

From Military Alliances to Selective Technology Partnerships: Pakistan–US Relations in the Age of Artificial Intelligence

Saima Yasmin¹, Fatima Munir² & Muhammad Waqas³

¹School of Historic Cultures & School of Nationalities, Southwest University, Chongqing, China,

Email: saimayasmin2023@outlook.com

²Government College University Faisalabad, Faisalabad, Pakistan, Email: fatimakallu337@gmail.com

³Government College University Faisalabad, Faisalabad, Pakistan, Email: Waqasminhas076@gmail.com

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Corresponding Author:

Muhammad Waqas

Email:

Waqasminhas076@gmail.com



ABSTRACT

How does artificial intelligence change an unequal strategic relationship shaped by military cooperation? This article examines Pakistan–United States relations through a qualitative, theory-informed documentary analysis, using historical scholarship, selected official records, and descriptive trade statistics. It questions the assumption that technology partnership represents a clean departure from security dependence. The article develops the concept of selective technological interdependence to distinguish access to commercial services, research networks, and applications from access to sensitive computing infrastructure and strategic capabilities. Its central proposition is that cooperation can broaden while remaining differentiated by security concerns, commercial incentives, and domestic capacity to absorb technology. The available evidence establishes a history of overlapping security and civilian cooperation and a contemporary policy interest in AI; it does not establish a completed bilateral AI transformation. Three observable dimensions—implementation, control over critical inputs, and domestic capability formation—provide a framework for evaluating that transformation. The contribution is an analytically bounded explanation of how technological diversification may coexist with unequal bargaining power, together with a transparent research design for testing this explanation beyond diplomatic announcements.

Introduction

The language of partnership often changes faster than the institutions beneath it. Pakistan–United States relations provide a useful setting in which to examine this difference. A relationship commonly narrated through Cold War alliances, Afghanistan, and counterterrorism now also

invites discussion of digital markets, research cooperation, and artificial intelligence. The research problem is whether these activities alter the distribution of authority and capability within the relationship, or add new transactions to an older pattern of asymmetry. The answer cannot be inferred from AI's appearance in a diplomatic statement.

The proposed movement “from military alliances to technology partnerships” is therefore treated as a proposition to investigate. Historical accounts describe recurring disagreements about the purposes of cooperation, even during periods of close engagement (Kux, 2001; Haqqani, 2013). Pakistan's participation in SEATO in 1954 also reflected priorities that were not identical to Washington's. The US Office of the Historian distinguishes Pakistan's concern with India from the American objective of containing communism (US Department of State, n.d.). A shared institution could accommodate different expectations without resolving them.

Technology cooperation is not entirely new. An official State Department record identifies the signing of a bilateral science and technology cooperation agreement in June 2003 (US Department of State, 2003). This predates the current interest in generative AI and challenges any periodisation that places civilian knowledge exchange exclusively after the security relationship. A more productive inquiry concerns the layering of activities and the conditions under which particular forms of cooperation acquire strategic significance.

This article asks: under what conditions can AI-related cooperation broaden Pakistan–US relations without substantially reducing the asymmetry between them? It advances selective technological interdependence as a framework for answering this question. The term describes a relationship in which cross-border access expands unevenly across the technological system, while control over scarce inputs and the capacity to deny access remain concentrated. The framework connects a familiar problem of unequal interdependence to the practical organisation of AI: computing resources, data, skills, software, standards, and institutions that combine them.

Three contributions follow. First, the article replaces an assumed historical transition with an observable problem of institutional change. Second, it distinguishes the breadth of cooperation from the distribution of control, making it possible to identify diversification without presuming strategic autonomy. Third, it sets out evidence rules that separate a policy ambition, a contractual commitment, an operating project, and a demonstrated capability. These are proposed conceptual and methodological contributions; their novelty relative to the complete field and their explanatory reach require further scrutiny.

The argument speaks to a wider question in international relations. Smaller and technologically dependent states can participate in several international networks at once, but participation need not confer equivalent influence within each network. Attention to their choices broadens the study of global order beyond competition among the leading powers (Acharya, 2014). Pakistan is especially informative because its external relationships intersect with a consequential regional security environment and a domestic political economy in which military, civilian, and commercial actors have different priorities.

Literature and Analytical Foundations

Alliances and unequal bargaining

Alliance theory explains why states cooperate under insecurity, but it does not warrant treating every form of cooperation as an alliance. Walt (1987) emphasises threats, while Snyder (1984) identifies tensions between abandonment and entrapment. These approaches direct attention to the commitments partners expect and the costs of disappointed expectations. Applied to Pakistan–US

relations, they suggest asking what each side believes it is obtaining from technology cooperation before assuming shared strategic purposes.

Structural accounts locate these choices within a distribution of capabilities that individual states cannot readily change (Waltz, 1979; Gilpin, 1981). Yet material inequality does not eliminate bargaining. Hirschman (1945) shows how economic relationships can create influence through dependence, and Baldwin (1985) treats economic instruments as tools of statecraft whose effects depend on context. In a technological relationship, the relevant dependence may concern access to a service, a component, or specialised expertise rather than an aggregate trade balance.

The literature on hierarchy clarifies a further distinction. An unequal relationship is not automatically a relationship of accepted authority. Lake (2009) directs attention to authority arrangements, while Krasner (1999) shows why formal sovereignty and practical constraints can coexist. These insights caution against describing Pakistan as either fully autonomous or simply subordinate. The empirical task is to identify which decisions remain contestable, which are constrained, and through what institutional mechanisms.

Historical scholarship supplies the necessary context. Cohen (2004), Lieven (2011), and Paul (2014) examine different aspects of Pakistan's state formation, social order, and security orientation. Fair (2014) directs particular attention to the army's strategic outlook. These works do not demonstrate the effects of contemporary AI cooperation. They help identify domestic actors and institutional legacies that a study of new cooperation should investigate rather than presume away.

Interdependence and the organisation of technological power

Complex interdependence makes room for several channels connecting societies and for issue-specific patterns of vulnerability (Keohane & Nye, 1977). Institutional cooperation can lower uncertainty and facilitate repeated exchange (Keohane, 1984), while durable international arrangements may constrain and reassure their participants (Ikenberry, 2001). None of these arguments implies that increased exchange necessarily equalises capabilities. More transactions can coexist with greater dependence on a limited set of providers. Strange's (1988) account of structural power and Barnett and Duvall's (2005) differentiation of forms of power help clarify why control over a technological environment matters. A supplier can shape another actor's options without issuing a direct diplomatic demand. The structure of a market, the standards embedded in an interface, and the terms attached to a service can all affect what an importing institution is able to do.

Farrell and Newman (2019) explain how asymmetric global networks create opportunities for surveillance and exclusion where states have authority over central nodes. Their framework is especially relevant to technologies whose inputs and services pass through concentrated networks. However, an observed dependency is not proof that coercion has occurred. The distinction between a potential chokepoint and an exercised restriction is essential to the present analysis. Later work on the uses and limits of network power reinforces the need to examine institutional context and responses by affected actors (Drezner et al., 2021; Farrell & Newman, 2023). Regulatory competition adds another dimension. Drezner (2007) studies the politics of international regulation, while Bradford (2023) examines competing approaches to governing digital technology. Cooley and Nexon (2020) draw attention to the ways alternative relationships can unsettle established orders. Together, these perspectives suggest that Pakistan's choices may involve overlapping regulatory and commercial environments rather than a single decision to align with one technological bloc.

AI capability and domestic absorption

AI is an enabling technology with multiple applications, not a single asset whose acquisition automatically produces strategic advantage. Horowitz (2018) highlights the importance of organisational adoption and uncertainty over diffusion. Bresnahan and Trajtenberg (1995) explain why general-purpose technologies matter through complementary innovations across sectors. David's (1990) historical comparison of electricity and computing similarly warns against expecting immediate productivity gains from a new technical input. The distinction between access and use is central. Cohen and Levinthal (1990) identify absorptive capacity as the ability to recognise, assimilate, and apply external knowledge. Teece et al. (1997) emphasise capabilities for adaptation. At a national scale, Ding (2024) argues for attention to diffusion, while Ding and Dafoe (2023) analyse the broad and delayed effects of general-purpose technologies on military transformation. These approaches justify examining skills, routines, and complementary institutions alongside access to frontier systems.

Military innovation research reaches a related conclusion through different evidence. Posen (1984), Rosen (1991), and Horowitz (2010) examine organisational and strategic conditions under which armed forces change. Horowitz (2020) also assesses the significance of emerging technologies for international politics. For the present case, this literature supports a limited inference: an AI-related agreement cannot be treated as evidence of a changed military balance without evidence of adoption, integration, and effectiveness. Developmental institutions matter beyond the military. Evans (1995), North (1990), and Rodrik (2007) illuminate different aspects of institutional capability and development. The World Bank's Digital Dividends report links the benefits of digital adoption to skills, competition, and accountable institutions (World Bank, 2016). Mazzucato (2013) and Weiss (2014) further challenge accounts that separate technological development neatly into either state action or private innovation. The analytical implication is that public and commercial partnerships should be studied together while keeping their responsibilities distinct.

Governance and competing interpretations

Technical cooperation also has distributive consequences. Kwet (2019) examines digital colonialism through control of technological architectures, and Couldry and Mejas (2019) analyse the appropriation of social life through data relations. Crawford (2021) emphasises the material and labour foundations of AI. These perspectives provide questions about ownership, extraction, and dependence; they should not be used to declare every foreign technology contract colonial before examining its terms. Feldstein (2021) shows how digital tools can support political repression. Jobin et al. (2019) document convergence and divergence in AI ethics guidelines, while UNESCO (2022) connects AI governance to human rights and public accountability. These works make it necessary to examine who benefits from a partnership and who bears its risks. A project that increases administrative capability may still weaken public accountability if the people affected cannot understand or challenge its decisions.

Finally, strategic hedging provides a language for managing uncertainty without fully committing to one side (Kuik, 2008, 2021). Small's (2015) study of China–Pakistan relations establishes the importance of looking beyond the bilateral Pakistan–US frame. Nevertheless, suppliers from more than one country do not, by themselves, prove a coherent hedging strategy. Evidence of deliberate risk management, available alternatives, and willingness to bear switching costs is needed. Selective technological interdependence describes an observable relationship; hedging concerns an actor's strategy within it.

Research design and evidence rules

Scope and method

The study is a qualitative, theory-informed documentary analysis with historical contextualisation and a small descriptive statistical component. Its documentary observation date is 15 September 2026. Historical material establishes the origins and persistence of cooperation; contemporary material is used only where its date and meaning can be identified. The analysis is exploratory and does not claim a comprehensive archive of Pakistan–US interactions or a systematic review of every relevant publication. Document analysis is appropriate because the central questions concern publicly articulated objectives, institutional arrangements, and evidence of implementation (Bowen, 2009). A directed content-analysis approach uses theoretically informed categories while remaining open to evidence that does not fit them (Hsieh & Shannon, 2005). Case-study methodology permits close attention to context, but its generalisations concern mechanisms and concepts rather than the statistical representativeness of one country pair (Gerring, 2004; Yin, 2018).

The article uses process-tracing logic to specify what evidence would support competing explanations, following George and Bennett (2005), Collier (2011), and Bennett and Checkel (2015). It does not report completed causal process tracing. Public announcements alone cannot establish the sequence connecting strategic preferences, negotiations, resource allocation, and operational effects. The present evidence is sufficient to question a simple replacement narrative and organise a more demanding investigation; it is insufficient to estimate the causal effect of AI on the relationship.

Selection and interpretation of sources

The empirical core contains six identifiable official records or resources: the Office of the Historian’s SEATO account; the 2003 State Department agreement announcement; the 2023 NIST AI Risk Management Framework; the White House’s July 2025 AI Action Plan; USTR’s Pakistan trade summary reporting 2025 figures; and the US Mission Pakistan’s September 2026 announcement on economic and AI partnerships. Their evidential roles differ. The NIST and White House documents establish US policy context, not bilateral implementation. The 2003 and September 2026 records were identifiable through indexed official records, but their complete underlying pages were not retrievable for this analysis; substantive claims are therefore restricted to their confirmed announcement-level content. Historical and theoretical literature provides interpretation rather than additional observations of recent bilateral projects. No interview sample, survey, procurement dataset, or bilateral AI-investment series was generated. Search-index metadata and accessible abstracts were used to identify some literature, so the bibliography should not be read as a claim that every book or article was examined in full. This limitation narrows the evidential basis of the argument and leaves detailed textual adjudication for further research.

Source selection privileges records with an identifiable issuing organisation, date or reporting period, and an explicit connection to the analytical question. General commentary that uses “digital,” “technology,” and “AI” interchangeably is insufficient for classifying a project as AI-related. Duplicate reporting of one announcement remains one event. An agreement is not counted again merely because several institutions repeat its press release. Each empirical claim is classified by what its source can establish. Statements about intentions establish an agenda. A signed instrument can establish specified commitments. An implementation report may establish delivery, subject to the reporting institution’s incentives and definitions. An outcome evaluation is needed for effects on productivity, bargaining autonomy, or public welfare. Where implementation is not observed, the appropriate entry is “not established in the reviewed evidence,” not zero.

Operational definitions and rival explanations

The unit of analysis for a future expanded study is the bilateral initiative. Five dimensions should be recorded: participating actors; technological function; legal or organisational instrument; implementation stage; and control over critical inputs. AI-related status requires a specific machine-learning or AI function, research activity, governance objective, or computing use. Ordinary IT services, broadband infrastructure, and digital-payment initiatives remain separate unless their AI connection is documented.

Three rival explanations structure the analysis. A replacement explanation expects durable institutional and resource shifts from security cooperation toward technology cooperation. A layering explanation expects new activities alongside existing relationships and institutions. A signalling explanation expects ambitious language with limited subsequent implementation. Institutional-change scholarship makes layering plausible without making it inevitable (Mahoney & Thelen, 2010; Pierson, 2000). The purpose of these alternatives is to expose the main argument to disconfirmation rather than absorb every possible observation into it. Evidence for selectivity would require a within-relationship contrast: one class of access enabled while another is restricted or made conditional, with a documented reason for the difference. Evidence for domestic capability formation would require repeatable activity within Pakistani institutions, not participation certificates alone. Examples include locally maintained systems, independently evaluated applications, retained research teams, or documented ability to change suppliers. These are measurement proposals, not findings reported by this article.

Selective Technological Interdependence

The proposed mechanism

The framework begins with differentiated interests. Governments may value influence, security, and economic development, while firms seek revenue and universities seek knowledge and collaboration. These interests overlap imperfectly. Cooperation becomes feasible when participants can agree on a bounded activity without settling every disagreement in the wider relationship. This makes applications, research exchanges, and technical governance possible sites of cooperation even when more sensitive forms of access remain politically difficult. The second step is the organisation of access. A partnership is mediated by contracts, licences, infrastructure, data rules, and the allocation of expertise. These determine who can use a system, change it, inspect it, or continue operating it after external support ends. Ding and Dafoe's (2021) distinction among the strategic properties of assets helps explain why these decisions cannot be reduced to a uniform category called technology transfer. The third step is domestic conversion. External access becomes durable capability only when local organisations can integrate the resource into repeated practice. A short training programme and an enduring research group may have similar diplomatic visibility but very different consequences. The framework therefore treats domestic absorption as an intervening condition rather than assuming that cooperation produces capability automatically.

The final step concerns bargaining. Greater capability can improve the recipient's options, but dependence on critical external inputs may persist. Accordingly, broader cooperation and unequal control are compatible outcomes. The framework is falsifiable: evidence of broad, reliable access, low switching costs, and independently sustained local capability would weaken an account centred on persistent technological dependence. Evidence that no meaningful cooperation materialised would instead favour signalling over interdependence.

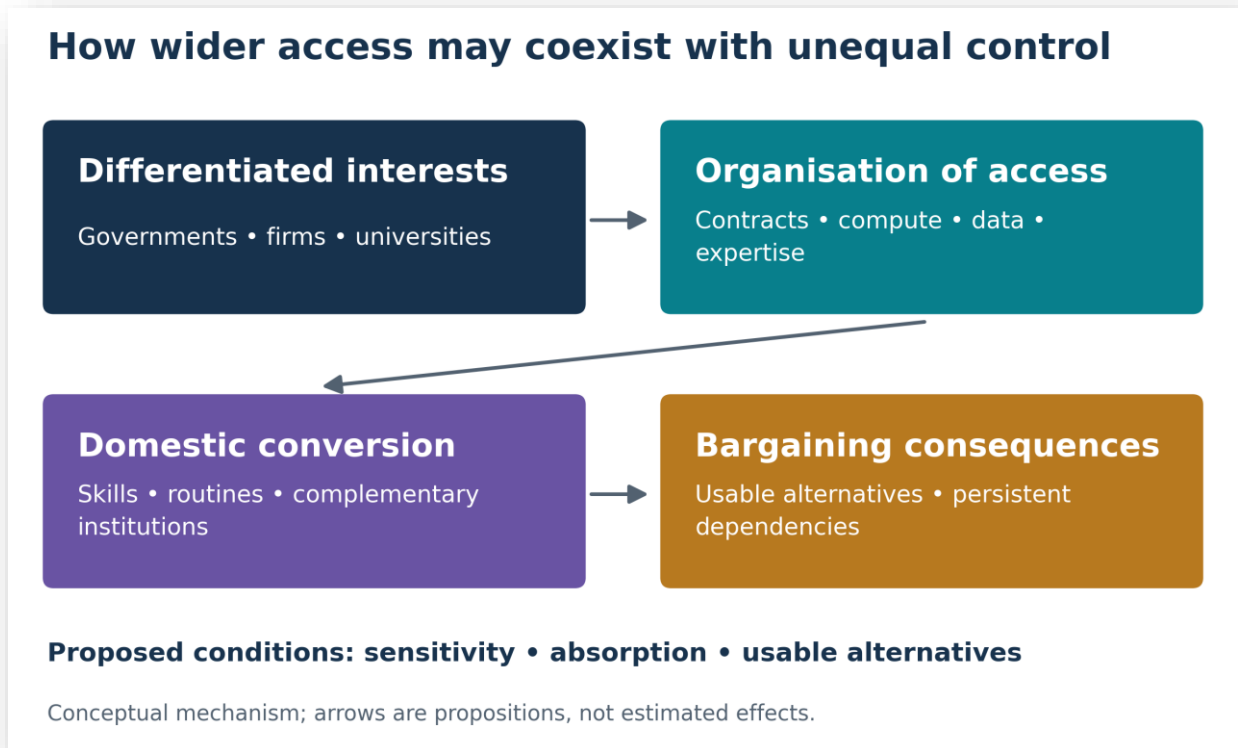


Figure 1. Proposed mechanism of selective technological interdependence. The arrows express analytical propositions, not estimated causal effects. The framework draws on interdependence, strategic-assets, and absorptive-capacity scholarship discussed in the text.

Three propositions

Proposition 1 concerns sensitivity. Cooperation should be easier to institutionalise where participants regard the activity as commercially or scientifically useful and less threatening to their security priorities. Testing this proposition requires comparing activities within the same relationship, including rejected or delayed proposals. It cannot be tested by listing successful initiatives alone. Security categories should be taken from documented decisions rather than assigned retrospectively to make the proposition fit.

Proposition 2 concerns absorption. Partnerships supported by stable organisations, relevant skills, and complementary infrastructure should be more likely to produce locally sustained capability. This proposition does not imply that all institutions need to be strong before cooperation can begin. It predicts variation in outcomes depending on the particular capacities required by a project. Evidence should therefore be collected at the level of the implementing organisation as well as at the national level.

Proposition 3 concerns alternatives. Diversification should improve bargaining options only when alternative providers or arrangements are practically usable. A second supplier is not an effective alternative if moving to it requires unaffordable redesign or the loss of essential functionality. Conversely, a smaller domestic system may provide meaningful autonomy for a bounded public-service task even if it cannot match the most advanced international systems. Autonomy is therefore task-specific, not a synonym for technological self-sufficiency.

Pakistan–US Relations through The Proposed Framework

Historical continuity and the limits of a transition narrative

The historical record establishes that security relationships can contain different purposes. SEATO participation illustrates this point, while the broader bilateral history shows repeated efforts to sustain cooperation despite disagreement (US Department of State, n.d.; Kux, 2001). It would therefore be misleading to use the military-alliance period as a baseline of complete strategic alignment. New technology cooperation is not necessarily a departure from a previously coherent partnership; it may reproduce the problem of coordinating different expectations. The June 2003 science and technology agreement is important because its timing overlaps with the post-2001 security relationship (US Department of State, 2003). It provides an announcement-level observation of institutionalised civilian cooperation during an intensely security-focused era. The record does not establish how much of that cooperation involved AI, and the article makes no such claim. Its narrower implication is that the sequence is better understood as overlapping agendas than as two mutually exclusive periods. The distinction also prevents technology from being treated as inherently civilian. Contemporary systems can have uses across research, administration, commerce, and defence. Dafoe (2015) cautions against overly deterministic accounts of technological change. Johnson (2019), Sechser et al. (2019), and Scharre (2018) identify different security implications of emerging and autonomous technologies. Their work supports asking how a particular capability is used and governed rather than presuming that a technology partnership necessarily reduces security competition.

Contemporary policy context and announcement evidence

The White House's July 2025 AI Action Plan places international AI diplomacy alongside innovation and infrastructure. It includes both promotion of American AI exports to allies and partners and strengthened attention to compute-related export-control enforcement (The White House, 2025, pp. 20–22). This combination is consistent with the possibility of differentiated access. It does not show that Pakistan received, requested, or was denied a particular authorisation, and it cannot substitute for a bilateral record. An indexed US Mission Pakistan announcement dated 2 September 2026 explicitly refers to expanding economic and AI partnerships (US Mission Pakistan, 2026). Its title supplies evidence that AI is part of contemporary diplomatic communication. The full underlying statement was not accessible for substantive examination, and it is not used here to infer funding amounts, named projects, institutional commitments, or implementation. This distinction is consequential: a visible agenda is an observation, but a completed strategic transformation is a separate claim.

The accessible material therefore supports a bounded conclusion. AI has a place in the policy environment surrounding the relationship, and civilian technological cooperation has historical antecedents. Whether contemporary initiatives amount to a new institutional settlement remains unestablished. The research value lies in making that uncertainty explicit and specifying which observations would resolve it.

The economic baseline

USTR reports US goods exports to Pakistan of approximately US\$3.1 billion and goods imports from Pakistan of US\$5.4 billion in 2025. Corresponding services flows were approximately US\$1.8 billion and US\$1.1 billion (Office of the United States Trade Representative, n.d.). Figure 2 displays those four reported values using the same calendar year, unit, and US reporting perspective. It provides economic context rather than an estimate of AI cooperation.



Figure 2. Reported US trade with Pakistan in 2025, US\$ billions. Source: Office of the United States Trade Representative (n.d.), Pakistan Trade Summary, retrieved 15 September 2026. Values are rounded source estimates. Services include more than IT or AI; these bars must not be interpreted as AI trade. The four rounded components sum to 11.4, while USTR reports an overall estimate of 11.5; no adjustment has been made to force agreement.

The chart demonstrates why economic evidence must be interpreted carefully. Goods and services differ in their composition and in the balance of reported flows. Neither category identifies ownership of critical AI inputs, the share of spending retained by domestic firms, or technology-specific contractual restrictions. A trade surplus in one category cannot establish autonomy in another. These are distinct variables that require distinct sources. A longer series could help situate changes in economic exchange, but it would not solve this identification problem. Even an increase in IT-service exports could reflect conventional software work, exchange-rate effects, improved reporting, or changes in global demand. Attribution to AI would require a defensible sectoral classification and an appropriate design. This article therefore avoids constructing a historical “AI partnership index” from unrelated trade, aid, and military indicators.

Where cooperation could become consequential

The framework identifies several areas worth investigating rather than certifying them as existing bilateral programmes. One is research collaboration that leaves a durable capability in a Pakistani institution. Evidence would include repeated joint outputs, local responsibility for maintaining

research infrastructure, and funding beyond a launch event. Another is application development in which local organisations retain the ability to inspect performance and adapt systems to language, administrative, or environmental conditions. A third area is governance cooperation. NIST's AI Risk Management Framework offers an approach organised around governing, mapping, measuring, and managing AI risk (National Institute of Standards and Technology, 2023). It can inform an evaluation framework, but the availability of a US framework does not demonstrate Pakistani adoption or bilateral harmonisation. Any claim of policy transfer must identify the adopting institution and the specific procedure or rule that changed.

Public-service uses also require a distributive assessment. Sen (1999) treats development in terms of substantive freedoms, while Ostrom (1990) highlights the importance of institutional arrangements in governing shared resources. Applied here, these perspectives suggest examining access, voice, and accountability alongside efficiency. An AI application is not a successful development partnership merely because it functions technically or increases administrative speed.

China and the boundaries of diversification

Pakistan's relationship with China changes the context in which US cooperation is negotiated, but its effect cannot be assumed to be uniformly restrictive or enabling. Small (2015) establishes the strategic importance of the China–Pakistan relationship. Hedging research suggests that states may preserve several relationships to manage uncertainty (Kuik, 2008, 2021). However, an explanation based on competition among powers must still identify the mechanism linking those relationships to a particular technology decision. One possibility is that alternative providers strengthen Pakistan's negotiating position. Another is that concerns about systems integration, data access, or third-party relationships narrow the cooperation available. A third is that different sectors remain sufficiently separate for both relationships to continue. The current evidence does not adjudicate among these possibilities. Contracts, negotiation records, and documented approval decisions would be more informative than a general claim that Pakistan must choose between Washington and Beijing.

The distinction between state and firm is equally important. An American firm's commercial transaction is not automatically a US strategic commitment. A university collaboration need not signal a government-level alignment. Conversely, private actors operate within political and regulatory environments that can shape their choices. Treating these relationships as connected but analytically distinct avoids both state-centric reduction and an implausible separation of markets from power.

Discussion and Contribution

What the evidence establishes

The evidence supports the coexistence of different cooperation agendas more clearly than it supports their replacement. The 1954 and 2003 records show that alliance history and civilian technological cooperation belong to the same long relationship. The contemporary US policy document combines outward technological engagement with concern over strategic control. The trade data establish economic exchange, while the September 2026 announcement establishes the visibility of AI in diplomatic language. These observations do not constitute an operational inventory of bilateral AI projects. The framework contributes by separating questions frequently combined in public discussion. How many areas of cooperation exist? How far have their commitments been implemented? Who controls the inputs on which they depend? What capabilities persist locally? A relationship can change on one dimension without changing equally on the others. This separation permits a more precise account of both progress and dependence.

It also makes a particular contribution to accounts of weaponized interdependence. The original framework explains potential leverage associated with network positions. The present argument shifts attention to the receiving state's project-level experience: access may expand in selected areas while the conditions of access continue to reproduce dependence. This is a proposed extension in analytical emphasis, not a claim that the article has demonstrated a new general law of international politics.

Competing explanations and limits

The layering interpretation remains provisional. A replacement account would gain support if budgets, organisational mandates, and repeated high-level decisions demonstrated that technology cooperation had displaced security cooperation in sustained ways. A signalling account would gain support if announcements repeatedly failed to produce contractual or operational developments. The present observation of an agenda is compatible with either meaningful future cooperation or limited follow-through. Historical institutionalism helps explain why older arrangements might persist, but persistence must be observed rather than assumed (Pierson, 2000; Mahoney & Thelen, 2010). Jervis (1978) additionally reminds us that actions intended to increase security can produce concern elsewhere. A technology initiative may be commercially modest yet politically sensitive if its participants interpret its future uses differently. These expectations should be investigated through contemporaneous records, not inferred solely from later outcomes.

Selection bias is a significant limitation. Official sources are more likely to publicise cooperation than failed negotiations, while commercial confidentiality can conceal restrictive terms. English-language sources may underrepresent domestic debate and provincial implementation. The absence of interview evidence limits understanding of motivations. There is no independent coding team, intercoder-reliability statistic, or comprehensive programme census in this study; none should be inferred from its use of explicit categories. The normative scope is also limited. Technological autonomy is not necessarily beneficial if it increases unaccountable domestic surveillance. International openness is not necessarily beneficial if it produces avoidable dependence or exclusion. The relevant assessment must consider capability, accountability, and distribution together. UNESCO's framework and work on digital repression support this broader evaluation without predetermining the result for Pakistan (UNESCO, 2022; Feldstein, 2021).

Implications for policy and further research

For policymakers, the central implication is to make partnerships assessable. A useful agreement should identify the responsible organisations, the resources committed, the rights attached to data and outputs, and the criteria for judging delivery. These are recommendations derived from the framework. They are not evidence that existing agreements omit those provisions. Greater transparency would make it easier to distinguish genuine capability formation from repeated announcements.

For Pakistani institutions, local ownership should be assessed through practical rights and abilities. Who can update a model? Who can audit an adverse result? Can the institution continue operating the system if a grant ends? Can data and workflows move to another provider? Such questions translate autonomy into observable conditions. They avoid the unrealistic assumption that meaningful agency requires producing every technological input domestically. For US institutions, credible cooperation depends on stating its scope accurately. A bounded research collaboration may be valuable on its own terms. Presenting it as a comprehensive technological realignment would create expectations that it cannot satisfy. Predictability about responsibilities and restrictions can be more useful to implementing organisations than expansive language about strategic transformation.

The next empirical stage should assemble a dated initiative register covering both announced and implemented activities. An expanded study could compare research and skills, commercial applications, governance cooperation, and sensitive infrastructure. Within each area, it should include delays, terminations, and rejected proposals where records exist. Interviews with relevant officials, researchers, firms, and civil-society specialists could then address motivations and implementation, subject to appropriate consent and institutional ethics requirements. These interviews have not been conducted for this article.

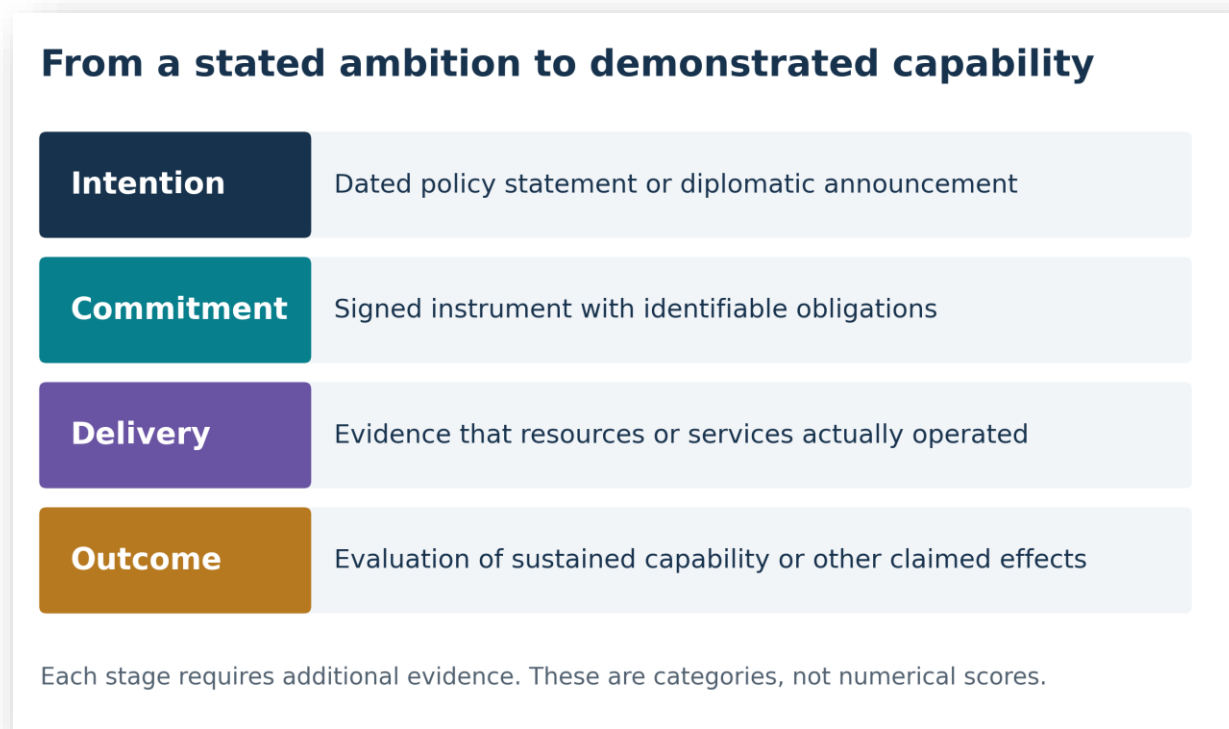


Figure 3. Evidence required to evaluate a technology partnership. This qualitative ladder distinguishes documented intention, commitment, delivery, and outcome. The categories are proposed research rules and carry no numerical scores. A higher category requires additional evidence; publicity alone does not advance an initiative.

Comparative extension should follow the mechanism rather than select countries merely because they are geographically close. Suitable comparisons would vary access restrictions, institutional capacity, or availability of alternatives while preserving a comparable type of technology project. Beach and Pedersen (2019) and Ragin (1987) offer methodological resources for developing such designs. No cross-national causal comparison is claimed here.

Conclusion

Pakistan–US relations should not be described as having completed a transition from military alliances to AI partnerships on the basis of diplomatic language. Civilian technological cooperation has earlier roots, and contemporary policy combines opportunities for exchange with concerns about strategic control. The available evidence is compatible with new layers of cooperation, but the extent of their implementation and their consequences for autonomy remain unresolved.

Selective technological interdependence offers a way to investigate that unresolved change. Its contribution is to distinguish expanding participation from control over critical inputs and from domestic capability formation. The resulting research agenda asks not only whether cooperation grows, but what it enables Pakistani institutions to do, under whose conditions, and for how long. These questions make the topic suitable for a substantive scholarly inquiry while keeping its conclusions within the evidence presently available.

References

1. Acharya, A. (2014). Global International Relations (IR) and regional worlds: A new agenda for international studies. *International Studies Quarterly*, 58(4), 647–659. <https://doi.org/10.1111/isqu.12171>
2. Baldwin, D. A. (1985). *Economic statecraft*. Princeton University Press.
3. Barnett, M., & Duvall, R. (2005). Power in international politics. *International Organization*, 59(1), 39–75. <https://doi.org/10.1017/S0020818305050010>
4. Beach, D., & Pedersen, R. B. (2019). *Process-tracing methods: Foundations and guidelines (2nd ed.)*. University of Michigan Press.
5. Bennett, A., & Checkel, J. T. (Eds.). (2015). *Process tracing: From metaphor to analytic tool*. Cambridge University Press.
6. Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
7. Bradford, A. (2023). *Digital empires: The global battle to regulate technology*. Oxford University Press.
8. Bresnahan, T. F., & Trajtenberg, M. (1995). General purpose technologies “Engines of growth”? *Journal of Econometrics*, 65(1), 83–108. [https://doi.org/10.1016/0304-4076\(94\)01598-T](https://doi.org/10.1016/0304-4076(94)01598-T)
9. Cohen, S. P. (2004). *The idea of Pakistan*. Brookings Institution Press.
10. Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152. <https://doi.org/10.2307/2393553>
11. Collier, D. (2011). Understanding process tracing. *PS: Political Science & Politics*, 44(4), 823–830. <https://doi.org/10.1017/S1049096511001429>
12. Cooley, A., & Nexon, D. H. (2020). *Exit from hegemony: The unraveling of the American global order*. Oxford University Press.
13. Couldry, N., & Mejias, U. A. (2019). *The costs of connection: How data is colonizing human life and appropriating it for capitalism*. Stanford University Press.
14. Crawford, K. (2021). *Atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press.
15. Dafoe, A. (2015). On technological determinism: A typology, scope conditions, and a mechanism. *Science, Technology, & Human Values*, 40(6), 1047–1076. <https://doi.org/10.1177/0162243915579283>
16. David, P. A. (1990). The dynamo and the computer: An historical perspective on the modern productivity paradox. *American Economic Review*, 80(2), 355–361.
17. Ding, J. (2024). *Technology and the rise of great powers: How diffusion shapes economic competition*. Princeton University Press.
18. Ding, J., & Dafoe, A. (2021). The logic of strategic assets: From oil to AI. *Security Studies*, 30(2), 182–212. <https://doi.org/10.1080/09636412.2021.1915583>
19. Ding, J., & Dafoe, A. (2023). Engines of power: Electricity, AI, and general-purpose, military transformations. *European Journal of International Security*, 8(3), 377–394. <https://doi.org/10.1017/eis.2023.1>

20. Drezner, D. W. (2007). *All politics is global: Explaining international regulatory regimes*. Princeton University Press.
21. Drezner, D. W., Farrell, H., & Newman, A. L. (Eds.). (2021). *The uses and abuses of weaponized interdependence*. Brookings Institution Press.
22. Evans, P. (1995). *Embedded autonomy: States and industrial transformation*. Princeton University Press.
23. Fair, C. C. (2014). *Fighting to the end: The Pakistan Army's way of war*. Oxford University Press.
24. Farrell, H., & Newman, A. L. (2019). Weaponized interdependence: How global economic networks shape state coercion. *International Security*, 44(1), 42–79. https://doi.org/10.1162/isec_a_00351
25. Farrell, H., & Newman, A. L. (2023). *Underground empire: How America weaponized the world economy*. Henry Holt and Company.
26. Feldstein, S. (2021). *The rise of digital repression: How technology is reshaping power, politics, and resistance*. Oxford University Press. <https://doi.org/10.1093/oso/9780190057497.001.0001>
27. George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences*. MIT Press.
28. Gerring, J. (2004). What is a case study and what is it good for? *American Political Science Review*, 98(2), 341–354. <https://doi.org/10.1017/S0003055404001182>
29. Gilpin, R. (1981). *War and change in world politics*. Cambridge University Press.
30. Haqqani, H. (2013). *Magnificent delusions: Pakistan, the United States, and an epic history of misunderstanding*. PublicAffairs.
31. Hirschman, A. O. (1945). *National power and the structure of foreign trade*. University of California Press.
32. Horowitz, M. C. (2010). *The diffusion of military power: Causes and consequences for international politics*. Princeton University Press.
33. Horowitz, M. C. (2018). Artificial intelligence, international competition, and the balance of power. *Texas National Security Review*, 1(3), 36–57. <https://doi.org/10.15781/T2639KP49>
34. Horowitz, M. C. (2020). Do emerging military technologies matter for international politics? *Annual Review of Political Science*, 23, 385–400. <https://doi.org/10.1146/annurev-polisci-050718-032725>
35. Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi.org/10.1177/1049732305276687>
36. Ikenberry, G. J. (2001). *After victory: Institutions, strategic restraint, and the rebuilding of order after major wars*. Princeton University Press.
37. Jervis, R. (1978). Cooperation under the security dilemma. *World Politics*, 30(2), 167–214. <https://doi.org/10.2307/2009958>
38. Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, 1, 389–399. <https://doi.org/10.1038/s42256-019-0088-2>
39. Johnson, J. (2019). Artificial intelligence & future warfare: Implications for international security. *Defense & Security Analysis*, 35(2), 147–169. <https://doi.org/10.1080/14751798.2019.1600800>
40. Keohane, R. O. (1984). *After hegemony: Cooperation and discord in the world political economy*. Princeton University Press.
41. Keohane, R. O., & Nye, J. S. (1977). *Power and interdependence: World politics in transition*. Little, Brown.
42. Krasner, S. D. (1999). *Sovereignty: Organized hypocrisy*. Princeton University Press.

43. Kuik, C.-C. (2008). The essence of hedging: Malaysia and Singapore's response to a rising China. *Contemporary Southeast Asia*, 30(2), 159–185. <https://doi.org/10.1355/CS30-2A>
44. Kuik, C.-C. (2021). Getting hedging right: A small-state perspective. *China International Strategy Review*, 3, 300–315. <https://doi.org/10.1007/s42533-021-00089-5>
45. Kux, D. (2001). *The United States and Pakistan, 1947–2000: Disenchanted allies*. Woodrow Wilson Center Press; Johns Hopkins University Press.
46. Kwet, M. (2019). Digital colonialism: US empire and the new imperialism in the Global South. *Race & Class*, 60(4), 3–26. <https://doi.org/10.1177/0306396818823172>
47. Lake, D. A. (2009). *Hierarchy in international relations*. Cornell University Press.
48. Lieven, A. (2011). *Pakistan: A hard country*. Allen Lane.
49. Mahoney, J., & Thelen, K. (Eds.). (2010). *Explaining institutional change: Ambiguity, agency, and power*. Cambridge University Press.
50. Mazzucato, M. (2013). *The entrepreneurial state: Debunking public vs. private sector myths*. Anthem Press.
51. National Institute of Standards and Technology. (2023). *Artificial intelligence risk management framework (AI RMF 1.0) (NIST AI 100-1)*. <https://doi.org/10.6028/NIST.AI.100-1>
52. North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.
53. Office of the United States Trade Representative. (n.d.). *Pakistan trade summary*. Retrieved September 15, 2026, from <https://ustr.gov/countries-regions/south-central-asia/pakistan>
54. Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
55. Paul, T. V. (2014). *The warrior state: Pakistan in the contemporary world*. Oxford University Press.
56. Pierson, P. (2000). Increasing returns, path dependence, and the study of politics. *American Political Science Review*, 94(2), 251–267. <https://doi.org/10.2307/2586011>
57. Posen, B. R. (1984). *The sources of military doctrine: France, Britain, and Germany between the world wars*. Cornell University Press.
58. Ragin, C. C. (1987). *The comparative method: Moving beyond qualitative and quantitative strategies*. University of California Press.
59. Rodrik, D. (2007). *One economics, many recipes: Globalization, institutions, and economic growth*. Princeton University Press.
60. Rosen, S. P. (1991). *Winning the next war: Innovation and the modern military*. Cornell University Press.
61. Scharre, P. (2018). *Army of none: Autonomous weapons and the future of war*. W. W. Norton.
62. Sechser, T. S., Narang, N., & Talmadge, C. (2019). Emerging technologies and strategic stability in peacetime, crisis, and war. *Journal of Strategic Studies*, 42(6), 727–735. <https://doi.org/10.1080/01402390.2019.1626725>
63. Sen, A. (1999). *Development as freedom*. Alfred A. Knopf.
64. Small, A. (2015). *The China–Pakistan axis: Asia's new geopolitics*. Hurst.
65. Snyder, G. H. (1984). The security dilemma in alliance politics. *World Politics*, 36(4), 461–495. <https://doi.org/10.2307/2010183>
66. Strange, S. (1988). *States and markets*. Pinter.
67. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
68. The White House. (2025). *America's AI action plan*. <https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf>

69. UNESCO. (2022). *Recommendation on the ethics of artificial intelligence*. <https://unesdoc.unesco.org/ark:/48223/pf0000381137>
70. US Department of State. (2003, June 26). *United States signs science and technology cooperation agreement with Pakistan*. <https://2001-2009.state.gov/r/pa/prs/ps/2003/21981.htm>
71. US Department of State. (n.d.). *Southeast Asia Treaty Organization (SEATO), 1954*. Office of the Historian. <https://history.state.gov/milestones/1953-1960/seato>
72. US Mission Pakistan. (2026, September 2). *U.S. Chargé d’Affaires Natalie Baker highlights expanding U.S.–Pakistan economic and AI partnerships*. <https://pk.usembassy.gov/u-s-charge-daffaires-natalie-baker-highlights-expanding-u-s-pakistan-economic-and-ai-partnerships/>
73. Walt, S. M. (1987). *The origins of alliances*. Cornell University Press.
74. Waltz, K. N. (1979). *Theory of international politics*. Addison-Wesley.
75. Weiss, L. (2014). *America Inc.? Innovation and enterprise in the national security state*. Cornell University Press.
76. World Bank. (2016). *World development report 2016: Digital dividends*. <https://doi.org/10.1596/978-1-4648-0671-1>
77. Yin, R. K. (2018). *Case study research and applications: Design and methods (6th ed.)*. SAGE.