Wah Academia Journal of Social Sciences
Volume 4, Issue 2, Dec 2025, pp. 1205-1229
ISSN – E 2958-8731 P 2958-8723
https://doi.org/10.63954/WAJSS.4.2.58.2025

Bridging the Gap: Reforming Pakistan's Legal Framework for Artificial Intelligence Governance Through Comparative Analysis of Australian and German Regulatory Models

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Abstract

Artificial intelligence is reshaping global economies and governance structures, yet Pakistan remains without dedicated AI legislation, operating instead within a fragmented regulatory vacuum. This article conducts a comparative analysis of two divergent regulatory paradigms: Australia's voluntary, principle-based approach and Germany's legally binding framework under the European Union AI Act. Drawing on policy documents, draft legislation, and expert analyses from 2025–2026, the study evaluates each model's applicability to Pakistan's socio-legal context. The analysis reveals that while Australia's "soft law" approach offers agility and reduced compliance burdens; its recent policy retreat creates dangerous uncertainty. Conversely, Germany's risk-based mandatory framework provides robust accountability but requires significant institutional capacity. The article proposes a hybrid "phased sovereignty" model for Pakistan: an initial regulatory sandbox phase enabling innovation under supervised conditions, transitioning toward mandatory guardrails for high-risk applications, underpinned by a National AI Directorate. The findings contribute to the growing discourse on Global South AI governance and offer actionable recommendations for policymakers navigating the tension between innovation imperatives and constitutional accountability.

Keywords: Artificial Intelligence Governance, Regulatory Frameworks, Pakistan Legal Reform, Comparative Law, EU AI Act, Risk-Based Regulation

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Introduction

The rapid proliferation of artificial intelligence technologies presents an unprecedented challenge to legal systems worldwide. From algorithmic credit scoring to automated administrative decisions, AI systems are increasingly exercising power that traditionally required human judgment and legal accountability (Bank Indonesia, 2025). Pakistan, a nation of over 240 million people undergoing rapid digital transformation, finds itself at a critical juncture: governance frameworks for frontier technologies remain nascent, even as AI deployment accelerates across public and private sectors (Ministry of Information Technology and Telecommunications, Pakistan, 2023).

This governance deficit carries profound constitutional implications. The Islamabad AI Declaration of February 2026 articulates a principled commitment to "accountable systems" and affirms that "decisions affecting citizens will remain under accountable human oversight" (Associated Press of Pakistan, 2026, para. 4). Yet principles without enforcement mechanisms risk becoming symbolic rather than transformative. The gap between policy aspiration and legal implementation represents what this article terms Pakistan's "AI governance gap"—the chasm between acknowledged necessity and operational reality.

Two distinct regulatory philosophies have emerged internationally. The Australian model, initially moving toward mandatory guardrails for high-risk applications, has recently retreated to voluntary frameworks, emphasizing innovation and adoption over binding constraints (Barrett, 2025). The German model, implementing the EU AI Act through the proposed AI Market Surveillance and Innovation Promotion Act (AI-MIG), embraces comprehensive mandatory regulation based on risk categorization, centralized enforcement, and significant financial penalties (HEUKING, 2026). These contrasting approaches offer Pakistan a valuable comparative lens.

This article advances three central arguments. First, Pakistan's current regulatory vacuum—neither voluntary principles nor binding rules—represents the worst of both worlds, creating uncertainty for investors and inadequate protection for citizens. Second, Australia's recent policy reversal demonstrates the fragility of voluntary approaches absent legislative backing. Third, Germany's model, while institutionally demanding, provides the essential elements—risk categorization,

centralized enforcement, and accountability mechanisms—that Pakistan should adapt rather than adopt wholesale.

The analysis proceeds as follows: Section 2 examines Pakistan's current AI governance landscape. Section 3 analyzes Australia's voluntary framework and its recent policy reversal. Section 4 examines Germany's legally binding model under the EU AI Act. Section 5 conducts comparative analysis. Section 6 proposes a hybrid framework for Pakistan. Section 7 concludes with recommendations.

Pakistan's AI Governance Landscape: Policy without Law

❖ The Current Legal Vacuum

Pakistan presently lacks any legislation specifically addressing artificial intelligence. The regulatory environment consists of fragmented, sectoral provisions that inadequately address AI's distinctive challenges. The draft National AI Policy (2023) acknowledges this deficit, observing that "there is no provision for regulating AI at the moment" (Ministry of Information Technology and Telecommunications, Pakistan, 2023, p. 15). This acknowledgment is itself significant: policymakers recognize the gap but have yet to fill it.

The Personal Data Protection Bill, pending for several years, would establish a National Commission for Data Protection, but even its passage would address only one dimension of AI governance—data privacy—leaving algorithmic bias, transparency obligations, liability allocation, and accountability mechanisms unregulated (Future of Privacy Forum, 2024). The Securities and Exchange Commission of Pakistan (SECP) offers a regulatory sandbox for specific financial applications, but this remains narrow in scope and voluntary in nature (Bank Indonesia, 2025).

This vacuum creates multiple pathologies. For businesses, legal uncertainty deters investment and complicates compliance planning. For citizens, inadequate remedies exist when algorithmic decisions cause harm. For regulators, the absence of statutory authority precludes effective oversight. As Senator Anusha Rahman Khan recently observed, "the governance frameworks are still being written," making this "a decisive moment for policymakers" (Rahman, 2026, para. 3).

❖ Policy Aspirations: The Islamabad AI Declaration

February 2026 marked a significant policy milestone with the adoption of the Islamabad AI Declaration following Indus AI Week. The declaration articulates five core principles: public value, trusted data stewardship, accountable systems, sovereignty, and global leadership (Associated Press of Pakistan, 2026). It explicitly commits to human oversight, stating that "AI will augment human capacity rather than replace lawful authority" and that "decisions affecting citizens will remain under accountable human oversight, supported by due process and institutional responsibility" (Associated Press of Pakistan, 2026, para. 5).

Data sovereignty emerges as a central pillar: "national, state and citizen data will remain governed under Pakistan's laws and sovereign interests" (Associated Press of Pakistan, 2026, para. 6). The declaration also endorses a "use-case-first" approach, deploying AI technologies only "where they demonstrably improve economic productivity, service delivery, operational efficiency and decision-making" (Associated Press of Pakistan, 2026, para. 8).

These principles represent meaningful normative commitments. However, declarations are not statutes. Without implementing legislation establishing enforcement mechanisms, institutional responsibilities, and remedies for violation, the declaration risks functioning as what one analyst terms "symbolic rather than transformative" governance (Barrett, 2025, p. 4).

❖ Institutional Infrastructure Proposals

The draft National AI Policy proposes several institutional mechanisms. The National AI Fund would support research and development initiatives nationwide (Ministry of Information Technology and Telecommunications, Pakistan, 2023). Centers of Excellence in AI (CoE-AI) would be established in Karachi, Lahore, and Islamabad, with auxiliary centers in Peshawar, Quetta, Multan, Faisalabad, and Gilgit, providing "high-tech compute infrastructure, labs and testbeds" (Ministry of Information Technology and Telecommunications, Pakistan, 2023, p. 24). Critically for regulatory development, these centers would assist "the regulator in organizing sandbox and other regulatory measures for the responsible use of AI" (Ministry of Information Technology and Telecommunications, Pakistan, 2023, p. 25).

The policy also contemplates an "Agile Regulatory Ecosystem" specifically referencing AI regulatory sandboxes, to be established by 2025 (Ministry of Information Technology and Telecommunications, Pakistan, 2023, p. 31). More ambitious is the proposed $1 billion National AI Ecosystem Development Program (NAIEDP) for 2026–2031, which includes "sovereign storage and processing of national data" and the development of "a national language and AI system trained on local datasets" (TechJuice, 2026, para. 2).

Yet institutional infrastructure without legal authority produces hollow structures. A Center of Excellence cannot impose binding obligations. A regulatory sandbox operating without statutory backing lacks enforcement power. The gap between proposed institutions and legal empowerment remains unbridged.

- **The Governance Gap Diagnosed**

Pakistan's situation can be characterized as "policy-rich, law-poor." The government has articulated sophisticated principles, proposed substantial investments, and signaled commitment to responsible AI (Associated Press of Pakistan, 2026). What remains absent is a legally binding framework establishing:

Risk categorization: Mandatory classification of AI applications by risk level, with corresponding obligations

Transparency requirements: Legal duties to disclose AI use and explain algorithmic decisions

Accountability mechanisms: Designated responsible persons, audit rights, and liability allocation

Enforcement authority: A regulator with powers to investigate, sanction, and order remedies

Redress systems: Accessible mechanisms for individuals harmed by AI systems

This gap creates what this article terms a "regulatory trilemma": Pakistan cannot simultaneously achieve innovation promotion, citizen protection, and legal certainty without legislative action. Voluntary approaches may support innovation

but fail at protection and certainty. Binding regulation may provide protection and certainty but risks constraining innovation if poorly designed. Resolving this trilemma requires careful institutional design drawing on international experience.

Australia's Voluntary Framework: Lessons from Policy Retreat

- **The Original Trajectory: Towards Mandatory Guardrails**

Australia initially appeared to be moving toward comprehensive AI regulation. In November 2019, the government published its AI Ethics Framework, establishing eight voluntary principles: human, societal and environmental wellbeing; human-centered values; fairness; privacy protection and security; reliability and safety; transparency and explainability; contestability; and accountability (Barrett, 2025). These principles, while non-binding, provided normative guidance for organizations developing or deploying AI systems.

In June 2023, the Department of Industry, Science and Resources (DISR) initiated a public consultation on "Safe and Responsible AI in Australia," explicitly seeking input on "potential governance and regulatory approaches to manage the risks of AI" (Barrett, 2025, p. 6). The discussion paper presented a spectrum of options, from voluntary guidelines to legislative action. The subsequent January 2024 "Interim Response" acknowledged that existing laws were insufficient and proposed "mandatory guardrails" for high-risk applications in three areas: testing, transparency, and accountability (Barrett, 2025).

This trajectory suggested Australia would adopt binding regulation for high-risk AI, following the EU model while maintaining flexibility for low-risk applications. The proposed mandatory guardrails included internal and external testing, ongoing auditing, public reporting on system limitations, and designated roles with responsibility for AI safety (Barrett, 2025).

- **The Policy Reversal**

September 2025 marked a decisive shift. Newly appointed Industry Minister Tim Ayres signaled that the government would "lean in" to AI for productivity gains while emphasizing voluntary frameworks rather than mandatory regulation (Barrett, 2025). By October 2025, Ayres reinforced this position, confirming the

government would focus on AI adoption through voluntary frameworks. The Productivity Commission had recommended treating AI-specific regulation as a "last resort" (Barrett, 2025).

This reversal occurred despite compelling evidence of public demand. Surveys indicate 77% of Australians agree AI regulation is necessary, 80% believe preventing catastrophic AI risks should be a global priority, and 86% want a dedicated regulatory body. Only 30% believe current laws are adequate (Barrett, 2025). The government acknowledged in January 2024 that existing laws were insufficient, yet retreated to frameworks "everyone admits aren't fit for purpose" (Barrett, 2025, p. 8).

- **Consequences of the Voluntary Approach**

The consequences of Australia's retreat are instructive for Pakistan. Without mandatory frameworks, businesses navigate AI adoption with unclear guidance. Research indicates 48% of employees use AI in ways contravening company policies, 57% rely on AI output without evaluating accuracy, and 59% make mistakes in their work due to AI (Barrett, 2025). These statistics reveal that voluntary guidance, however well-intentioned, fails to shape behavior at scale.

The policy vacuum has also generated what one analyst terms "citizen-led governance by necessity"—individuals and communities creating their own ethical frameworks because government abdicated responsibility (Barrett, 2025, p. 10). Unions and technology companies negotiated compensation frameworks for creatives whose work trains AI systems, operating without government leadership. Citizens use AI trained on ethical frameworks to decode political language and measure government failure (Barrett, 2025). While these innovations demonstrate civic resilience, they also represent the privatization of governance functions properly belonging to democratic institutions.

For Pakistan, Australia's experience yields a clear warning: voluntary principles alone are insufficient. The Australian government's retreat from mandatory guardrails occurred despite public demand, documented workplace confusion, and acknowledged legal inadequacy. Political cycles, industry pressure, and ideological commitments can override evidentiary reasoning. Pakistan should not assume its voluntary frameworks—if adopted—would prove more durable.

❖ Elements Worth Adapting

Despite its ultimate inadequacy, Australia's approach contains elements valuable for Pakistan's consideration. The eight AI Ethics Principles provide a comprehensive normative framework that could inform Pakistani legislation (Barrett, 2025). The articulation of "contestability" as a principle—requiring "a timely process to allow people to challenge the use or outcomes of the AI system"—addresses a dimension often overlooked in regulatory design (Barrett, 2025, p. 4). The emphasis on "human-centered values" and "fairness" as distinct principles provides specificity sometimes lacking in broader ethical commitments.

Australia's consultation process itself offers a procedural model. The DISR's structured engagement with industry, civil society, and academia generated substantial input and built stakeholder consensus (Barrett, 2025). Pakistan could benefit from similarly systematic consultation before legislative drafting, ensuring that resulting frameworks reflect local conditions and stakeholder needs.

However, these elements should inform binding legislation, not substitute for it. Australia's mistake was not in developing voluntary principles but in stopping there. Pakistan can adapt Australian content while rejecting the Australian approach.

Germany's Binding Framework: The EU AI Act Model

❖ The EU AI Act: A Risk-Based Paradigm

The European Union AI Act (Regulation (EU) 2024/1689), entering into force on August 1, 2024, represents the world's first comprehensive AI regulation (HEUKING, 2026). Most provisions become applicable on August 2, 2026, giving member states and regulated entities a two-year implementation period. As an EU regulation, the AI Act has direct effect in all member states, including Germany, without requiring national transposition of substantive provisions.

The AI Act adopts a risk-based approach, categorizing AI applications into four tiers. Unacceptable risk applications (social scoring, real-time biometric surveillance in public spaces, manipulative systems) are prohibited entirely. High-risk applications (critical infrastructure, employment, education, credit scoring, law enforcement) face comprehensive requirements: risk management systems, data governance,

technical documentation, transparency obligations, human oversight, and post-market monitoring. Limited risk applications (chatbots, emotion recognition, biometric categorization) face only transparency obligations. Minimal risk applications (AI-enabled video games, spam filters) face no obligations (SKW Schwarz, 2025).

This tiered structure reflects a sophisticated regulatory logic: regulatory intensity scales with potential harm. Low-risk applications face minimal compliance burdens, preserving innovation space, while high-risk applications face proportionate safeguards. The approach avoids both over-regulation of benign applications and under-regulation of dangerous ones.

- **German Implementation: The AI-MIG**

While the AI Act's substantive provisions apply directly, member states must establish enforcement structures. Germany is implementing these through the proposed AI Market Surveillance and Innovation Promotion Act (AI-MIG). The government draft was published on February 11, 2026, following a September 2025 draft bill, and is currently proceeding through parliamentary process (HEUKING, 2026).

The AI-MIG's central feature is designating the Federal Network Agency (Bundesnetzagentur) as the central market surveillance authority for AI compliance (HEUKING, 2026). This represents a largely centralized model, avoiding fragmentation of responsibilities and pooling scarce AI expertise. The explanatory memorandum explicitly cites "efficiency and coherence considerations," seeking to "prevent divergent interpretations of the AI Act" (HEUKING, 2026, para. 12). A Coordination and Competence Center (KoKIVO) within the Federal Network Agency would structure coordination among involved authorities and ensure uniform application.

However, the AI-MIG preserves sectoral responsibilities in certain areas. Existing market surveillance authorities remain responsible for AI systems embedded in regulated products—machinery, medical devices, motor vehicles—leveraging existing sector-specific expertise (HEUKING, 2026). For the financial sector, the Federal Financial Supervisory Authority (BaFin) retains responsibility for AI systems related to regulated financial services, including creditworthiness checks and

actuarial risk assessments (HEUKING, 2026). This hybrid structure—centralized general authority with sectoral exceptions—balances coordination benefits against domain expertise requirements.

❖ Innovation Promotion Mechanisms

Crucially, the AI-MIG couples enforcement with innovation promotion. The Federal Network Agency is responsible for establishing and operating a national AI real-world laboratory (Reallabor), allowing companies—particularly startups and SMEs—to develop and test AI systems under official supervision (HEUKING, 2026). This instrument, explicitly encouraged by the AI Act, enables regulatory clarity before widespread deployment. Companies can test innovative or regulatory complex AI applications in controlled conditions, with regulatory requirements addressed proactively rather than reactively.

The AI-MIG also provides for testing opportunities for high-risk AI systems before widespread market deployment. These controlled testing environments allow certain systems to be evaluated under supervision, with regulatory issues identified and resolved early (HEUKING, 2026). This approach recognizes that for genuinely novel technologies, ex-ante regulatory certainty may be impossible; supervised experimentation provides an alternative pathway to compliance.

❖ Enforcement Architecture

The AI-MIG establishes clear enforcement mechanisms. The Federal Network Agency receives powers to investigate, order remedial action, and impose sanctions for AI Act violations. While the AI Act's fine provisions (up to €35 million or 7% of global annual turnover for prohibited AI practices) apply directly, the AI-MIG specifies the national procedure for imposing these sanctions (HEUKING, 2026).
The draft also addresses Germany's federal structure. For AI systems placed on the market or used by public authorities of the federal states (Länder), market surveillance responsibility lies with authorities designated under state law (HEUKING, 2026). This preserves constitutional federalism while potentially creating fragmentation risks—different interpretations could emerge across states, undermining the uniformity the AI Act seeks to achieve. The KoKIVO's coordination function becomes essential in mitigating this risk.

❖ **Resource Commitments**

Germany's regulatory development occurs within substantial resource commitments. The Federal Government increased AI funding to €5 billion by 2025, up from the original €3 billion commitment (SKW Schwarz, 2025). The AI Action Plan provides over €1.6 billion through 2025 for research, development, and AI applications. Key strategic initiatives include building German-French research and innovation networks and establishing Germany and Europe as "leading locations for AI" (SKW Schwarz, 2025, para. 8).

These resources support both the enforcement infrastructure and the innovation ecosystem. The AI-MIG's real-world laboratory and testing provisions require operational funding. The Federal Network Agency requires trained personnel with AI technical expertise. Germany's approach recognizes that regulation without capacity is ineffective, and capacity without resources is impossible.

❖ **Applicability to Pakistan**

Germany's model offers valuable lessons while presenting significant adaptation challenges. The risk-based approach—proportionality through tiered obligations—is conceptually transferable regardless of institutional context. The distinction between prohibited, high-risk, limited-risk, and minimal-risk applications provides a framework Pakistan could adopt with appropriate local calibration (SKW Schwarz, 2025).

The centralized enforcement model also merits consideration. Pakistan's smaller economy and more limited regulatory capacity might benefit from concentrating AI expertise in a single authority rather than distributing it across multiple agencies. The Federal Network Agency model—an existing regulator gaining expanded mandate—suggests Pakistan could designate an existing institution (perhaps the Pakistan Telecommunication Authority or a newly established AI Directorate) as central authority.

However, Germany's model assumes institutional capacities Pakistan may lack. The Federal Network Agency already possessed technical expertise, enforcement experience, and stakeholder relationships before receiving AI mandate. The AI-MIG operates within an existing legal culture of regulatory compliance, where

administrative decisions face judicial review and regulated entities generally comply with lawful obligations (HEUKING, 2026). Pakistan's enforcement context—weaker administrative capacity, less predictable judicial processes, different compliance cultures—requires adaptation rather than adoption.

Moreover, the EU AI Act represents a compromise among twenty-seven-member states with established regulatory traditions (SKW Schwarz, 2025). Pakistan would need not to adapt an existing text but to draft original legislation suited to local constitutional structures, administrative realities, and development priorities. Germany's model provides architectural inspiration, not a template.

Comparative Analysis: Two Paradigms, One Lesson

- **Contrasting Regulatory Philosophies**

Australia and Germany embody fundamentally different regulatory philosophies. Australia's voluntary approach reflects what might be termed regulatory minimalism: the presumption that government intervention should be limited, that industry self-regulation can suffice, and that binding rules should be a "last resort" (Barrett, 2025). This philosophy prioritizes innovation and economic competitiveness, assuming that regulatory burdens would constrain AI development and that market pressures will discipline harmful applications.

Germany's binding framework reflects regulatory precaution: the presumption that emerging technologies with significant harm potential require legal safeguards, that voluntary measures are insufficient to protect public interests, and that regulatory design can be innovation-compatible (HEUKING, 2026; SKW Schwarz, 2025). This philosophy prioritizes citizen protection and legal certainty, assuming that clear rules enable rather than constrain responsible innovation by reducing uncertainty.
These philosophies generate different regulatory outputs. Australia produces principles, guidance, and voluntary standards—flexible but unenforceable. Germany produces legislation, implementing acts, and enforcement mechanisms—binding but potentially rigid. Each approach has internal logic; each claim to balance innovation and protection, though with different default positions.

❖ Strengths and Weaknesses Evaluated

Australia's voluntary approach offers certain advantages. Flexibility allows frameworks to evolve with technology without legislative amendment. Lower compliance burdens particularly benefit startups and SMEs with limited legal resources. Faster adoption avoids parliamentary delays. Industry buy-in may be higher when rules are self-developed rather than externally imposed (Barrett, 2025). However, Australia's experience reveals fatal weaknesses. Unenforceable principles cannot constrain bad actors; voluntary guidance only binds those already inclined to comply. Regulatory uncertainty persists because voluntary frameworks can change arbitrarily with government preference—as Australia's reversal demonstrated. Inadequate remedies leave harmed individuals without recourse. Perhaps most damning, Australia's retreat occurred despite overwhelming public demand for regulation, revealing voluntary approaches' vulnerability to political cycles and industry pressure (Barrett, 2025). A framework that can be abandoned without legislative process provides no durable protection.

Germany's binding framework offers corresponding strengths. Legal enforceability provides meaningful constraint on harmful applications. Regulatory certainty enables businesses to plan compliance with confidence. Remedies and redress give harmed individuals legal recourse. Democratic legitimacy attaches to legislation enacted through representative processes. Durability means frameworks cannot be abandoned by executive discretion (HEUKING, 2026; SKW Schwarz, 2025).

Yet Germany's approach carries genuine costs. Higher compliance burdens may disadvantage smaller entities. Legislative rigidity risks obsolescence as technology evolves faster than amendment processes. Implementation delays mean binding frameworks take years to become operational. Institutional requirements demand regulatory capacity many countries lack. The AI Act's two-year implementation period, while reasonable in the European context, might be infeasible for less administratively developed jurisdictions (SKW Schwarz, 2025).

❖ The Central Lesson: Voluntarism is Insufficient

The comparative analysis yields one unequivocal conclusion: voluntary principles alone are insufficient for effective AI governance. Australia's experience demonstrates that even well-designed voluntary frameworks, supported by public

consultation and expert input, cannot constrain harmful applications, provide adequate remedies, or withstand political pressure. The Australian government acknowledged existing laws were inadequate, proposed mandatory guardrails, then abandoned them—leaving citizens and businesses without guidance (Barrett, 2025). Pakistan should not repeat this error. The Islamabad AI Declaration's principles are valuable as normative commitments, but they must be translated into binding legislation (Associated Press of Pakistan, 2026). Voluntary codes of conduct, industry self-regulation, and ethical guidelines—however sophisticated—cannot fulfill the constitutional function of law: establishing enforceable rights, allocating legal responsibility, and providing remedies for violation.

This conclusion does not imply that Germany's model is directly transferable. The binding framework must be adapted to Pakistani context. But the lesson is clear: the choice is not between voluntary and binding approaches; it is between binding frameworks that may require adaptation and voluntary frameworks that will certainly prove inadequate.

❖ Contextual Factors Affecting Transferability

Several contextual factors affect each model's transferability to Pakistan. Legal culture differs substantially. Germany operates within a Rechtsstaat tradition emphasizing legal rules, administrative regularity, and judicial enforcement (HEUKING, 2026). Australia's common law tradition similarly assumes that legal rules matter and will be enforced (Barrett, 2025). Pakistan's legal culture, while also common law-based, faces challenges of implementation, enforcement, and access to justice that complicate any regulatory model.

Regulatory capacity varies dramatically. Germany's Federal Network Agency employs hundreds of technical specialists, lawyers, and economists. Australia's Department of Industry, Science and Resources maintains substantial policy capacity. Pakistan's proposed AI Directorate would need capacity-building support before assuming enforcement responsibilities (Ministry of Information Technology and Telecommunications, Pakistan, 2023).

Economic structure influences appropriate regulatory intensity. Germany's advanced economy features sophisticated AI developers and deployers capable of managing compliance burdens (SKW Schwarz, 2025). Australia's service-based

economy similarly includes substantial compliance capacity (Barrett, 2025). Pakistan's economy, with larger informal sector and smaller formal enterprises, may require lighter-touch regulation for low-risk applications while maintaining robust safeguards for high-risk uses.

Political economy shapes regulatory feasibility. Germany's consensus-oriented politics enabled the AI Act's passage despite member state disagreements. Australia's policy reversal reveals how political shifts can derail regulatory initiatives (Barrett, 2025). Pakistan's political volatility suggests that durable frameworks require cross-party consensus and institutional insulation from electoral cycles.

These contextual factors counsel adaptation rather than adoption. Pakistan should draw on both models' strengths while designing institutions suited to local realities.

A Hybrid Framework for Pakistan: Phased Sovereignty Model

❖ Core Design Principles

Drawing on comparative analysis, this article proposes a Phased Sovereignty Model comprising three developmental stages, each with distinct regulatory approaches, transitioning as institutional capacity matures. The model rests on five core design principles:

- Principle 1: Legality as Foundation – Voluntary principles support but do not substitute for binding legislation. The Islamabad AI Declaration's commitments must be enacted through parliamentary statute (Associated Press of Pakistan, 2026).
- Principle 2: Proportionality Through Risk Classification – Regulatory intensity scales with potential harm, adopting the EU AI Act's tiered approach while simplifying categories for Pakistani context (SKW Schwarz, 2025).
- Principle 3: Adaptive Sequencing – Regulatory mechanisms evolve with institutional capacity, beginning with lighter frameworks in early stages and adding rigor as expertise develops.
- Principle 4: Sovereignty in Data and Infrastructure – National data remains governed under Pakistani law, with sovereign computing capacity

developed systematically (Associated Press of Pakistan, 2026; TechJuice, 2026).

- Principle 5: Human Accountability – Legal responsibility attaches to identifiable persons, not algorithms. Human oversight and contestability rights are legally enforceable (Associated Press of Pakistan, 2026).

❖ **Stage One: Regulatory Sandbox Phase (Years 1–2)**

The initial phase prioritizes institutional capacity-building and supervised experimentation. The government should enact the Pakistan Artificial Intelligence Governance Act (PAIGA) establishing:

- National AI Directorate within Ministry of IT and Telecom, with mandate to develop technical standards, operate regulatory sandbox, and coordinate international engagement

- Regulatory Sandbox Authority granting exemptions from general obligations for approved participants, with conditions including transparency reporting, user notification, and grievance recording

- AI Ethics Advisory Council comprising technical experts, civil society representatives, and affected community members, providing non-binding guidance on emerging issues

During this phase, only high-risk applications (as defined by the Directorate) require sandbox authorization. Low-risk applications face no regulatory requirements beyond general consumer protection laws. This approach preserves innovation space while building regulatory capacity.

Crucially, the sandbox must include binding conditions, not merely voluntary guidelines. Participants must agree to transparency reporting, user notification of AI involvement, and grievance recording. The Directorate must have authority to revoke authorization, impose conditions, or refer violations to relevant authorities. Australia's mistake was making participation voluntary without binding conditions; Pakistan should require enforceable commitments.

❖ **Stage Two: Risk-Based Framework Transition (Years 2–4)**

As institutional capacity matures, the framework transitions from sandbox-based to generally applicable rules. The AI Directorate, having gained operational experience, issues binding regulations implementing:

Prohibited AI Practices (effective immediately upon PAIGA passage):

- Social scoring by public authorities
- Real-time biometric surveillance in public spaces (with narrow law enforcement exceptions)
- Exploitative systems targeting vulnerable populations
- Workplace emotion recognition without explicit consent

High-Risk AI Applications (regulated from Year 2):

- Critical infrastructure operation
- Employment decisions (recruitment, promotion, termination)
- Credit scoring and insurance underwriting
- Education admissions and assessment
- Law enforcement predictive tools
- Benefits administration in social welfare

For high-risk applications, providers must comply with: risk management systems, data governance standards, technical documentation, transparency disclosures, human oversight protocols, and post-market monitoring. The Directorate conducts conformity assessments, with third-party audits for highest-risk categories.

Limited Risk Applications (transparency obligations only):

- Chatbots and conversational AI
- Emotion recognition (non-workplace)
- Content generation tools
- Users must be informed they are interacting with AI; generated content should be appropriately labeled.

Minimal Risk Applications (no obligations):

- AI-enabled entertainment
- Spam filters
- Basic automation tools
- This tiered structure embodies proportionality: regulatory intensity matches potential harm.

❖ **Stage Three: Full Enforcement Maturity (Years 4–5)**

By Year 4, the Directorate should achieve full operational capacity with:

- Technical expertise sufficient to audit complex AI systems
- Enforcement experience including investigation and sanction processes
- International coordination mechanisms with counterpart regulators
- Judicial relationships enabling effective remedy enforcement

At this stage, the framework adds:

- Ex-ante certification for highest-risk applications (medical AI, autonomous vehicles) before market entry
- Algorithmic impact assessment requirements for public sector AI deployment
- Collective redress mechanisms enabling group claims for systematic algorithmic harm
- Statutory damages provisions removing need to prove individual harm in certain violation categories

❖ **Institutional Design Specifics**

The proposed National AI Directorate requires careful design to ensure effectiveness and accountability. Structurally, it should be located within the Ministry of IT and Telecom but with operational independence, including separate budget appropriation, independent staffing authority, and protected tenure for senior officials.

Functionally, the Directorate requires:

- Technical Division with AI expertise sufficient to evaluate system documentation, audit algorithms, and assess risk classifications
- Legal Division with administrative law expertise to conduct investigations, draft regulations, and coordinate enforcement
- Stakeholder Engagement Division to consult affected communities, receive complaints, and communicate regulatory guidance
- International Coordination Division to monitor global developments, participate in standard-setting, and ensure Pakistani frameworks remain interoperable

Funding should come from a combination of appropriations and industry fees. The draft National AI Policy's proposed National AI Fund could support Directorate operations (Ministry of Information Technology and Telecommunications, Pakistan, 2023). The $1 billion NAIEDP proposed for 2026–2031 should allocate specific resources for regulatory capacity, not only research and infrastructure (TechJuice, 2026).

Germany's AI-MIG centralization lesson applies: Pakistan should avoid fragmenting AI authority across multiple agencies (HEUKING, 2026). While sectoral regulators (SECP for finance, PTA for telecommunications, etc.) retain jurisdiction over AI applications within their domains, the Directorate should maintain coordinating authority, including binding dispute resolution when sectoral approaches diverge.

❖ **Innovation Promotion Mechanisms**

Regulation should not merely constrain but also enable responsible innovation. The Phased Sovereignty Model includes affirmative promotion mechanisms:

- Regulatory Sandbox (Stage One) continues operating for innovative applications of uncertain regulatory status. Participants receive binding comfort letters regarding compliance obligations, reducing legal uncertainty.

- AI Real-World Laboratories, adapted from Germany's AI-MIG, enable supervised testing of novel applications with regulatory exemptions under

defined conditions (HEUKING, 2026). The Directorate may approve testing protocols, monitor results, and issue compliance guidance based on learnings.

- Small Business Exemptions reduce compliance burdens for entities below size thresholds (e.g., fewer than 50 employees or €10 million annual revenue). Small businesses face only transparency obligations and basic documentation requirements, not full conformity assessment, unless operating in high-risk categories.

- Public Sector AI Mandate requires government entities to publish AI usage registers, conduct impact assessments, and ensure procurement contracts include compliance requirements. Government should model responsible adoption.

❖ **International Alignment**

Pakistan should pursue international alignment while preserving regulatory autonomy. The Islamabad AI Declaration commits to "principled partnerships that promote interoperable standards and ethical AI norms" (Associated Press of Pakistan, 2026, para. 9). Operationalizing this commitment requires:

- Recognition of EU adequacy determinations for cross-border data flows involving AI systems, reducing compliance burdens for international operations

- Participation in GPAI (Global Partnership on AI) or similar multilateral forums, contributing Global South perspectives to standard-setting

- Bilateral cooperation agreements with Germany, Australia, and other relevant jurisdictions, enabling information sharing and coordinated enforcement

- Technical standard adoption where appropriate (ISO/IEC 42001 for AI management systems), avoiding reinvention of existing standards

However, alignment should not mean adoption of foreign frameworks unsuited to Pakistani context. The Phased Sovereignty Model's name emphasizes sovereignty: Pakistan determines its own regulatory priorities, adapts international standards to local conditions, and retains authority to deviate when national interests require.

Conclusion and Future Recommendations

❖ Summary of Findings

This article has argued that Pakistan's current AI governance gap—policy-rich, law-poor—cannot persist without mounting costs. The comparative analysis of Australian and German models yields clear lessons. Australia's voluntary approach, despite good-faith development and public support, proved insufficient; its recent policy reversal demonstrates voluntarism's fragility and inadequacy (Barrett, 2025). Germany's binding framework, while institutionally demanding, provides enforceable protections, regulatory certainty, and proportional risk categorization (HEUKING, 2026; SKW Schwarz, 2025).

The proposed Phased Sovereignty Model synthesizes these lessons for Pakistani context. Beginning with a regulatory sandbox phase enabling supervised innovation, transitioning to a risk-based binding framework as institutional capacity matures, and achieving full enforcement capability by Year 5, the model provides sequenced development rather than infeasible immediate adoption of German-style comprehensive regulation.

Three central conclusions emerge. First, voluntary principles cannot substitute for binding legislation; the Islamabad AI Declaration must be enacted into law (Associated Press of Pakistan, 2026). Second, proportionality through risk classification enables innovation while protecting citizens; Pakistan should adopt a simplified tiered approach adapted from the EU AI Act (SKW Schwarz, 2025). Third, institutional capacity requires dedicated resources; regulatory development must accompany infrastructure investment, not follow it (TechJuice, 2026).

Recommendations for Policymakers

❖ Immediate Actions (0–12 months):

- Enact Pakistan Artificial Intelligence Governance Act (PAIGA) establishing National AI Directorate, regulatory sandbox authority, and prohibited AI practices. Drafting should commence immediately, with target passage within 12 months.

- Allocate dedicated funding for Directorate establishment within proposed $1 billion NAIEDP, including personnel recruitment, technical training, and international engagement (TechJuice, 2026).

- Launch multi-stakeholder consultation process modeled on Australia's DISR consultation, engaging industry, civil society, academia, and affected communities before finalizing implementing regulations (Barrett, 2025).

❖ **Short-Term Actions (12–24 months):**

- Operationalize regulatory sandbox with binding conditions, accepting first participant cohort within 18 months of PAIGA passage.

- Develop risk classification guidelines providing clear criteria for prohibited, high-risk, limited-risk, and minimal-risk determinations.

- Establish international coordination through GPAI participation and bilateral agreements with Germany and Australia.

❖ **Medium-Term Actions (24–60 months):**

- Transition to binding high-risk regulation by Year 3, requiring conformity assessments for employment, credit, education, and law enforcement AI applications.

- Achieve full enforcement capability by Year 5, including ex-ante certification for highest-risk applications and collective redress mechanisms.

❖ **Continuous Actions:**

- Monitor international developments as EU AI Act implementation proceeds and other jurisdictions enact frameworks, adapting Pakistani approaches as warranted.

- Conduct periodic review every three years, evaluating effectiveness, identifying gaps, and recommending amendments.

Limitations and Future Research

This article has limitations requiring acknowledgment. The comparative analysis draws on Australia and Germany as exemplars of voluntary and binding approaches, but other jurisdictions (Singapore's hybrid model, Canada's proposed AI and Data Act, China's algorithmic regulation) offer additional lessons beyond this article's scope. Future research should expand the comparative database.

The Phased Sovereignty Model requires validation through stakeholder engagement. Whether Pakistani industry would support or resist binding regulation, whether civil society organizations have capacity to participate meaningfully in consultation, and whether political conditions enable legislative passage remain empirical questions. Implementation research tracking PAIGA's progress would test the model's assumptions.

Finally, the relationship between AI governance and constitutional law deserves deeper examination. How do algorithmic accountability mechanisms interact with fundamental rights to due process, non-discrimination, and access to justice? When AI systems cause harm, how should liability be allocated across developers, deployers, and users? These questions, touched on here, require sustained doctrinal analysis.

Concluding Reflections

Pakistan stands at a decisive moment. The technologies being deployed today will shape governance structures for decades. Frameworks established now will determine whether AI augments human capacity with accountability or operates beyond legal constraint. The Islamabad AI Declaration's commitment to

"accountable systems" and "human oversight" is commendable, but commitments must be enacted to matter (Associated Press of Pakistan, 2026).

The Australian experience warns that voluntary principles, however well-intentioned, prove insufficient when industry pressure or political calculation favors inaction (Barrett, 2025). The German experience demonstrates that binding frameworks are feasible, even for less administratively developed jurisdictions, when political will exists (HEUKING, 2026). Pakistan need not choose between innovation and protection; with careful design, it can achieve both.

The time for action is now. Every month without a legal framework means additional AI systems deployed without accountability, additional data processing without sovereignty, additional algorithmic decisions without contestability. The governance gap can be bridged—but only through deliberate legislative action, informed by comparative experience, adapted to local context, and sustained through institutional capacity. The bridge must be built. This article has offered architectural plans; now comes the work of construction.

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Article Information:

Received	*10-Sept-2025*
Revised	27-Nov-2025
Accepted	10-Dec-2025
Published	15-Dec-2025

Declarations:

Author's Contribution:

- **Conceptualization, and intellectual revisions. Data collection, interpretation, and drafting of manuscript**
- The author agrees to take responsibility for every facet of the work, making sure that any concerns about its integrity or veracity are thoroughly examined and addressed

- **Conflict of Interest**: NIL
- **Funding Sources**: NIL

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