

# **Decoding Pakistan's National AI Policy 2023**

**July 2023**

## **Executive Summary**

The Artificial Intelligence (AI) policy outlined in Pakistan's Digital Pakistan Vision serves as a transformative foundation for the nation's integration of advanced technologies. It aims to position Pakistan competitively in the era of the fourth industrial revolution and data-driven digitized governments. However, the policy falls short in clearly articulating its objectives and measurable goals, lacking clarity and focus. While it emphasises evidence-based policy formulation and design, incorporating a comprehensive roadmap, accessible databases, and a regulatory framework, it fails to provide explicit and measurable objectives. The requirements for implementation are stated, including the establishment of a National AI Coordination Council, a robust regulatory framework, research and development initiatives, and AI innovation hubs. However, the viability of these requirements depends on the availability of sufficient resources and infrastructure, which may be a challenge. The policy outlines a monitoring mechanism, involving a dedicated unit, regular reports, capacity building, engagement with the private sector, and evaluation processes. Key indicators for assessing programme success are also identified. Major stakeholders involved in policy development include government ministries, industry associations, academia, and technology companies. However, the policy lacks details on ethical considerations, human-centered AI, diversity, and inclusion. It also fails to address the need for reliable and quality data, and mechanisms for developing a skilled workforce. Overall, while the policy sets a foundation for AI transformation in Pakistan, there are loopholes and shortcomings that need to be addressed for its successful implementation and impact.

## **Setting the Stage for AI Transformation in Pakistan**

The Digital Pakistan Vision serves as the foundation for the AI policy, introducing advanced technologies to position the nation competitively in the era of the fourth industrial revolution and data-driven digitized governments. This policy represents a significant milestone in Pakistan's transformation through the utilization of AI. It outlines an ambitious strategy and inclusive framework, enabling the country to actively participate in the development and utilization of AI technologies, thus securing a share in the global emerging technology landscape. The primary objective of this policy is to not only adopt but also redefine AI from a domestic perspective, with a focus on targeting the job market driven by new technological advancements. This approach entails identifying new opportunities for AI and fostering skill development within the country, thereby contributing to the sustainability of the tech industry. It marks the initial step towards the integration of AI in local progress and government sectors. Moreover, the policy aligns with initiatives such as the Citizen Personal Data Protection Act, Cloud First Policy, and Digital Pakistan Policy.

The policy is guided by the following goals:

- Development of a knowledge-based economy centered on AI.
- Creation of a pool of skilled AI professionals in the public sector.
- Establishment of robust and secure AI infrastructure.
- Promotion of international cooperation and public-private partnerships (PPPs) across multiple sectors to drive AI innovation.
- Prioritising the implementation of ethical AI-based solutions.

By pursuing these goals, the policy aims to unlock the full potential of AI for the benefit of Pakistan's society and economy.

## **Content Summary**

The policy articulates the government's commitment to developing a technology-driven ecosystem that fosters the rapid growth of AI and promotes its fair and equitable use. It identifies key areas for managing and investing in AI within the public and private sectors, as well as targeted research areas. The strategy encompasses a range of measures, goals, and steps aimed at positioning Pakistan as an active participant in global AI development, innovation, and education. The policy emphasizes a strategic focus on harnessing AI-powered solutions for growth, progress, and modernization. It seeks to establish regulations that incentivize investments and innovations in the AI sector while recognizing the importance of a regulatory framework to ensure the ethical and responsible use of AI-based solutions, safeguarding individual rights (particularly data protection), and mitigating potential risks. Furthermore, the policy underscores the need to strengthen public-private collaboration to align with international obligations, guidelines, and frameworks. It places significant emphasis on the essential role of training and re-skilling to equip the workforce with the skills required to harness the opportunities presented by AI. The policy focuses on creating an enabling ecosystem that facilitates robust research and

development initiatives to promote, guide, and monitor the operation of AI technologies. It takes into account considerations of safety, security, privacy, governance, and ethics. Through the implementation of this policy, the government aims to establish a thriving AI ecosystem that enables responsible and beneficial utilization of AI technologies for the nation's socio-economic advancement.

### **Policy Content Evaluation**

The aims and objectives for evaluating the content of this policy are as follows:

- To assess the clarity with which the policy content communicates the specified requirements.
- To compare and analyze the differences and similarities between similar policies.
- To gain an understanding of the policy process involved in its formulation.
- To comprehend the strategy for policy implementation and anticipate future developments.

### **Factors of Policy Content Evaluation**

The evaluation of policy content involves considering the following aspects:

- ***Evidence-based policy formulation and design:*** This aspect focuses on ensuring that the policy is grounded in reliable evidence and data, ensuring that decisions are based on a thorough understanding of the subject matter.
- ***Stakeholder interests:*** This aspect examines the active participation, roles, and responsibilities of stakeholders involved in the policy. It aims to ensure that diverse perspectives and interests are considered, fostering inclusivity and effective collaboration.
- ***Circumstances of policy development and discourse:*** This aspect involves considering the contextual factors that influenced the policy's development. It encompasses factors such as political, social, and economic conditions, as well as the discourse surrounding the policy, to understand the broader context within which it was formulated.

### **Policy Content Evaluation Questions**

#### **1. Does this policy shape the goals and objectives clearly?**

At this early stage of AI implementation in the country, the Artificial Intelligence policy document appears to be ***lacking clarity in terms of its stated objectives***. While it provides extensive information on various characteristics and advanced terminologies related to AI, it fails to clearly articulate explicit and measurable objectives. This indicates a need for greater clarity and focus on the subject of AI within the policy.

## 2. What is the evidence-based mechanism of this policy be adopted?

The AI Policy clearly outlines an **evidence-based mechanism** that includes the following components:

- i. **Development of a comprehensive roadmap:** The policy emphasizes the need to create a holistic roadmap that encompasses all relevant aspects for the effective use of AI technologies across various sectors. This includes intentional support and the implementation of appropriate regulations.
- ii. **Utilization of accessible databases and open data:** The policy recognizes the value of leveraging and harnessing available databases and open data to facilitate the implementation of AI-based solutions. This approach aims to enhance the efficiency and effectiveness of AI initiatives.
- iii. **Formulation of a legal and regulatory framework:** The policy underscores the importance of establishing a legal and regulatory structure that enables the creation of laws specifically tailored to support the sustainable integration of AI technologies in the job market. This ensures that AI developments align with legal and ethical considerations.
- iv. **Promotion of public-private partnerships (PPPs):** The policy highlights the significance of fostering collaborations between the public and private sectors through PPPs. This approach encourages the valuable and proficient application of AI, promoting innovation and knowledge-sharing.
- v. **Establishment of a National AI Centre:** The policy advocates for the creation of a dedicated National AI Centre. This centre would serve as a focal point for harmonization, progress, and promotion of AI innovation within the country. Its role would include facilitating collaboration, coordinating research and development efforts, and driving the advancement of AI technologies.

## 3. What are the requirements for implementation clearly stated in the policy?

- i. **The establishment of the National AI Coordination Council:** This council will comprise members from the public and private sectors, working together to ensure a synchronized timeline for the implementation of AI initiatives. It will serve as a central platform for coordinating and aligning AI execution plans.
- ii. **Development of a robust regulatory framework:** The policy recognizes the need for a strong regulatory framework to govern aspects such as data privacy, protection, responsible procedures, and security testing of AI products. This framework will ensure that AI technologies are developed and utilized in a manner that upholds ethical standards and safeguards against potential risks.
- iii. **Enhancing research and development efforts and fostering human capital in AI:** The policy aims to increase investment, encourage actions, and implement a research and development roadmap to promote innovation and the development of human capital in the field of AI. This will involve collaboration with academia and relevant ministries, fostering the growth of expertise and capabilities in AI.

- iv. **Establishing AI innovation hubs:** The policy proposes the creation of AI innovation hubs in partnership with academia, the Ministry of Science and Technology, the Ministry of Information Technology, the Ministry of National Food Security and Research, the Ministry of Power, the Ministry of Climate Change, the Ministry of Defence Production, autonomous bodies, private companies, start-ups, and civil society. These hubs will serve as collaborative platforms to pool resources, design AI models, and promote digital skills, driving innovation and advancement in the field.

#### 4. Are the provisions/requirements feasible given existing resources?

The AI policy aims to address the following requirements:

- i. **Regulatory Body and Global Trends:** The policy commits to establishing a regulatory body that stays updated with global trends in AI. It emphasizes the need for standards, guidelines, and AI governance to ensure ethical and responsible use of AI technologies.
- ii. **R&D Incentives:** The policy promotes an incentive-driven and innovative approach to research and development, particularly through public-private partnerships (PPPs). This approach encourages collaboration between different stakeholders to drive advancements in AI.
- iii. **AI Workplace Models:** The policy encourages the creation and promotion of AI-focused workplace models across various sectors such as health, education, agriculture, energy, environment, transport, public safety, and social services. The aim is to align with global standards in business and organizations.
- iv. **Ensuring Safety and Security:** The policy recognizes the importance of deploying autonomous systems, including automated vehicles, drones, security systems, and combating cybercrimes. It emphasizes the need for measures to ensure their safe and secure operation.

However, it is acknowledged that the current resources may not be sufficient to fully implement the policy at the envisioned scale. Upgrading the existing human resources, allocating monetary resources, and demonstrating a strong political will are essential for initiating and successfully implementing the policy.

#### 5. Does the policy articulate the mechanism for monitoring implementation?

The Government of Pakistan has developed a comprehensive National Digital Transformation Strategy, which includes the formulation of an artificial intelligence roadmap. This strategy aims to create economic opportunities and foster technological growth within the country. To ensure the successful implementation of the AI policy, a monitoring framework has been recommended, consisting of the following measures:

- i. **Establishment of a dedicated monitoring unit:** The government should establish a specialized unit responsible for collecting, analyzing, and reporting on the progress of AI policy goals. This unit will ensure effective monitoring and evaluation of the policy's implementation.

- ii. **Regular public reports:** Regular reports should be circulated to provide transparent information on important progress indicators, including expected timelines and key targets. These reports will keep stakeholders informed about the advancements made in the implementation of the AI policy.
- iii. **Capacity building initiatives:** Capacity building activities should be conducted to enhance knowledge, understanding, and skills among policymakers, implementers, and relevant stakeholders. This will help them effectively navigate and contribute to the AI ecosystem.
- iv. **Engagement with the private sector:** The government should establish a platform for engaging with the private sector to gather valuable feedback and insights on the successful execution of the AI policy. This collaboration will foster a supportive environment for AI initiatives.
- v. **Evaluation process and impact support:** The government should implement an evaluation process for AI projects to assess their effectiveness. Additionally, support should be provided to measure and analyze the impacts generated by AI initiatives.

## 6. Does the policy identify indicators for assessment of program success?

Yes, AI Policy sketches out **key indicators to assess** the policy success. These indicators are identified in four categories: Performance and Governance; Economic Development; Research, Development and Innovation; and Human Capital Development. These key indicators will offer a perspective of the progress made, both qualitative and quantitative, to the successful completion of the AI policy.

## 7. Which major stakeholders played a role in the policy's development?

The **major stakeholders involved in the development** of Pakistan's Artificial Intelligence Policy include the Ministry of Planning, Development and Special Initiatives, the Federal Board of Revenue, the Ministry of Science and Technology, the Ministry of Information Technology and Telecommunications, the Pakistan Council of Scientific and Industrial Research, the Higher Education Commission of Pakistan, Pakistan Telecommunication Authority, Pakistan Software Export Board, the National Information Technology Board, the National Academy of Sciences, the Pakistan Computer Association, the Pakistan Software Houses Association, professional bodies and associations of IT and AI related disciplines, private sector companies, start-ups, and industry associations. Other stakeholders include industry heads, leading international technology firms, academia, industry professionals, NGO's, research and development units, and regulators.

## 8. What type of threats, challenges and resistance exists in AI policy implementing discourse?

- i. There is lack of essential infrastructure and available sufficient resources (financial, technical and trained workforce) in the country and this situation is a serious challenge to execute a successful AI policy.

- ii. Cyber security is a foremost alarm in the age of AI. Any AI policy must have embraced the necessary procedures and mechanism for protection of digital data and security of personal information from malevolent actors.
- iii. Cultural resistance may become a barrier and some sort of resistance to integrate AI into day-to-day business in the successful implementation of AI policy.
- iv. Ethical and moral values like security protocols and data privacy are core concerns of any AI systems. Data leak, data theft, and illegal access to personal data from government database are serious threats to AI policy.

There are two aspects that require further evaluation and questioning:

- i. ***Tone and Language of the Policy:*** It is important to interpret the tone and overall language of the policy to gain a deeper understanding of its intent and significance. By analyzing the choice of words, the policy's tone can provide insights into its approach, whether it is visionary, cautious, ambitious, or pragmatic. Understanding the language used in the policy can help uncover the policy's priorities and objectives.
- ii. ***Comparison with Existing Policies and Government Actions:*** To examine potential conflicts or similarities, it is essential to compare the AI policy with existing policies and government actions related to digitalization. This includes evaluating policies such as the Personal Data Protection Act, Digital Pakistan Policy, Pakistan Cloud Policy, and Pakistan IT Policy. By conducting this comparison, it is possible to identify areas of overlap, alignment, or potential conflicts among these policies. It is also important to consider government actions that may disrupt digitalization, such as internet service shutdowns or cryptocurrency bans, and assess how they align or contradict the objectives outlined in the AI policy.

### **Shortcomings/Loopholes**

There are certain loopholes and shortcomings in the draft of the AI policy.

1. The policy shows seriousness in exploiting the economic prospects and creating new job-oriented markets for AI. However, it lacks adequate details on the ethical concerns needed to ensure human-centered AI. AI has the potential to impact the ethical and just characteristics of individuals and social deliberation. The policy should emphasize the importance of understanding Web 3.0 technologies like blockchain, which are crucial for creating AI-led governance systems. Globally, AI is evolving and transforming rapidly, with use cases and impacts that go beyond economic prospects. The policy lacks clear identification of these "economic prospects" and remains generalized and scattered. It fails to highlight the mitigation of the impacts of this AI policy on small-scale or cottage industries, leaving it as a gray area for innovation and leaving these industries vulnerable. Additionally, important questions arise: Will AI increase productivity? Improve decision-making in the economic space?



Who are the beneficiaries, and who stands to lose? Better AI solutions to problems will result from step-by-step prioritization of targeted socio-economic aspects that the policy aims to transform.

2. In addition, there is a missed viewpoint as the policy does not clearly state the need to incorporate diversity and inclusion in the promotion of AI solutions. Diversity and inclusivity are considered vital forces for the development and deployment of ethical AI solutions. Currently, Pakistan is yet to fulfill its digital transformation, creating a digital divide that may deepen with the uneven promotion of AI in different parts of the country. While internet users in Pakistan have increased by 22 million between 2021 and 2022, internet disruptions and a lack of digital infrastructure may hinder the adoption of AI processes.
3. For efficient and effective growth of AI, there is a dire need for reliable, real-time, and quality data from various sources. The insufficient and controlled availability of quantified data raises concerns about the implementation strategy of this AI policy in different public sectors such as agriculture, climate, energy, education, health, and the IT industry.
4. The policy highlights the need for a re-skilled workforce, but there is no mechanism outlined for preparing a capable workforce to foster AI progress. There has been a massive brain drain in recent years, resulting in negative growth in the AI sector. Pakistan has a large pool of talented youth who require robust skills, training, and education to enable AI in the country. The policy only highlights the literacy rate of the country, which is alarming as AI adoption requires a highly skilled and specialized workforce that is also connected to the global debate and studies on AI and emerging technologies.
5. The policy talks about local and domestic targets for AI solutions, but it overlooks the strength of internet and communication systems in far-flung areas and war zones. Additionally, the policy does not consider the language barrier and the need for localized contexts. AI solutions must be tailored to provide real socio-economic benefits, requiring rigorous research and studies to be translated into local languages and disseminated with local awareness.
6. Currently, there is no open forum or public entity in the country dedicated to fostering collaborative and informative allocation among AI participants.
7. There appears to be a lack of strategy due to the economic challenges faced by the state, which restrict resource allocations and funds for the installation and adoption of the AI market.
8. There is an absence of a regulatory body to provide legal and regulatory support for the nascent policy at this stage. Although the policy emphasizes a regulatory framework with international collaborations, regulators and monitors are still in the understanding stage regarding the connotations and formulation of the regulatory framework to implement the policy effectively. In the absence of proper AI policy regulations, businesses may face complications in adhering to industry-wide principles and values. A surface-level understanding of AI and its impacts on society, governance, and public policy may not be sufficient. Currently, there is no such Global AI Observatory that maintains a pool of AI

knowledge, models, or data to provide better guidance for decision-makers to avoid AI-induced risks. The policy needs to be flexible in adapting to the ever-changing nature of AI. The challenge lies in identifying the level of benefits versus the level of risks associated with AI. Moreover, the policy's lack of prioritization of socio-economic issues may lead to a securitization of AI. Phasing out socio-economic priorities and projects, rather than scattered and generalized advocacy and awareness campaigns, may help leverage the benefits of AI better for the people.

## **Recommendations**

- The established goals of this AI policy should align with economic competitiveness, job creation, advancements in education, and social welfare.
- The gathered data must be analyzed to support the established goals, including facts and figures about the current state of Artificial Intelligence and its potential in Pakistan.
- The analyzed data should address the policy proposals and objectives. The policy proposal includes a thorough plan of action as well as potential regulations and restrictions pertaining to the progress of AI.
- Lay out the direction and action plans to incentivize schemes and encourage private businesses, fund innovative start-ups, and invest in AI research and development projects such as smart cities, machine learning, drones, automated vehicles, and robot nurses.
- Establish a local pool of industry experts, policymakers, and stakeholders from both local and global spaces to build upon the knowledge and practice of AI. Embrace AI and blockchain technologies to leverage effective e-governance. Instead of creating physical infrastructures, as mentioned in the policy, such as a Centre of Excellence for market enabling, the focus may be shifted to a computing infrastructure that enables connectivity through 5G networks.
- Conduct pilot research on Pakistan's potential for AI adoption and learn from models and strategies implemented by countries like India. The Government of Pakistan will have to play the role of an enabler more than a regulator for the effective implementation and continuation of the AI policy.
- Awareness and advocacy campaigns must target a diverse audience, including non-technical audiences such as policymakers themselves.
- Create a separate policy draft on the digitalization of national security and cybersecurity concerns.

## **Conclusion**

Pakistan AI Policy is an all-inclusive document, a good start, and a significant step towards focusing on the development of an AI-enabled ecosystem. The policy aims to promote ventures in the AI sector with quality and reliable data for optimal AI outcomes. The determined goals to establish a "strategic focus" on AI and skills development in the country are admirable.

It can be enhanced with more in-depth debates on ethical considerations and the value of diverse voices. This will help inspire confidence that AI is developed and deployed responsibly, in a manner that harnesses its potential to benefit all of Pakistan as a nation.

## About Authors

**Dr. Aneel Salman**, Chair of Economic Security at the Islamabad Policy Research Institute (IPRI). He is an international economist specialising in economics security, macroeconomics, policy-making, international trade, and climate change. His research focuses on understanding the economic implications of climate change, formulating effective policies, analysing macroeconomic indicators, and studying international trade dynamics. Dr. Salman's expertise contributes to evidence-based strategies for sustainable economic development and enhancing economic security.

**Muhammad Asfand Yar** is a PhD scholar and Public Policy Analyst.

## Acknowledgement

We express our gratitude to **Talha UI Huda**, Advocacy & Media Specialist at IPRI, and **Javairyah Aatif**, Digital Media Specialist at IPRI, for their valuable contributions to this policy analysis.