses of Natural Language Processing systems are going to be restructuring research's originality and its integrity, so developing legal disagreements associated to accuracy, bias, worth, and validation of

authorship rights must be timely arbitrated (Hosseini et al., 2023). In light of these conflicting nature of interests, therefore an extended nature of legal framework will be needed to resolve these disputes/issues in immediate future. One notable critic is of the view that AI has put the future of democracy in danger.[5] Therefore, in-depth research is required to cover the multitude of issues for governments in immediate future.

National-level AI Fair-use Policy-Guidelines

A Global (Legal) Insight

The European Parliament and European Union lawmakers draft an AI regulatory framework to establish a technology-neutral delineation[6] of AI systems in national law and a risk taxonomy with legal provisions and responsibilities. It requires member states to agree on their broad policy on AI and initiate legal and regulatory frameworks with adjustments to the delineation of approved and non-approved AI systems. The European Enterprises Alliance and Algorithm Watch have emphasized the uncertainty surrounding the roles and responsibilities of AI value chain developers, providers, and users. They call for a redefined definition of 'high-risk' based on measurable harm and potential impact. They also recommend that new rules be based on the impact of AI systems and require case-by-case impact assessments. Climate Change AI calls for climate change mitigation and adaptation in classification rules (Human Rights Watch, 2024). If European Parliament and the United States attach such importance to the ethical and responsible development, application, and regulation of AI then other countries can take a cue from this policy and apply comparable ideas to their national-level as well as regional legal frameworks on artificial intelligence.

AI Regulatory Approach Worldwide

EU lawmakers issued a joint statement in May 2023 urging President Biden and European Commission President to convene a summit to find ways to control the development of advanced AI systems such as ChatGPT.

[5] See, Policy Dialogue on Artificial Intelligence and Democracy: Contemporary Challenges and Perspectives. It was organized by Florence School of Transnational Governance's Chair in AI and Democracy to explore the impact of the rapid growth of AI on society and our democratic political systems.

[6] The term refers to need-based legal and constitutional revisions as per changing conditions, maintaining diversity of distributors or allowing healthy choices to be made by consumers.

It very important to give an overview what the world is doing now with regard to new technological adaptation:

An increasing number of countries worldwide are designing and implementing AI governance legislation and policies. While the United States of America (USA) had initially taken a lenient approach towards AI, calls for regulation have recently been mounting. The Cyberspace Administration of China is also consulting on a proposal to regulate AI, while the UK is working on a set of pro-innovation regulatory principles. At international level, the Organisation for Economic Co-operation and Development (OECD) adopted a (non-binding) Recommendation on AI in 2019, UNESCO adopted Recommendations on the Ethics of AI in 2021, and the Council of Europe is currently working on an international convention on AI. Furthermore, in the context of the newly established EU-US tech partnership (the Trade and Technology Council), the EU and USA are seeking to develop a mutual understanding on the principles underlining trustworthy and responsible AI. (Madiega, 2024, p. 2)

It is clear from EU brief or President Biden's AI policy that these countries place great importance on the ethical and responsible development, application, and regulation of AI. When formulating AI policies and applying comparable ideas to their own legal frameworks, other countries should take into account several important factors. AI, if used ethically has the ability to enhance productivity, security, creativity, and global prosperity while also aiding in the resolution of urgent problems. However, negligent use may potentially exacerbate detrimental social outcomes like deception, prejudice, discrimination, and fraud. To fully realize AI's potential for good and enjoy all of its advantages, it is imperative to mitigate the technology's major hazards. Executive departments are collaborating with public and private sectors, academia, and civil society to ensure AI use compliance and guiding principles, considering diverse opinions.

Strict assessments, guidelines, and procedures—such as appropriate labeling, content tracking, and post-deployment performance monitoring—as well as the management of cybersecurity, biotechnology, and critical infrastructure issues are required to guarantee AI security and safety The government wants to encourage ethical innovation, competition, and collaboration in order to effectively use AI to address societal challenges. In addition to supporting a just, transparent, and suitable legislative

framework for AI, the government funds initiatives that increase AI capabilities and support research, development, and training. The administration must support workers in the proper development and placement of AI to promise that they can take advantage from new sectors and jobs by adapting employment training and education. In this lieu, using AI that disturb human rights or even job quality, unfavorable worker monitoring, condense market competition, posing health and safety risks, and interfering with labour should be strictly addressed.

The question is how Pakistan can rely on AI to advance discourses on civil rights and justice. A fair-use course of action is also a vital tool for warranting the impartial and transparent use of AI in healthcare, housing, and service sectors. Legal measures will be needed to prevent AI from being misused through prejudice and discrimination, which could further exacerbate the digital divide. The framework should be supportive to technical assessments, misunderstanding, and stringent regulation to ensure AI conformity with the national laws and constitution when come to protecting against unlawful discrimination and new manifesto of civil and fundamental rights.

As new technologies evolve and makes it easier to produce, re-identify, and manipulate private data, the government should legalize new technologies to protect citizens' civil rights and privacy. This necessitates using privacy-enhancing technologies to protect rights and privacy hazards. Duties of national governments are varied now in face of consumer protection, therefore the federal government should be vigilant on safeguards against fraud, inadvertent bias, discrimination, and privacy issues from AI. This is essential for social sectors including education, housing, legal services, healthcare, finance and transportation. For protection of consumers, raise selection, reduce costs, and augment product excellence, the government of Pakistan should upkeep the accountable consumption of new technologies.

The emphasis of the national government needs to be on handling the dangers and threats and improving its capability to oversee and standardize its responsible application. It is imperative that Islamabad guarantees enough training for its workforce, modernizes its IT infrastructure, and attracts and retains AI specialists from impoverished regions of South Punjab, Rural Sindh, and Baluchistan. This will facilitate the efficient use and management of AI for improved outcomes. The government should be

dedicated to spearheading societal, economic, and technological advancement on a worldwide scale. This includes cutting-edge programs and measures to ensure the responsible use of technology. To ensure AI benefits the world, the government will collaborate with international allies to manage risks, unleash potential, and promote shared challenges. All agencies, except regulatory ones, should utilize AI-based systems for forecasting, suggesting, and decision-making based on human goals, including AI models in information systems.

AI red-teaming concept is a methodical testing procedure used by committed teams with adversarial techniques to find weaknesses and vulnerabilities in AI systems. Any data system, software, hardware, application, tool, or utility that uses artificial intelligence is referred to as "AI system". "Commercially available information" is defined as data about people or organizations that is made accessible to the general public or other organizations. "Crime forecasting" is the application of analytical methods, such as statistical and machine-generated forecasts, to anticipate future crimes or crime-related data (Government Publishing Office, 2023). A privacy guarantee will restrict unauthorized access while safeguarding group member information. An AI model that has been trained on a large amount of data, self-supervision, and high performance in tasks that pose significant risks to public health, security, or the economy by adding technological protections to these models to stop abuse.

The department of Commerce should develop best practices and guidelines for AI safety and security in conjunction with the Ministry of Technology. These include developing an add-on resource for the AI fair use policy, implementing secure development procedures for dual-use foundation models and generative AI, and starting an audit and evaluation program for AI capabilities. Rules for AI regulatory bodies, which evaluate and oversee the security, reliability, and safety of dual-use foundation models, will also be developed.

In order to identify and reduce AI security risks, Energy and Petroleum should create and carry out a plan for the development and testing of the ministry's AI model evaluation tools. The instruments will be used to produce outputs that show possible risks or hazards and evaluate short-term extrapolations of AI systems' capabilities by conferring with academic institutions, industry associations, private AI research facilities, and independent assessors. In addition to requiring information on ongoing

activities related to training, development, and production of these models, the ministry of commerce should require companies intending to develop dual-use foundation models to furnish the Federal Government with information on ownership and possession of model weights and physical and cybersecurity measures. In addition, the business must submit the outcomes of AI bodies conducted in accordance with guidelines and the steps it took to achieve safety goals, such as performance-enhancing mitigations and enhanced overall model security.

Any businesses, people, or groups that purchase, create, or own a large-scale computing cluster are required to disclose these activities. Subject to reporting requirements, the ministry of Commerce will establish and update the technical specifications for models and computing clusters after consulting with other departments. Models trained on biological sequence data, clusters with a theoretical maximum computing capacity of 1020 operations per second for AI training, or models trained on computing power greater than 1026 must comply. To address the national emergency pertaining to significant malicious cyber-enabled activities, more actions need to be taken (The White House, 2023).

The proposed regulations mandate that US IaaS Providers notify the Secretary of Commerce whenever a foreign individual transacts using a sizable AI model that may be used for malevolent cyber-enabled activities. The identity of the foreign individual, any model training runs, and any additional information must all be included in the reports. In order to conduct a training run, the regulations also mandate that foreign resellers of US IaaS products submit reports containing information on every instance in which a foreign individual transacts with a foreign reseller. If the model needs more than 1026 operations and is trained on a cluster, it must have the capacity to engage in malicious cyber-enabled activity.

National Security Council should be putting policies in place to control AI in cybersecurity and vital infrastructure. The head of each agency will assess any possible risks associated with the use of AI in critical infrastructure sectors in collaboration with the Cybersecurity and Infrastructure Security Agency. A public report on the best ways for financial institutions to handle cybersecurity risks should also be released. When applicable, the AI fi use policy will be used. Relevant bodies should collaborate for draft regulations that Islamabad can enforce. In addition to implementing measures for both national and non-national security

systems, the ministry of Defense should plan operational pilot projects to discover, create, test, assess, and implement artificial intelligence.

The government should take action to lessen the risks by outlining the standards, instruments, procedures, and practices currently in place for software testing, auditing synthetic content, detecting, authenticating, labeling, and preventing generative AI from producing negative content for detecting synthetic content and authenticating digital content. The business community, academic institutions, and civil society should be asked to provide feedback regarding the advantages and disadvantages of dual-use foundation models with model weights that are widely accessible. The consultation should center on improving these models, the advantages of AI innovation and research, and possible risk management strategies. Together with suggestions for regulations and policy, a report on the advantages, drawbacks, and implications of these models will be needed.

The federal government is in charge of luring and keeping AI talent in the nation. Non-citizens should expedite the visa application procedure if they intend to work on, study, or conduct research in AI or other significant and developing technologies. They should also ensure that candidates with expertise of AI or other significant and emerging technologies will still be able to schedule visa appointments. They ought to think about it and begin formulating new regulations to establish new criteria for classifying citizens and their abilities. The potential of AI to improve electric grid infrastructure design, permitting, investment, and operations has to be documented in a public report. The report should create tools for creating foundation models for science and academia in addition to collaborating with private sector organizations, growing alliances with industry, academia, and foreign allies, and setting up an office to coordinate AI development across programs and National Laboratories. When the time is right, a report on AI's role in research should be delivered, covering potential issues and protocols to ensure responsible AI use.

The leaders of each agency tasked with developing AI-related policies and regulations must use their power to promote competition in AI and related technologies in order to reduce the risks associated with concentrated control over critical inputs, stop illicit collusion, and open up new avenues for small businesses and entrepreneurs. It is encouraged that the government/ ministries use its power to uphold fair competition in the AI market and shield workers and consumers from risks made possible by

the application of AI. To encourage competition and innovation by giving a flexible membership structure, putting mentorship programs in place, expanding the resources available to startups and small businesses. The federal government bears the task of addressing the effects of AI on labor policy. The labour minister should submit a detailed report on the effects of new interventions on the job market and appraising the aptitude of the national bodies to support workers on labour replacement. This obligation will measure current national programs and offer guidelines for additional legislative efforts for workers impacted. In this lieu, they will develop and share best policy statement to decrease potential vulnerabilities and capitalize on the benefits of AI for businesses. In result, heads will consider these policies in their enterprises. The applicable directives should be delivered in favor of labour return.

In case of USA, the incharge for addressing the likely negative effects of new technologies on the criminal justice system is Attorney General. He is responsible to work in collaboration on civil rights and civil liberties violations linked to AI and current federal legalities. The heads of federal civil rights bureaus gathered by him to talk about algorithmic discrimination and the use of automated systems. It only due to augmenting public campaign on budding inequitable uses and negative effects of AI, accelerating official coordination between the Department of Justice's Civil Rights Division and Federal civil rights offices, and refining more training, technical support, and regulation. Additionally, the he is responsible to provide the head of government with a final report on the use of AI to the criminal justice system, including cases of sentencing as well.

As increasing digitalization is concerned, the federal government should put regulations into place to safeguard civil rights. By requiring that civil rights and civil liberties offices be consulted when making decisions about the use of AI, these guidelines seek to advance equity and civil rights. Additionally, agencies ought to improve their cooperation and communication with state, local, tribal, territorial, academic, business, and civil rights organizations in addition to other stakeholders. Along with encouraging fair administration of public benefits, the secretaries of agriculture and health are also publishing plans and advising public benefit administrators on the application of algorithmic or automated systems. These plans seek to maximize program access for qualified recipients, use

algorithmic or automated systems in a way that aligns with merit systems staff, and pinpoint instances.

To stop AI from being used for hiring in an illegal manner, constitution/laws should be reinforced. The ministry of labor will release guidelines on nondiscrimination in hiring that involve AI and technology-based hiring systems for national contractors. AI tools are encouraged to be used to guarantee adherence to law and guidelines on the use of tenant screening programs and in real estate-related transactions. It is recommended that holding public hearings, technical support, use of transportation and information technology by individuals with disabilities shall be managed. In an effort to safeguard users of AI, including customers, patients, travelers, and students, the government should release a new directive. The directive urges autonomous regulatory bodies to contemplate employing their entire scope of powers to safeguard consumers against deceit, prejudice, and invasions of privacy. It also covers other potential risks associated with AI use, such as those related to financial stability by forming an accountable team to create a strategic plan for the responsible application and use of artificial intelligence and AI-enabled technologies in the human services and health sectors. This strategy will support the responsible application of AI through regulatory action, policies, and frameworks.

The Federal Privacy Council is in charge of assessing and mitigating privacy risks that AI exacerbates, including the gathering and use of personal data by assessing information that agencies have obtained that is commercially available, especially if it contains personally identifiable data. In order to assess agency standards and procedures pertaining to CAI collection, processing, maintenance, use, sharing, dissemination, and disposal, the Council will work in conjunction with the Federal Privacy Council. In order to inform future revisions to the guidelines for implementing the privacy provisions of the E-Government Act of 2002, a request for information will be made. Guidelines for agencies to assess the effectiveness of differential-privacy-guarantee protections, including AI, should be developed by the ministry of Commerce with a research fund (The White House, 2023).

In order to improve the application of AI in its operations and programs, the federal government is putting guidelines into place. To coordinate AI development and use across agencies, the Office of Management and

Budget (OMB) Director will organize and preside over an interagency council. The Director of National Intelligence, the heads of the agencies listed in 31 U.S.C. 901(b), and representatives from other agencies will be on the council. Within 150 days of the directive, the Director of OMB will provide agencies with guidance mandating that they appoint a Chief Artificial Intelligence Officer in charge of overseeing the application of AI, encouraging its innovation, managing risks, and carrying out duties. The guidelines will also include suggestions to lower obstacles to responsible AI use, minimum risk-management procedures for AI that affect people's rights or safety (The White House, 2023).

The federal government should be launching a nationwide talent surge in AI. In collaboration with multiple departments, the directors of OSTP and OMB will determine which mission areas should receive more AI talent, as well as which talent should be recruited and developed first. They will also make sure that this order is implemented appropriately and that the appropriate enforcement and regulatory authorities are used to address any risks associated with AI (The White House, 2023). An AI and Technology Talent Task Force will meet to plan the swift advancement of the Federal AI workforce's capabilities. The Federal Government will hire more AI and AI-enabling talent more quickly and efficiently thanks to the efforts of this task force. The Foreign Minister will spearhead international initiatives to realize AI's promise and overcome its obstacles, working with other agencies in the process. This entails building a solid international framework for managing AI risks, fostering responsible global technical standards for AI development and use, and stepping up interactions with allies and partners across borders. In order to promote the creation and application of consensus standards, as well as collaboration, coordination, and information sharing, he will also oversee the planning of a concerted effort with significant international allies and standards development organizations.

A new directive from the US government mandates the creation of an international strategy for advancing and creating AI standards. AI nomenclature, best practices for data collection, processing, security, privacy, and confidentiality, as well as handling, analysis, assurance, and verification of AI systems, will be the main topics of the plan. Additionally, AI risk management will be covered. The plan, which will be presented to the President in 180 days, will be based on the National Standards Strategy

for Critical and Emerging Technologies of the US Government and the NIST AI Risk Management Framework. In order to integrate the principles of the AI Risk Management Framework into social, technical, economic, governance, human rights, and security conditions outside of US borders, the US government will also publish an AI in Global Development Playbook. Additionally, the US government will create an International AI Study Plan to monitor AI-related explorations abroad (The White House, 2023).

Conclusion

Human agency and the challenge of information civilization demands an interdisciplinary coordination among the fields of ethics, law, computer and social sciences that can help Pakistan in identifying digital gaps and fosters a smooth stable national and international collaboration. A sufficient legislation on privacy and data protection has already been done, yet Pakistan needs to demonstrate equity and transparency principles into legal, federal-parliamentary and constitutional actions in the face of socio-cultural and national complexities of new technologies including AI governance. This involves strict and solid safety mechanisms as well as technology-neutral solutions in the country. Through incorporating global legal insight, current practices on AI governance at federal and administrative level, Pakistan can improve its inter-sectorial and interdepartmental challenges in the future. A vigorous digital framework in Pakistan maintains to balance the techno-pessimism and ensures an explainable, ethical and human-centric AI systems and responsible decision-making process at the national level.

Recommendations

Establishing an AI Ethics Committee: a. Form an interdisciplinary advisory board with experts in the fields of ethics, computer science, law, and social sciences. This committee will help develop legal dimensions for the development, usage, and application of artificial intelligence by providing guidance on the ethical implications of AI in our digital and technological age. This will also ensure inter-sectoral and interdepartmental coordination and collaboration at global level. b. Ethical Guidelines for AI: Create a set of policy principles that consider cultural norms and international best practices. Accentuate that the core principles of ethical

technologies include responsibility, transparency, privacy, equity, and nondiscrimination.

Protection of Privacy and Data: a. Furnish a vigorous charter for data governance that summaries modus operandi for data collection, sharing, accessing, storing, and anonymization for AI applications. Administer legalities on stringent data protection to safeguard individual's right to privacy and in so doing a causal fairness toolkit is important (Plečko & Bareinboim, 2024). b. Data Localization: National security interests and data sovereignty issue be addressed, therefore imposing rules to ensure that personal data collected and utilized by AI systems remains protected.

Accountability and Transparency: a. Algorithmic Transparency: Legal framework necessitating AI algorithms and decision-making processes to be transparent and definable in order to understand the judgments made by AI systems and hold those responsible on case to case level. b. Certification and Auditing: An unbiased third-party audits of AI systems and certification is needed in order to ensure compliance with new standards, legal requirements, and the avoidance of unnecessary amplified biases or novel formations of discrimination (Costanza-Chock et al., 2022).

Impact on Society and Economy: a. Education and Skill Development-prepare work force with the advanced knowledge and skills they need to adapt to the AI-driven economy, support efforts for skill development and allocate funds for AI education. What's more, this will help deal issue with brain drain, the current skill gaps and lessen the probability of job replacement. b. Safety and Liability: Inaugurate precise rules regarding AI safety procedures, liability, and accountability requirements, especially in health, transportation and finance where AI directly affects human agency. Therefore, techno-governance and AI monitoring processes must involve maintaining human oversight in high-risk situations, making sure AI systems are not ambiguous and data and models are neutral and unprejudiced.

Limitations of the Study

This work despite its noteworthy contributions has certain limitations. One significant restriction is the exclusive reliance on official reports and executive orders from various governments at the global level to conduct expedited assessments and create general and broader framework to handle the legal challenges of AI. Most data from law research papers is not

included in this research. Another relevant restriction is the lapse of case to case basis research or reports on negative effects of AI. Even though the current study is conducted utilizing a rapid review methodology, national frameworks for addressing domestic, national, communal and ethno-legal challenges arising from AI must be conducted using practical approaches. The relationship between the law and the effects of AI on local cultures and societies, should be the subject of advanced legal scholarship.

Conflict of Interest

The author of the manuscript has no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

Data availability is not applicable as no new data was created.

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