PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

Knowledge Brief

No. 2025:136 | November, 2025

Will AI Transform Pakistan?

Assessing the 2025 National Policy

Wajid Islam
Research Economist, PIDE

Executive Summary

Pakistan has launched its AI policy 2025 in a very timely manner. The policy revolves around six main pillars: providing an AI Innovation ecosystem, mass awareness and readiness, a secure AI ecosystem, the transformation and evolution of various sectors, establishing nationwide AI infrastructure, and promoting international collaboration and partnership in the field of AI. If implemented in its true soul and spirit, the country can gain the most from it. Notably, it has the potential to increase GDP growth from 7% to 15% by 2030, depending on the level of adaptation. Furthermore, the policy can revolutionize various sectors such as agriculture, industry, and services, improving agriculture by $12 billion, industry by $5 billion, and services by $26 billion. However, to achieve these outcomes, existing gaps in the policy must be addressed. These include challenges in implementation, funding and infrastructure constraints, regulatory weaknesses, human capital limitations, and overly ambitious expectations. To overcome these, the policy can be strengthened by slightly increasing the R&D fund to 0.5% of GDP, utilizing already available resources like TVET, initiating pilot projects, and enacting better laws for privacy and data security.

Background

Artificial intelligence is no longer science fiction, it has turned into a stern reality. At the moment, it is shaping every aspect of life from healthcare to agriculture and financial decisions. Countries all over the world are adopting it for a smooth transition from their conventional systems to the modern ones. That is why major economies like the US, UK, EU, China and India have formulated their AI policies. Keeping this past growing trend of AI in view, Pakistan has also formulated its own AI policy in 2025. It is a very good effort at placing the AI in its national agenda for the improvement of health, agriculture, education and the overall sector of the government.

The policy emphasizes the development of a competitive and knowledge-based economy while keeping ethical and inclusive growth in view. There is no doubt that this policy can prove a turning point in transforming the country's entire scenario if it is properly implemented. However, there

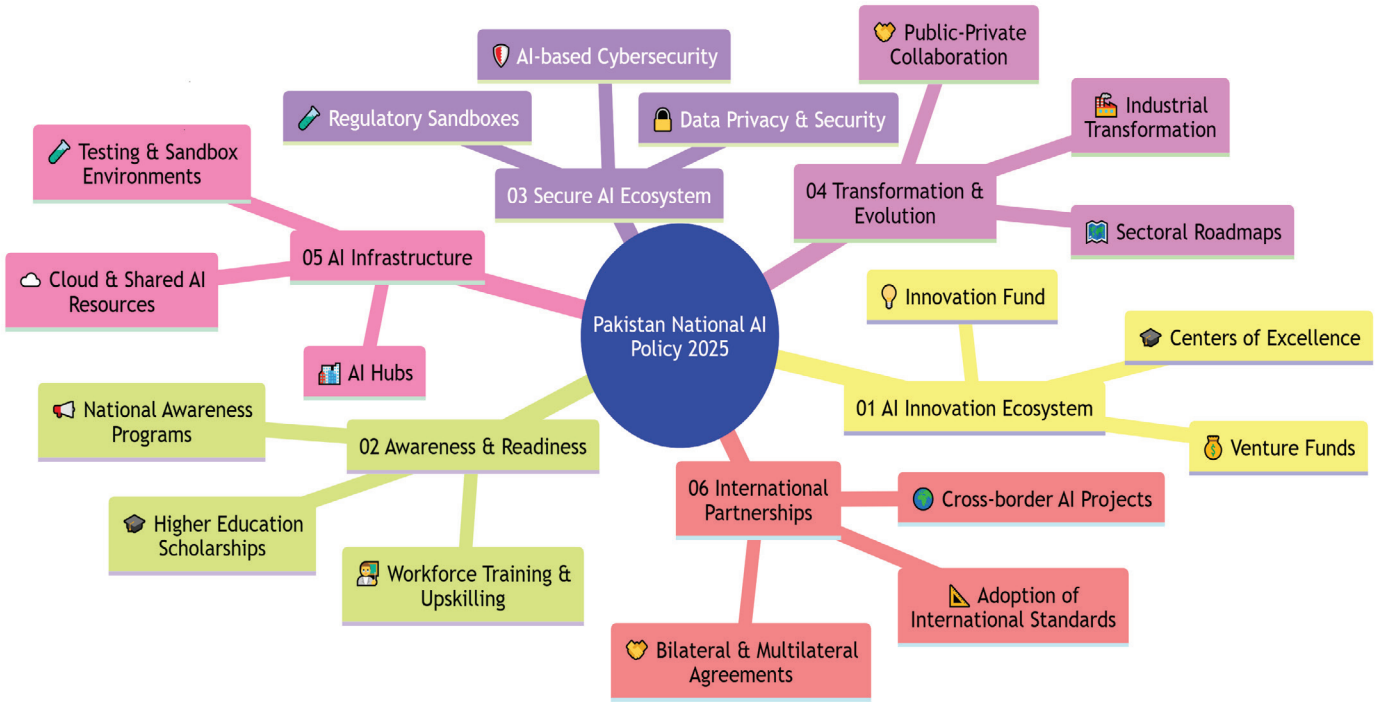
are several stumbling blocks that can make the implementation part a little difficult. Some of these are the shortage of basic infrastructure, the lack of internet connectivity and the paucity of electricity, inclusivity and proper regulations. Pakistan can overcome these barriers by giving proper attention and allocating resources to it. Also, learning from the experiences of other countries can also do the trick.

Components of Pakistan's National AI Policy (2025)

The policy consists of six key pillars, provided below:

1. The first pillar is about the establishment of an AI Innovation ecosystem. It will support research, AI entrepreneurs and industries, to promote AI-driven solutions with the help of National Artificial Intelligence Fund (NAIF) and AI Centres of Excellence.
2. The second pillar of the policy is about awareness and readiness. It aims to elevate Pakistan as a world leader in AI readiness by 2035. It aims to train one million professionals and 10,000 new trainers by 2027.
3. The third pillar talks about a secure AI Ecosystem. An AI directorate will be established to provide regulatory guidelines for the possible spread of misinformation, data breaches and privacy and establishing sandboxes.
4. The fourth pillar is about transformation and evolution. It aims to transform various sectors like education, health governance, and record digitization, making quick decisions in ministries.
5. The fifth pillar discusses the establishing of AI infrastructure nationwide. The purpose is to improve computational power for large scale implementation for processing data and training AI models.
6. The last pillar discusses international partnerships and collaboration in the field of AI. It also stresses on the adaptation of international AI standards.

Figure 1: Mind map of Pakistan's AI policy



Analysis of the Policy

Pakistan AI policy 2025 is a very timely move. With a 64% young population, Pakistan can benefit the most by adopting AI in different sectors. The policy covers all the important aspects. It focuses on the transformation of important sectors of the economy. Moreover, it is youth-centric and provides potential of entrepreneurship and employment opportunities. Pakistan can benefit from the upskilling of its immigrants for the global market, especially for the GULF countries. The policy cover all the aspects from individual to government level.

However, there are some weaknesses in the policy that make the implementation difficult at the moment. The lack of digital infrastructure in the country is the greatest issue. Similarly, internet connectivity and electricity shortage along with funding are some of the major impediments. But these weaknesses do not mean that the policy could not be implemented. Proper steps should be taken in the right direction because Rome was not built in a day. This policy can work if proper steps are taken.

Below in the table some strengths and imitations of the policy are given:

Table 1: Pakistan's AI Policy Analysis

Strengths	Limitations
Strategic Vision **• Recognizes AI as a key driver of economic and technological growth.** **• Integrates AI into education and national curricula.** **• Supports patents and domestically developed technologies.**	**Implementation Gaps** • Goals are ambitious but weak institutional and legal framework. • Unclear governance of the National AI Fund. • Absence of a dedicated AI law or regulatory authority.
Structured Policy Framework **• Defines six core pillars with measurable targets.** **• Aims to train one million individuals by 2030.** **• Proposes Centers of Excellence and a National AI Fund.**	**Funding & Infrastructure Constraints** • Limited financing (only 0.2% R&D share). • Weak compute power, data centers, internet, and electricity infrastructure. • Implementation delays—key committees yet to be formed.
Ethical & Legal Awareness **• Emphasizes fairness, accountability, transparency, and data protection.** **• Upholds human rights and the rule of law in AI governance.**	**Regulatory Weakness** • Ethical principles exist but no enforcement or oversight mechanism. • Pending Personal Data Protection Bill (2023) not yet implemented. • Poor track record on data privacy and surveillance concerns.
Collaborative Ecosystem **• Promotes public–private–academic collaboration.** **• Links R&D with industry and supports local startups.** **• Encourages innovation-led entrepreneurship.**	**Human Capital Limitations** • Overly ambitious training goals (e.g., 100% public servants by 2027). • Weak digital literacy and education infrastructure. • Shortage of AI-skilled professionals.
Inclusive Development **• Focus on women, youth, and underserved regions.** **• Seeks broader digital inclusion and equitable access.**	**Equity Challenges** • Digital divide persists between urban and rural areas. • Connectivity gaps may exclude marginalized communities. • Risk of benefits concentrating in elite circles.
Global Outlook **• Encourages international partnerships and alignment with global AI standards.** **• Aims to attract foreign direct investment (FDI) and build credibility.**	**Investment Uncertainty** • No clear incentives or guarantees for investors. • Weak coordination and governance limit investor confidence.
Sectoral Transformation Vision **• Targets AI adoption in education, health, governance, and climate resilience.** **• Encourages data-driven policymaking and digital transformation.**	**Practical Limitations** • AI is not a silver bullet for systemic issues. • Bureaucracy, red-tape, and weak digitization hinder progress. • Lack of accountability in AI-assisted decision making.

Source: Author Formation

AI Canvas of the World

Globally, the trend of AI is in upward trajectory. Big players are investing heavily in the field of AI. According to Stanford AI index (2025), corporate AI investment has reached to $252.3 Billion in 2024, recording highest growth of 26% as compared to the previous year. Out of this investment the share of private investment climbed by 44.5%, while the merger and acquisitions witnessed 12.1% growth as compared to the previous year. Similarly, investment in generative AI raised by 18.7%, representing almost 20% of all the AI related private investment. Such huge investment in a very short span highlights the significance of AI in the coming time.

The top most investor in 2024 is the US by investing hefty sum of $109.1 billion, followed by China $9.3 billion, UK $4.5 billion and EU+Uk $25.4 billion. The survey conducted by Stanford found that large organizations have reported 78% use of AI in some ways in their business functions. Organizations also stated that AI has reduced it cost up to 5%, though it will improve with the passage of time.

Table 2: Comparative Analysis of Pakistan's Ai policy with UK, EU, US, China & India

Country / Region	Year / Status	Main Aims	Regulatory Approach	Ethics / Rights / Privacy	Funding & Targets	Public Sector Focus
Pakistan (2025)	Approved 2025	Train 1M professionals, 1,000 AI products, 50K civic projects	Policy-led, limited legal detail	Mentions ethics & cybersecurity; lacks enforceable standards	AI Innovation Fund, AI Venture Fund	Strong civic AI targets (health, governance)
UK	National AI Strategy (2021)	Support research, commercialization, and public sector use	Light-touch, institution-driven	Ethical frameworks, inclusion	Public R&D investment	Active public-sector adoption
EU	AI Act (2021–25)	Trustworthy, rights-based AI	Hard law; risk-based regulation	Strong human oversight & transparency	Horizon & Digital Europe funds	Tight rules on high-risk AI use
USA	National AI Initiative (2020)	Innovation & civil rights balance	Agency-led, flexible	Ethical guidance (OSTP Blueprint)	Large R&D budgets (NSF, DOE, DoD)	Encourages adoption, protects rights
China	Next-Gen AI Plan (2017)	Global leadership, industrial AI	State-led, central planning	Ethics secondary to national goals	Heavy infrastructure investment	Large-scale deployment across sectors
India	NITI Aayog Strategy (2018)	AI for social good (health, agri, edu)	Standards-oriented, sectoral	Responsible & inclusive AI	Govt–industry partnerships	Focus on social-impact projects

Source: Author Formation

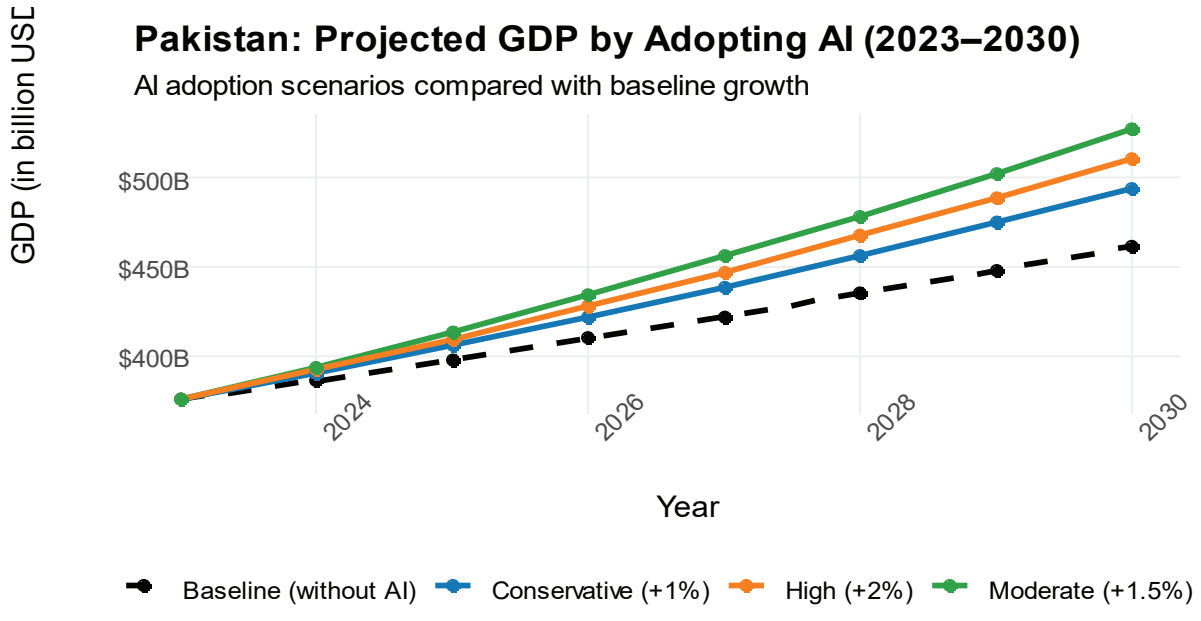
Table 3: Institutional Architecture of Pakistan's National AI Policy 2025

AI Policy Pillar	Lead / Responsible Institutions & Agencies	Coordination Gaps / Overlaps
1. AI Innovation Ecosystem	Ignite Technology Fund, Centers of Excellence in AI (CoE-AI), Ministry of IT & Telecommunication (MoITT), Higher Education Commission (HEC), Private Sector Partners	Overlap between MoITT and HEC on research funding and curriculum development. Limited private-sector engagement in policy implementation. Need for a unified coordination cell within MoITT.
2. Awareness and Readiness	CoE-AI, Virtual University, NAVTTC, HEC, Ministry of Education, Ehsaas, Bait-ul-Maal, Provincial Governments	Multiple actors working on digital literacy without a centralized monitoring framework. Weak vertical coordination between federal and provincial TVET systems.
3. Secure AI Ecosystem	National Commission for Data Protection (NCPDP), AI Directorate, SECP, MoITT	Regulatory functions fragmented between MoITT, SECP, and NCPDP. Absence of a harmonized national framework for data governance and cybersecurity.
4. Transformation and Evolution	CoE-AI, National IT Board (NITB), Provincial IT Boards, HEC, Sectoral Ministries (Health, Agriculture, Education, Energy)	Horizontal coordination challenges among sectoral ministries. Lack of clear reporting lines between CoE-AI, NITB, and provincial bodies.
5. AI Infrastructure	MoITT, NITB, CoE-AI, NCPDP, SECP, Public and Private Data Centers, Provincial Governments	Overlapping roles between MoITT and NITB in cloud and data infrastructure. Fragmented ownership of digital infrastructure; no single lead agency for interoperability standards.
6. International Partnerships and Collaborations	MoITT, Ministry of Foreign Affairs, HEC, CoE-AI, Private Sector / Industry Associations	Coordination gap between MoITT and MoFA on international MOUs and research cooperation. Limited institutional mechanism for monitoring partnership outcomes.

Source: Author Formation

What Pakistan can Gain from AI

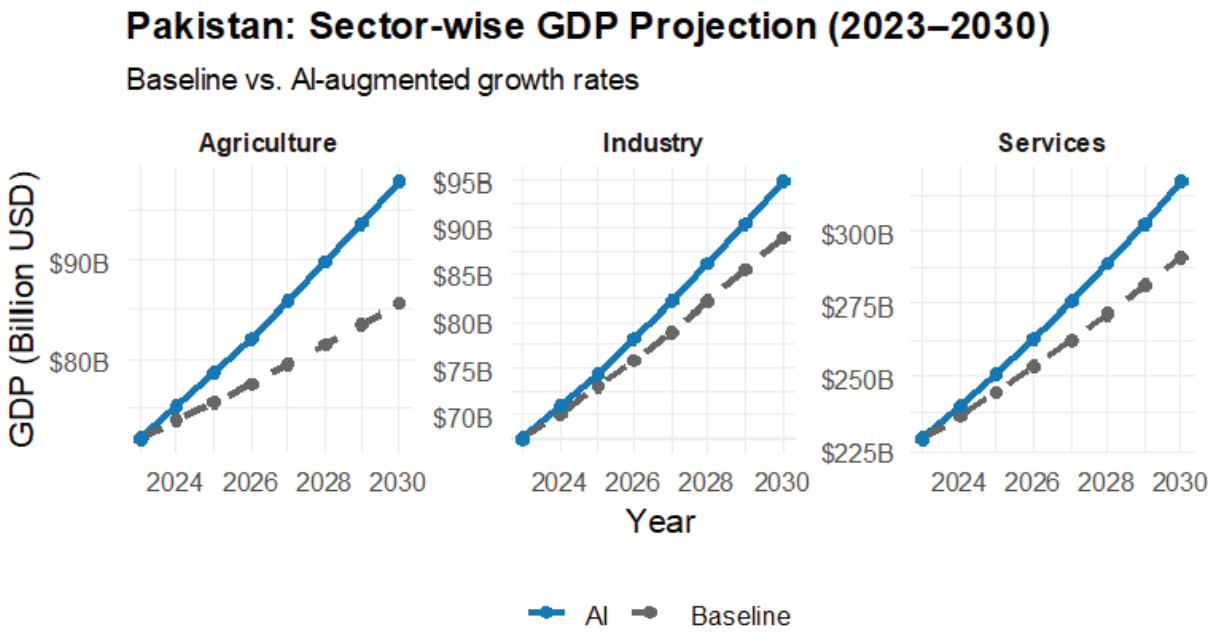
The AI has the potential to transform the economy and boost the GDP drastically. If Pakistan adopt AI conservatively it can bring a change of 1%, in that case it can improve the economy by 7 to 8% till 2030. If adoption is moderate then it can improve growth by 10-12%, in the case of high adaptation rate of bringing 2% increase in its TFP, the economy can be boosted by 12 to 15% i.e. by $40 to $50b.



S

Source: Author's Projections[1]

The graphs below show the sectoral gains from adopting AI policy in agriculture, industry and services sector.



Source: Author's Estimates[2]

Policy Recommendations

1. The country needs to double the R&D fund from the current 0.2% of GDP to 0.5%. It will help to divert much funds for the establishment of an affective AI innovative ecosystem.
2. There is no need of spending on establishing new center of excellences. The already available infrastructure of TVET and NEVTTAC should be developed. It will not only reduce the cost but also bring positive change in a short span.
3. It is the urgent need of hour to legislate proper laws and ensure the privacy and security of data.
4. The policy is over-optimistic by training thousands of people and transforming various sectors. Instead some pilot project should be carried out and on the basis of its success it should be expanded. It would be cost effective and more convincing for adaptation for various stakeholders.

Conclusion

Pakistan's National AI policy (2025) can be a game changer for its 64% young population, if it is properly implemented. The country can be turned into a regional AI leader by adopting the modern AI system in its true soul in spirit. However, without resolving the issues of funding, infrastructure and ethical enforcement, the policy cannot leave a substantial mark. By leveraging its young population and digital potential the country can transform this opportunity into a real result oriented outcomes. The time will determine that has Pakistan taken any decisive action to transform this policy into reality or missed another golden opportunity toward progress and prosperity.

1. * (α≈0.30 for developing economies, Base (2023) GDP = $375 billion, Baseline annual GDP growth (no AI) = 3.0%, AI adds to annual growth scenarios: 1%, 1.5% & 2%)
2. (potential improvement By AI in Agriculture=20–30% yield gain , Industry =15–20% productivity improvement(PwC), services= 10–12% efficiency gain(OECD))

References

1. European Union (2024). Artificial Intelligence Act (AI Act). Official Journal of the European Union.
2. Government of Pakistan (2025). National Artificial Intelligence Policy 2025. Ministry of IT and Telecommunication, Islamabad.
3. Government of the United Kingdom (2021). National AI Strategy. Department for Science, Innovation and Technology.
4. OECD. (2024). OECD digital economy Outlook 2024 (Volume 1). OECD Publishing.
5. PwC. "AI-Driven Automation in Manufacturing." PwC, www.pwc.com/ai-automation-manufacturing.
6. NITI Aayog (2018). National Strategy for Artificial Intelligence: #AIforAll. Government of India.
7. Stanford University. (2025). The 2025 AI Index Report. Stanford Institute for Human-Centered Artificial Intelligence. https://hai.stanford.edu/ai-index/2025-ai-index-report
8. United States Government (2020). National AI Initiative Act. Washington, D.C.