Journal of Cyberspace Studies
eISSN: 2588-5502
http://jcss.ut.ac.ir
University of Tehran

# Competing models of AI statecraft: Techno-nationalism, governance divergence, and the India-China rivalry in the emerging global AI order, 2020-2026

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**Article Info**

Original article

Main Object: Humanities & Social Sciences; Artificial Intelligence; Statecraft

Received: 08 August 2026
Revised: 30 August 2026
Accepted: 11 September 2026
Published online: 15 September 2026

**Keywords:**
AI governance models, India-China AI rivalry, policy diffusion, sovereign AI, techno-nationalism

**Abstract**

**Background:** Artificial intelligence has emerged as a general-purpose technology reshaping economic competitiveness, military capability, public administration, and normative order. Between 2020 and 2026, the intensifying competition between India and China has become a defining feature of this global transformation.
**Aims:** This article argues that the India-China AI rivalry transcends mere technical metrics, such as research output or compute capacity, to represent a clash between contrasting models of AI statecraft.
**Methodology:** Drawing on techno-nationalism, neo-realism, and policy-diffusion theory, this study demonstrates that while both nations treat AI as a strategic asset, they organize its development through fundamentally distinct institutional architectures and normative commitments.
**Findings:** China's approach is characterized by centralized coordination, long-horizon industrial policy, civil-military fusion, and the systematic construction of a sovereign AI ecosystem spanning data, standards, and deployment. Conversely, India's model, articulated through frameworks like #AIForAll and the IndiaAI Mission, prioritizes inclusive innovation, ethical accountability, digital public infrastructure, and developmental applications. China's quantitative leadership in scale and infrastructure is tempered by concerns regarding international trust and regulatory legitimacy. Meanwhile, India's strengths in human capital and ethical framing remain constrained by fragmentation and commercialization gaps. The rivalry carries implications far beyond bilateral relations: it shapes the menu of governance models available to the Global South and influences the evolution of global AI norms, standards, and technological autonomy
**Conclusion:** By situating this competition within a comparative institutional analysis, the article contributes to scholarship on emerging-technology geopolitics, sovereign AI, and the politics of digital infrastructure in the Indo-Pacific.

**Cite this article:** Mozaffari Falarti M, Khoshabi S. (????). "Competing models of AI statecraft: Techno-nationalism, governance divergence, and the India-China rivalry in the emerging global AI order, 2020-2026". *Cyberspace Studies*. ?(?): 1-33. doi: https://doi.org/10.22059/jcss.2026.420355.1275.


Website: https://jcss.ut.ac.ir/| Email: jcss@ut.ac.ir |
EISSN: 2588-5502
Publisher: University of Tehran

*Cyberspace Studies*, Vol ?, No ?, ????

## 1. Introduction

Artificial intelligence (AI) has rapidly evolved from a specialised field of computer science into a foundational general-purpose technology capable of reshaping economic production, military capabilities, healthcare, education, finance, and public administration. Governments increasingly regard AI not simply as a source of technological innovation but as a strategic asset capable of influencing national competitiveness, security, technological sovereignty, and international power. In this respect, AI increasingly resembles earlier domains of strategic technological competition, including nuclear technology, space systems, and information networks (Zhu et al., 2022; Zhang et al., 2025; Bose, 2026; Saalman, 2026). The emergence of AI as a strategic technology has consequently transformed technological development into an increasingly important arena of geopolitical competition.

Within this broader transformation, the India-China relationship represents a particularly significant case. Both countries are major Asian powers with substantial human capital, expanding technological ecosystems, large domestic markets, and ambitions for greater strategic autonomy (Mozaffari Falarti, 2024). Both have identified AI as a national priority and have invested in research, infrastructure, talent development, industrial applications, and military capabilities. Yet they have pursued these objectives through markedly different institutional and normative pathways (MOST, 2017; Kumar, 2021; Singh & Kumar, 2025). Their competition therefore raises a question that extends beyond conventional measurements of technological capability: whether different institutional arrangements for organising AI produce distinct forms of technological statecraft and, consequently, different pathways toward technological leadership.

The central argument of this article is that the India-China AI rivalry should not be understood solely as a competition over research output, patents, computational capacity, foundation models, or military applications. Rather, it represents a broader contest between competing models of AI statecraft. China has pursued a highly coordinated model characterised by centralised strategic planning, long-horizon industrial policy, civil-military integration, and the construction of a sovereign AI ecosystem spanning data, computing infrastructure, education, standards, research, and industrial deployment (Kumar, 2021; Bose, 2026). India, by contrast, has developed a more hybrid model that combines strategic state direction with private-sector dynamism, democratic institutions, ethical and responsible AI principles, developmental applications, multilingual innovation, digital public infrastructure, and international partnerships (NITI Aayog, 2018; Singh & Kumar, 2025).

This divergence is particularly important because technological capability and governance architecture are not independent variables.

The institutional arrangements through which states mobilise resources, coordinate public and private actors, develop talent, regulate AI systems, and integrate civilian and military applications shape both the scale of technological development and the legitimacy with which such technologies are received domestically and internationally. China's institutional coherence has generated considerable advantages in research scale, infrastructure, commercialisation, and military absorption, whereas India's more pluralistic model has generated strengths in human capital, digital public infrastructure, inclusivity, and normative positioning (MOST, 2017; Chen et al., 2020; Bose, 2026; Saalman, 2026).

This argument contributes to an emerging literature on the geopolitics of artificial intelligence, sovereign AI, and technological statecraft. Existing scholarship has examined national AI strategies independently, compared research and patent outputs, analysed US-China technological competition, and explored the relationship between AI and military or nuclear capabilities (Chen et al., 2020; Kumar, 2021; Satyadhar, 2026; Saalman, 2026). Other recent work has demonstrated that India and China have adopted substantially different approaches to AI regulation, with China placing greater emphasis on competitiveness and security and India adopting a comparatively broader and more incremental decision-making environment (MOST, 2017; Zhu et al., 2022; Zhang et al., 2025).

Nevertheless, fewer studies have systematically examined India and China as competing models of AI statecraft and connected their domestic institutional architectures to the international diffusion of governance models, particularly across the Global South. Bose (2026) provides an important account of the lessons that India may draw from China's coordinated AI ecosystem, while Zhang et al. (2025) compare the regulatory trajectories of China and India. The present article builds on, but does not reproduce, these contributions. Its focus is not primarily policy learning or regulatory comparison. Rather, it examines India and China as competing models of AI statecraft by connecting institutional architecture to research capacity, infrastructure, commercialisation, talent formation, military integration, and international diffusion during the 2020-2026 period. The article therefore offers a comparative institutional synthesis of capability and legitimacy rather than a claim that previous scholarship has ignored India-China AI relations.

The article addresses this gap through a qualitative comparative analysis supported by selected quantitative indicators. It draws on national AI strategies, government policy documents, defence-related reports, official statements, academic research, industry assessments, and indicators relating to research, patents, talent, infrastructure, startups, military applications, and international technology diplomacy. The analysis is guided by three complementary theoretical perspectives.

Techno-nationalism explains why states increasingly treat AI as a strategic national asset; neo-realism explains the security competition and relative-gains dynamics surrounding AI; and policy-diffusion theory explains how national technological and governance models seek influence beyond their domestic environments (Leandro & Oberoi, 2023; Zhang et al., 2025; Truby et al., 2026).

The analysis focuses on the period 2020-2026 because this period captures an important acceleration in both countries' AI strategies. It encompasses the maturation of China's long-term AI planning following the 2017 New Generation Artificial Intelligence Development Plan and subsequent AI+ initiatives, while also covering the expansion of India's sovereign AI ambitions through the IndiaAI Mission and related initiatives (Kumar, 2021; Bose, 2026). It also corresponds with a period of intensified India-China strategic competition, making AI an increasingly consequential component of broader technological and geopolitical rivalry.

The article proceeds in four stages before turning to the empirical analysis. First, it situates contemporary AI competition within the historical evolution of India-China rivalry and the wider Indo-Pacific strategic environment. Second, it establishes the theoretical framework combining techno-nationalism, neo-realism, and policy-diffusion theory. Third, it explains the research design, primary research question, hypothesis, sources, and comparative analytical strategy. The empirical sections then examine the institutional architectures and strategic orientations of the two national AI ecosystems, compare their performance across research, innovation, talent, military integration, and global influence, and assess the implications of their competing models for technological autonomy and the emerging global AI order. The conclusion evaluates the broader theoretical and policy implications of the findings.

## 2. Historical context: The evolution of the India-China rivalry

The contemporary India-China rivalry is rooted in a complex combination of territorial disputes, competing strategic interests, asymmetries of power, regional ambitions, and divergent conceptions of international order. Although the relationship has included periods of diplomatic engagement and economic cooperation, competition has remained a persistent feature of bilateral relations. The two countries' shared but contested Himalayan boundary has been particularly consequential, while their expanding roles in the Indo-Pacific have increasingly extended the rivalry beyond territorial questions into economic, technological, diplomatic, and strategic domains (Kumar, 2021; Mozaffari Falarti, 2024; Fong, 2025).

The boundary dispute has historically provided the most visible source of strategic tension. The 1962 Sino-Indian War established a lasting legacy of mistrust, while subsequent efforts to manage the

disputed Line of Actual Control (LAC) reduced but did not eliminate the possibility of confrontation. Bilateral agreements during the 1990s and 2000s helped establish mechanisms for maintaining relative stability along the frontier, allowing economic and diplomatic relations to expand despite unresolved territorial disagreements. This period demonstrated that cooperation and competition could coexist within the relationship. Nevertheless, underlying strategic mistrust persisted, particularly as China's economic and military capabilities expanded and India increasingly sought a greater role in Asian and global affairs (Fong, 2025; Madan, 2020).

The relationship entered a substantially more difficult phase during the 2010s. China's growing presence in South Asia and the Indian Ocean, its close strategic relationship with Pakistan, and the expansion of its regional infrastructure and connectivity initiatives contributed to Indian concerns about China's long-term strategic intentions. At the same time, Beijing increasingly viewed India's expanding partnerships with the United States, Japan, Australia, and other Indo-Pacific actors through the lens of wider strategic competition. India consequently moved toward a form of competitive engagement that combined continued economic interaction with efforts to strengthen strategic partnerships and national capabilities (Madan, 2020; Satyadhar, 2026; Chadha, 2026).

The events of 2020 represented a major turning point. A prolonged military confrontation along the LAC, culminating in the violent Galwan Valley clash in June 2020, produced the first fatalities along the disputed frontier in decades and fundamentally altered the political environment surrounding bilateral relations (Chadha, 2024). The confrontation generated a broader deterioration in political trust and contributed to the securitisation of economic and technological relations. India subsequently introduced restrictions affecting Chinese investment and technology companies and banned a large number of Chinese mobile applications, while concerns regarding supply-chain dependence and technological vulnerabilities became increasingly prominent in Indian strategic discourse (Fong, 2025).

The significance of the post-2020 rivalry extends beyond the immediate border dispute. The crisis demonstrated how developments in one domain could rapidly spill into others, including trade, investment, digital infrastructure, cyber capabilities, and technology policy. The resulting strategic environment strengthened India's emphasis on technological self-reliance and reduced dependence on Chinese technological ecosystems. At the same time, China's broader technological ambitions and growing military modernisation reinforced Indian perceptions that technological capability was inseparable from national security (MOST, 2017; Zhu et al., 2022). AI consequently emerged within an already securitised relationship rather than as an isolated area of technological innovation.

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This transformation is particularly important because both India and China increasingly conceptualise technological capability as a component of national power. China's broader development strategy has linked technological innovation to economic modernisation, military capability, national security, and international influence. Its 2017 New Generation Artificial Intelligence Development Plan explicitly identified AI as a strategic technology and established long-term objectives for domestic technological development and global leadership (Kumar, 2021). India, while following a different institutional trajectory, has similarly moved toward treating AI as an instrument of national development, technological sovereignty, strategic capability, and international influence. Its 2018 National Strategy for Artificial Intelligence and subsequent IndiaAI Mission demonstrate this shift from AI as a sectoral innovation issue toward AI as an element of national strategy (NITI Aayog, 2018; Singh & Kumar, 2025; Ganaie et al., 2026).

The wider Indo-Pacific environment has reinforced this process. India increasingly participates in strategic arrangements such as the Quad and has expanded technological and defence cooperation with the United States, France, Japan, and other partners (Mozaffari Falarti, 2024; Wang et al., 2025; Satyadhar, 2026). China, meanwhile, has developed extensive technological partnerships, infrastructure initiatives, standards engagement, and international technology diplomacy. These developments mean that India-China competition increasingly intersects with broader debates about technological sovereignty, digital infrastructure, supply-chain resilience, and the distribution of technological power.

The post-2020 period should nevertheless not be understood as an irreversible transition from competition to permanent confrontation. Diplomatic engagement has gradually resumed, including the 2024 agreement concerning disengagement and renewed high-level contacts during 2025 and 2026. Recent assessments suggest that the relationship has entered a phase of cautious stabilisation and re-engagement, although significant structural mistrust and strategic competition remain (Mozaffari Falarti, 2024; Ganaie et al., 2026; Kewalramani, 2026; Chadha, 2026). This combination of stabilisation and continuing competition is particularly relevant to technological relations: even where direct confrontation is reduced, both states retain strong incentives to strengthen domestic technological capabilities and strategic autonomy.

AI therefore represents a new layer within a much older strategic relationship. The historical trajectory from territorial rivalry to broader strategic and technological competition provides the context in which the two states have constructed distinct AI strategies. Their approaches cannot be understood exclusively as responses to the technological opportunities presented by AI; they are also responses to concerns about

relative power, strategic autonomy, security, and international influence. The emergence of AI as a domain of India-China competition is consequently part of a broader transformation in the character of their rivalry, from competition over territory and regional influence toward competition over the infrastructures, capabilities, standards, and governance models that will shape future technological power.

This historical context provides the foundation for the theoretical framework that follows (Wang et al., 2025; Satyadhar, 2026). If AI has become embedded within wider struggles over national power and technological sovereignty, understanding the rivalry requires analytical approaches capable of connecting technological development to state strategy, security competition, and the international diffusion of governance models.

## 3. Theoretical framework: Techno-nationalism, neo-realism and policy diffusion

Understanding the India-China AI rivalry requires a theoretical framework capable of connecting technological development with state strategy, international competition, and the diffusion of governance models. AI is simultaneously an economic resource, a strategic capability, a component of military power, and an emerging field of international rule-making. No single theoretical perspective therefore fully captures the multidimensional character of the competition. This study combines three complementary approaches: techno-nationalism, neo-realism, and policy-diffusion theory. Techno-nationalism constitutes the principal organising perspective, while neo-realism explains the competitive security environment in which national AI strategies develop, and policy-diffusion theory illuminates the international circulation and potential adoption of competing AI governance models.

### 3.1. Techno-nationalism

Techno-nationalism conceptualises technology as a core component of national competitiveness, economic security, strategic autonomy, and international influence rather than as a purely market-driven product (Zhang et al., 2025). From this perspective, states do not simply respond to technological change; they actively shape technological trajectories through industrial policy, targeted investment, institutional coordination, regulation, education, infrastructure development, and strategic planning. Technologies that possess broad economic and military applications can consequently become instruments of state power.

AI represents an especially strong manifestation of techno-nationalism because its applications extend across civilian and military domains. Control over computing infrastructure, data, algorithms, semiconductor supply chains, research institutions, talent, and

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industrial ecosystems increasingly influence national technological autonomy. The state therefore becomes an important actor in determining not only the amount of investment directed toward AI but also the institutional architecture through which AI is produced, regulated, and deployed.

China represents a particularly pronounced form of techno-nationalism. The 2017 New Generation Artificial Intelligence Development Plan established explicit objectives for achieving international competitiveness and eventually positioning China as a global centre of AI innovation by 2030. The plan assigned responsibilities across government ministries and connected AI development to industrial upgrading, education, national security, and military-civilian integration (Kumar, 2021). Subsequent AI+ initiatives, standards frameworks, education policies, and sector-specific programmes have further institutionalised this approach (Bose, 2026). AI is thus embedded within a broader state-led strategy for technological modernisation and national power.

India has also increasingly adopted elements of techno-nationalism, although through a substantially different institutional form. The 2018 National Strategy for Artificial Intelligence, developed under the banner of #AIForAll, framed AI as an instrument of inclusive development and identified healthcare, agriculture, education, smart cities, and mobility as priority areas (NITI Aayog, 2018; Ganaie et al., 2026). The IndiaAI Mission, investments in domestic computing infrastructure, multilingual initiatives such as Bhashini, and sovereign model initiatives such as BharatGen demonstrate a growing concern with domestic AI capacity and technological autonomy (Singh & Kumar, 2025; Bose, 2026). India's model can therefore be understood as a hybrid form of techno-nationalism that combines strategic state intervention with private-sector participation, democratic accountability, ethical principles, and developmental priorities (Kataria et al., 2025).

The analytical significance of techno-nationalism in this study is therefore not simply that both states regard AI as strategically important. Rather, the concept enables comparison of how states translate strategic technological priorities into institutional arrangements. China's model emphasises central coordination, mobilisation capacity, long-term planning, and integration between civilian and military sectors. India's model places greater emphasis on distributed institutional participation, developmental applications, private-sector dynamism, and normative legitimacy. The same broad objective, technological advancement and strategic autonomy, thus produces different organisational outcomes.

### 3.2. Neo-realism and the security dimension of AI competition

Neo-realism provides a complementary explanation for why AI has

become a central domain of interstate competition. In an international system characterised by anarchy, states remain concerned with their relative capabilities because material capabilities influence their security and freedom of action. AI's dual-use character intensifies these concerns because advances in AI can affect economic productivity, intelligence analysis, autonomous systems, cyber operations, command-and-control, surveillance, precision guidance, and strategic early warning (Leandro & Oberoi, 2023; Saalman, 2026).

From a neo-realist perspective, the India-China AI relationship cannot be separated from the broader security dilemma in the Indo-Pacific. China's development of AI-enabled military systems and its integration of AI into defence applications contribute to Indian perceptions of technological and strategic vulnerability. India's resulting investment in defence AI, autonomous systems, and technological partnerships can, in turn, be interpreted in Beijing as part of a wider effort to constrain Chinese technological freedom of action. Partnerships involving the United States, France, the Quad, and other actors therefore possess significance beyond technological cooperation alone (Saalman, 2026; Singh & Kumar, 2025).

The neo-realist perspective also helps explain the limited prospects for comprehensive India-China technological cooperation. Even where technological complementarities exist, the possibility that one state could gain greater strategic capabilities from cooperation creates relative-gains concerns. In a domain perceived as central to military and economic security, states have incentives to maintain control over critical technologies, data, infrastructure, and supply chains. Technological sovereignty consequently becomes both an economic objective and a security imperative.

This perspective does not imply that all India-China AI interaction is inherently conflictual. Rather, it suggests that cooperation is likely to remain selective and conditional, particularly where AI has direct military, intelligence, or strategic applications. It also explains why domestic AI capacity-building is closely connected to broader national strategies for resilience and autonomy.

### 3.3. Policy-diffusion theory and the internationalisation of AI governance

The third perspective concerns the international diffusion of AI governance models. States do not merely develop technological capabilities for domestic purposes; they also seek to shape the international standards, regulations, institutional practices, and governance principles through which technologies are adopted elsewhere. Policy-diffusion theory is therefore particularly useful for understanding the international significance of competing national AI strategies.

Diffusion can occur through international organisations, bilateral partnerships, technical assistance, infrastructure projects, standards-

setting bodies, educational networks, open-source or open-weights ecosystems, and demonstration effects generated by successful national programmes (Ganaie et al., 2026; Truby et al., 2026). In this respect, technological leadership is not simply a question of producing superior technologies. It also involves influencing how other states understand, regulate, procure, and deploy those technologies.

China has developed several channels through which its AI model can acquire international influence. These include participation in international standards bodies, technology and infrastructure partnerships associated with the Belt and Road Initiative, regulatory engagement, and the international circulation of open-weights models such as Qwen and DeepSeek (State Council of the People's Republic of China, 2025; Bose, 2026; Truby et al., 2026). China's attractiveness to some developing countries derives partly from its capacity to provide technological infrastructure and rapid deployment at scale.

India represents a different diffusion pathway. Its international AI engagement emphasises responsible and ethical AI, multilingual systems, digital public infrastructure, capacity-building, and cooperation among developing and democratic states. Institutions and initiatives associated with the Global Partnership on Artificial Intelligence, the Quad, and partnerships with France and the European Union provide channels through which Indian approaches can acquire international visibility (Mozaffari Falarti, 2024; Singh & Kumar, 2025; Truby et al., 2026). India's experience with Aadhaar, UPI, DigiLocker, and other elements of digital public infrastructure also provides an important demonstration effect for countries seeking interoperable and inclusive technological systems.

Policy diffusion therefore allows the analysis to move beyond the bilateral relationship. The significance of the India-China rivalry lies partly in the possibility that third countries may selectively adopt elements of either model (Kataria et al., 2025). The Global South is consequently not simply an external audience for the rivalry but a potential arena in which the relative attractiveness of competing governance architectures is tested.

### 3.4. Integrating the three perspectives

The three theoretical perspectives perform distinct but complementary analytical functions. Techno-nationalism explains why India and China treat AI as a strategic national asset and why their governments intervene actively in technological development. Neo-realism explains why this technological mobilisation occurs within an environment of strategic competition, relative-gains concerns, and security dilemmas. Policy-diffusion theory explains why the rivalry extends beyond bilateral capability competition into a struggle over standards, governance principles, technological partnerships, and institutional models.

Together, these perspectives establish the analytical framework used throughout the article. At the domestic level, techno-nationalism directs attention to institutional architecture, state coordination, industrial policy, talent development, infrastructure, and technological sovereignty. At the international-security level, neo-realism focuses attention on military applications, strategic competition, relative gains, and constraints on cooperation. At the transnational level, policy diffusion directs attention to international technology diplomacy, standards, partnerships, infrastructure, and the potential adoption of Indian and Chinese governance templates by third countries.

This integrated framework also provides the theoretical basis for the article's main hypothesis. If institutional architecture shapes technological mobilisation, China's centralised model should generate advantages in scale, coordination, infrastructure, commercialisation, and military absorption. If more pluralistic institutional arrangements generate different forms of value, India's model should demonstrate comparatively greater emphasis on inclusivity, accountability, developmental applications, and normative legitimacy. The empirical analysis therefore does not ask simply which country is technologically stronger. It asks how different institutional models produce different combinations of capability, strategic autonomy, and legitimacy.

The framework also addresses an important limitation in existing approaches that focus primarily on quantitative rankings of AI capability. Research output, patents, talent, computing resources, and military systems are important indicators, but they do not independently explain the political and institutional conditions under which these capabilities are produced or the extent to which particular models become internationally attractive. By integrating material capability with institutional architecture and normative diffusion, the present framework treats AI leadership as a multidimensional form of statecraft rather than as a purely technological race.

## 4. Methodology

### 4.1. Research question and main hypothesis

The analysis that follows draws on the documentary corpus summarized in Table 1 and compares India and China across five dimensions: strategic coordination, research and talent formation, infrastructure and commercialisation, governance and regulation, and security and international diffusion.

The study employs a qualitative comparative research design supported by selected quantitative indicators. Its primary research question is:

**RQ:** How have India and China practised AI leadership between 2020 and 2026, and what do their contrasting technological strategies and governance philosophies imply for the emerging global AI order?

**Table 1.** Document corpus and analytical functions

| Corpus category | Principal sources | Analytical function |
|---|---|---|
| Primary policy and regulatory documents | MOST (2017); Ministry of Education (2018); Cyberspace Administration of China et al. (2023); State Council of the People's Republic of China (2025); NITI Aayog (2018); Office of the Principal Scientific Adviser to the Government of India (2025) | Identifying strategic objectives, policy instruments, implementation mechanisms, and regulatory design |
| Official and institutional assessments | Bose (2026); Saalman (2026); Bishnoi (2026); Klair (2026); United Service Institution of India (2026) | Assessing infrastructure, research capacity, defence applications, and ecosystem development |
| Academic and bibliometric studies | Chen et al. (2020); Hu et al. (2020); Vaishya et al. (2025); Wang & Dong (2026); Al-Marzouqi & Arabi (2024) | Examining research output, collaboration, patents, citations, and field-specific evidence |
| Comparative and international scholarship | Zhang et al. (2025); Singh & Kumar (2025); Tran (2026); Sazmand & Amini Jeshvaghani (2026); Truby et al. (2026) | Interpreting governance divergence, policy diffusion, international influence, and comparative statecraft |

**Note:** Sources are grouped according to their primary institutional or analytical function. The categories are not mutually exclusive; some sources contribute to more than one analytical dimension.

The main hypothesis is:

**H1:** The divergent institutional architectures of India and China produce distinct models of AI statecraft: China's more centralised and state-coordinated model generates greater scale, speed, and strategic integration of AI, whereas India's more decentralised and democratic model places comparatively greater emphasis on inclusivity, ethical governance, and normative legitimacy. Consequently, the relative performance and international attractiveness of each model cannot be assessed solely through technological capabilities but must be understood in relation to the institutional and governance structures through which AI is developed and deployed.

The hypothesis is derived directly from the article's theoretical framework and is designed to guide rather than predetermine the comparative analysis. It does not assume that either model is inherently superior. Instead, it proposes that different institutional arrangements generate different combinations of technological capability and governance outcomes. The analysis therefore examines both material indicators of AI capacity and the institutional and normative characteristics through which those capabilities are produced and internationally projected.

Two subsidiary analytical propositions further guide the

comparison. First, greater institutional coordination should be reflected in stronger performance in areas requiring large-scale mobilisation, including research infrastructure, commercialisation, computing capacity, and military integration. Second, more pluralistic and participatory governance arrangements may generate comparative advantages in areas associated with inclusivity, accountability, ethical legitimacy, and international normative appeal. These propositions are treated as analytical expectations rather than as independent statistical hypotheses.

### 4.2. Comparative research design

India and China are selected as a structured comparative case pair because both are major Asian powers that have identified AI as a strategic national capability while developing substantially different institutional approaches to technological governance. The cases therefore provide analytical variation within a broadly comparable context. Both possess large populations and domestic markets, substantial technological and scientific communities, significant state capacity, expanding AI ecosystems, and ambitions for greater technological sovereignty. At the same time, their political systems, institutional structures, strategic cultures, and approaches to AI governance differ considerably.

The study focuses on the period 2020-2026. This temporal boundary captures a particularly significant phase in the development of both countries' AI strategies. For China, it encompasses the consolidation and implementation of the long-term strategic orientation established by the 2017 New Generation Artificial Intelligence Development Plan and the subsequent development of AI+ initiatives, standards frameworks, talent programmes, and industrial applications (Kumar, 2021; Bose, 2026). For India, the period captures the evolution from the 2018 #AIForAll strategy toward the IndiaAI Mission, domestic computing initiatives, multilingual AI programmes, and increasing attention to sovereign AI capabilities (NITI Aayog, 2018; Singh & Kumar, 2025).

The temporal focus also corresponds with the intensification of India-China strategic competition following the 2020 border crisis. AI development during this period must therefore be interpreted within a broader environment of heightened security concerns, technological competition, and efforts to strengthen national resilience and technological autonomy.

### 4.3. Sources and data

The study draws primarily upon documentary and policy evidence from official and institutional sources in India and China. Primary materials include China's 2017 New Generation Artificial Intelligence Development Plan and subsequent AI+ policy instruments, standards

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and regulatory initiatives, education-related AI policies, and official positions concerning military and strategic applications. For India, the principal primary materials include the 2018 National Strategy for Artificial Intelligence (#AIForAll), the IndiaAI Mission and related institutional initiatives, defence AI programmes, digital public infrastructure initiatives, and relevant official statements. The document corpus was assembled purposively and is divided into three categories: primary governmental policy and regulatory documents; official or institutional assessments; and academic, bibliometric, and policy scholarship. Documents were included when they directly addressed one or more of the five analytical dimensions. India and China were selected as a structured comparative pair because both pursue AI-enabled national power and technological sovereignty, while their institutional architectures and governance philosophies differ sufficiently to permit theory-guided comparison.

These primary sources are supplemented by peer-reviewed academic literature, research reports, policy studies, industry assessments, bibliometric studies, patent indicators, and other quantitative evidence concerning AI research, innovation, talent, infrastructure, commercialisation, military applications, and international technology diplomacy. The existing literature provides comparative evidence concerning national AI strategies, research performance, regulation, technological competition, and AI-security relations (Chen et al., 2020; Kumar, 2021; Hu et al., 2020; Al-Marzouqi & Arabi, 2024; Saalman, 2026).

Quantitative indicators are used as supporting evidence rather than as a single composite measure of national AI leadership. This distinction is important because the article conceptualises AI statecraft as multidimensional. A country may perform strongly in research output while remaining constrained in computing infrastructure or commercialisation, or possess considerable technological scale while facing challenges concerning international trust and normative legitimacy. The methodology therefore treats individual indicators as evidence of particular dimensions of AI capability rather than as definitive rankings of overall national performance. The quantitative evidence is heterogeneous and cannot support a single composite ranking of national AI capability. The indicators are therefore used illustratively and dimensionally. Medical-AI bibliometric studies are treated as domain-specific evidence, while broader national indicators are used only where their scope and definitions are sufficiently clear. Differences in period, database coverage, field classification, and citation methodology limit direct cross-national comparability.

### 4.4. Analytical dimensions

The comparative analysis is organised around five interrelated dimensions.

First, research and innovation examines research output, scholarly influence, and the broader capacity of national research ecosystems to generate AI knowledge.

Second, patents and commercialisation examines the capacity to translate research and technological investment into intellectual property, products, firms, and market applications.

Third, talent and education assesses the development of human capital, university programmes, research pipelines, skills, and the institutional mechanisms through which AI expertise is produced and retained.

Fourth, military and dual-use integration examines the incorporation of AI into autonomous systems, intelligence, surveillance, command-and-control, precision systems, cyber operations, and other defence applications. Given the dual-use nature of AI, this dimension is particularly important for understanding the connection between technological development and national security (Saalman, 2026).

Fifth, global influence and technology diplomacy examines international partnerships, standards participation, technology exports, infrastructure cooperation, governance initiatives, and the diffusion of national AI approaches through international networks (Truby et al., 2026).

These dimensions correspond to the theoretical framework. Research, infrastructure, talent, and industrial policy illuminate techno-nationalist mobilisation; military applications and strategic partnerships illuminate neo-realist competition; and international standards, partnerships, and governance initiatives illuminate policy diffusion.

### 4.5. Comparative analytical procedure

The analysis proceeds through structured comparison rather than through a simple descriptive account of each country. Evidence concerning institutional structures, policy objectives, technological capabilities, and international engagement is first examined within each national case and subsequently compared across the five analytical dimensions.

Policy documents are assessed for evidence of strategic priorities, institutional coordination, technological sovereignty, industrial policy, civil-military relations, ethical commitments, and international engagement. These qualitative findings are then considered alongside indicators of research output, patents, talent, infrastructure, commercialisation, military integration, and international influence. The purpose is to identify systematic relationships between institutional architecture and observed patterns of technological development.

The three theoretical perspectives provide the interpretive categories through which these patterns are assessed. Techno-nationalism is used to examine how governments mobilise technological resources and construct national AI ecosystems. Neo-realism is used to interpret the

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security environment, relative-gains considerations, military applications, and constraints on bilateral cooperation. Policy-diffusion theory is used to analyse how India and China seek to extend their preferred technological and governance models through international standards, partnerships, infrastructure, diplomatic networks, and demonstration effects.

The methodology consequently avoids treating technological capability as an isolated variable. Instead, technological outputs are interpreted as products of particular institutional architectures and strategic choices. This makes it possible to evaluate the main hypothesis by asking whether China's more coordinated institutional structure is associated with greater scale and strategic integration, while India's hybrid structure is associated with distinctive advantages in human capital, inclusivity, digital public infrastructure, and normative positioning.

The study also recognises several methodological limitations. The rapid evolution of AI means that indicators and policy frameworks can change quickly, particularly during the 2020-2026 period. Cross-national comparisons of publications, patents, citations, infrastructure, and talent are also sensitive to differences in databases, definitions, and measurement practices. In addition, official opacity surrounding some military and nuclear-related applications limits the ability to assess the full extent of AI integration into strategic decision-making (Saalman, 2026). These limitations are addressed by triangulating quantitative indicators with policy documents, institutional evidence, and secondary scholarship rather than relying upon any single measure.

The methodology therefore provides a structured basis for examining the article's central proposition: that India-China AI competition represents not merely a contest over technological capabilities but a competition between different institutional and normative models of AI statecraft. The subsequent empirical analysis applies this framework to compare the two national AI ecosystems and to assess the implications of their divergent trajectories for the emerging global AI order.

## 5. Divergent models of AI statecraft: Institutional architectures and strategic orientations

The India-China AI rivalry is most clearly visible in the contrasting institutional architectures through which each state organises the development, deployment, and governance of artificial intelligence. China’s model is characterised by long-horizon central coordination, explicit actor responsibilities, civil-military integration, and the systematic construction of a sovereign AI stack. India’s model is hybrid and more decentralised, combining strategic state direction with private-sector dynamism, ethical principles, developmental priorities, and international partnerships. These differences are not merely

organisational; they reflect deeper variations in state capacity, political systems, and conceptions of technological sovereignty (Kumar, 2021; Bose, 2026; Singh & Kumar, 2025).

China's AI strategy rests on the foundational 2017 New Generation Artificial Intelligence Development Plan, which set three sequential goals: achieving parity with advanced countries by 2020, attaining world-leading status in selected domains by 2025, and becoming the global centre of AI innovation by 2030 (MOST, 2017). The plan treated AI as national infrastructure rather than a sectoral technology, assigning responsibilities across the State Council, the Ministry of Industry and Information Technology, the National Development and Reform Commission, the Ministry of Education, and the Chinese Academy of Sciences. Subsequent instruments have refined and operationalised this architecture. The 2025 State Council Opinions on Deepening the Implementation of the AI+ Initiative mandate AI integration across manufacturing, agriculture, transportation, finance, healthcare, scientific research, and education, while the companion AI+ Manufacturing Opinions provide sector-specific guidance with provincial experimentation zones and central co-financing (State Council of the People's Republic of China, 2025; Ministry of Education, 2018; Cyberspace Administration of China et al., 2023; Bose, 2026). Standards guidelines, education directives that embed generative AI literacy from primary school, and granular regulations such as the 2026 Provisional Measures on Human-like Interactive AI Services further illustrate the density of coordination (State Council of the People's Republic of China, 2025; Ministry of Education, 2018; Cyberspace Administration of China et al., 2023; Bose, 2026).

This institutional density produces measurable advantages in scale and speed. China ranks second on the Stanford AI Vibrancy Index, accounts for approximately 36% of global AI research papers, and has developed competitive open-weights foundation models such as DeepSeek and the Qwen series (Bose, 2026). Investment in AI infrastructure, including data centres, GPU capacity, and semiconductor design, has been sustained across successive Five-Year Plans. Civil-military fusion is explicit: the 2017 plan and later documents promote two-way conversion of military and civilian technological achievements, enabling rapid transfer of advances in autonomous systems, swarm intelligence, predictive analytics, and command-and-control applications into defence platforms (Saalman, 2026; Singh & Kumar, 2025). Talent pipelines are similarly coordinated. The Ministry of Education's AI Innovation Action Plan for Colleges and Universities aims to transform universities into centres of AI talent cultivation, while national champions such as Baidu, Alibaba, Tencent, and Huawei operate within a framework of state guidance and preferential access to data and compute (Kumar, 2021; Bose, 2026).

India's path began with the 2018 National Strategy for Artificial Intelligence, released by NITI Aayog under the banner of #AIForAll. The strategy identified three pillars: democratising AI through open innovation, public-sector-led developmental applications, and global leadership in AI for sustainable development; and prioritised five sectors: healthcare, agriculture, education, smart cities and infrastructure, and smart mobility (NITI Aayog, 2018; Kumar, 2021; Mozaffari Falarti, 2024; Singh & Kumar, 2025). Unlike China's comprehensive industrial plan, India's document emphasised inclusive growth, ethical principles, and the use of AI to address societal challenges rather than pure technological primacy. Subsequent institutional developments include the establishment of the Defence AI Council and Defence AI Project Agency, the IndiaAI Mission announced in 2024 with its National AI Resource Platform and planned 10,000-GPU compute cluster, the Bhashini multilingual initiative, and growing attention to sovereign models such as BharatGen (Singh & Kumar, 2025; Bose, 2026).

India possesses genuine comparative strengths. It ranks first globally in AI talent concentration according to some network readiness indices, holds a substantial share of global AI research output, maintains the world's second-largest community of GitHub contributors to AI projects, and has pioneered digital public infrastructure— Aadhaar, UPI, DigiLocker, and ONDC— that has attracted international admiration and replication (Bose, 2026; Singh & Kumar, 2025). The large English-language technology workforce and vibrant startup ecosystem further support innovation capacity. Yet structural vulnerabilities persist. Ministerial fragmentation distributes AI-relevant policy across MeitY, NITI Aayog, the Department of Science and Technology, DRDO, sector ministries, and state governments without a robust cross-ministerial coordination mechanism comparable to China's (Bose, 2026). Compute dependence on foreign cloud providers and proprietary APIs remains high; investment levels lag substantially behind those of China and the United States; and standards participation, while growing, has not yet translated into agenda-setting influence in international bodies (Kumar, 2021). Research quality metrics also reveal gaps: although publication volume has risen, citation impact frequently trails global averages, and commercialisation of high-value patents remains limited (Chen et al., 2020; Al-Marzouqi & Arabi, 2024).

Comparative indicators across research, patents, talent, startups, and infrastructure underscore these divergences. China leads in absolute research output and patent volume, particularly in application-oriented domains, supported by sustained public investment and industrial policy incentives (Chen et al., 2020; Hu et al., 2020). India's publication growth is rapid and its talent pool large, yet infrastructure scale and the translation of research into commercial and strategic systems remain

more constrained (Vaishya et al., 2025). Startup ecosystems reflect similar patterns. China's environment benefits from government-guided funds, national champions, and reduced investment risk through state coordination, enabling rapid commercialisation (Zhang et al., 2026). India's startup scene is dynamic, especially in Tier-1 cities, and increasingly supported by the IndiaAI Mission, but continues to face capital shortages, regulatory complexity, and market fragmentation (Office of the Principal Scientific Adviser to the Government of India, 2025; Singh & Kumar, 2025).

These institutional differences are not accidental; they flow from distinct political systems and strategic cultures. China's model maximises coherence and mobilisation capacity at the cost of potential rigidity and international trust deficits. India's model maximises adaptability, legitimacy, and inclusivity at the cost of coordination deficits and slower scaling. Techno-nationalism operates in both cases, yet its organisational expression diverges sharply (Zhang et al., 2025; Kumar, 2021). The next section examines how these architectural differences translate into military applications, normative competition, and implications for the Global South.

## 6. Comparative performance across research, innovation, talent, military integration, and global influence

A systematic comparison of measurable performance indicators and strategic outcomes reveals the practical consequences of the institutional divergences examined earlier. China's centralised model has generated clear advantages in scale, speed of commercialisation, and military absorption, while India's hybrid model has produced strengths in human capital concentration, digital public infrastructure, and normative positioning, albeit with persistent gaps in infrastructure depth and research impact. Drawing on both quantitative indicators and qualitative assessments from primary and secondary sources, this section evaluates the rivalry across five interrelated domains: research output and scholarly influence, patenting and commercialisation, talent development and education pipelines, military and dual-use applications, and global diplomatic influence, while situating these dynamics within the wider regional context of Southeast Asian AI policymaking (Chen et al., 2020; Kumar, 2021; Saalman, 2026; Singh & Kumar, 2025; Bose, 2026; Sazmand & Amini Jeshvaghani, 2026).

In research output, China maintains a dominant position. Between 2015 and 2019, Chinese scholars produced 6,635 AI-related publications in medicine alone, registering a compound annual growth rate of 25.4% and an average citation impact of 5.3 citations per paper, compared with India's 3.6 (Chen et al., 2020). Broader metrics confirm the pattern: China accounts for roughly 36 percent of global AI research papers and ranks second on the Stanford AI Vibrancy Index (Bose, 2026). India ranks as the fourth-largest publisher of AI scholarly papers

since 2010 and has shown rapid growth in generative AI applications for healthcare imaging between 2017 and 2025; yet its citation performance remains significantly below the global average of 21.71 citations per paper, standing at approximately 6.55 (Vaishya et al., 2025; Wang & Dong, 2026). International collaboration networks further amplify the disparity. China's extensive partnerships enhance visibility and citation impact, whereas India's collaborations, although expanding with partners such as the United States and France, remain more geographically concentrated and less dense (Al-Marzouqi & Arabi, 2024). These differences reflect not only resource asymmetries but also variations in research ecosystem maturity and institutional capacity to convert publication volume into sustained scholarly influence (Chen et al., 2020; Kumar, 2021).

Patent activity and technological commercialisation display a parallel pattern. China possesses a highly developed AI patent ecosystem characterised by large volumes of filings, particularly in application-oriented domains such as medical AI devices, supported by sustained government investment, coordinated industrial policies, and long-term strategic planning that incentivise intellectual property creation (Hu et al., 2020; Kumar, 2021). India has experienced considerable expansion in AI patenting, ranking eighth internationally in filings and benefiting from initiatives under the IndiaAI Mission; nevertheless, the ecosystem remains less mature, with fewer high-value patents and weaker technology-transfer outcomes (Chen et al., 2020; Vaishya et al., 2025). Strengthening intellectual property generation and commercialisation mechanisms therefore constitutes an important priority if India is to convert its human-capital advantage into durable global competitiveness (Al-Marzouqi & Arabi, 2024; Bose, 2026).

Talent development and education pipelines illustrate both India's relative strength and the coordination gap. China integrates national AI strategies throughout the education system, from primary-school generative AI literacy guidelines to specialised university programmes and close collaboration between research institutions and technology firms such as Baidu, Alibaba, Tencent, and Huawei (Bose, 2026; Kumar, 2021). National AI innovation zones, targeted scholarships, and the Ministry of Education's AI Innovation Action Plan have substantially enhanced both the quantity and quality of talent (Singh & Kumar, 2025). India benefits from one of the world's largest pools of technically skilled professionals and ranks first globally in AI talent concentration according to certain network readiness indices (ibid). The National Education Policy 2020 and the IndiaAI Mission seek to embed coding and AI literacy more systematically, while initiatives such as Bhashini address multilingual needs (Bose, 2026). Yet infrastructure for advanced training remains smaller in scale and more fragmented, and industry–academia linkages are less systematically coordinated than in China (Mishra et al., 2026; Bose, 2026). The result is a

substantial human-capital advantage that has not yet been fully translated into equivalent computational and industrial capacity.

Military and dual-use applications constitute the domain in which institutional differences produce the most strategically consequential outcomes. China has pursued comprehensive integration of AI across autonomous systems, cyber operations, intelligence analysis, battlefield situational awareness, precision guidance, and swarm capabilities (Saalman, 2026). Systems such as the DF-26 missile, hypersonic glide vehicles, Hong-6N and H-20 bombers, Jilin-1 and Taijing satellite constellations, Changying BZK-005 UAV, GJ-11 UCAV, and various uncrewed surface and underwater vehicles illustrate the breadth of absorption (Saalman, 2026). Civil-military fusion and high absorptive capacity enable rapid transfer of commercial advances into defence platforms. On norms, China has advocated human control over "relevant weapon systems" in United Nations forums and jointly affirmed with the United States the importance of human control over the decision to use nuclear weapons, yet has not endorsed the REAIM declarations and maintains ambiguity regarding the precise stages of nuclear command-and-control at which such control would apply (Saalman, 2026). India's official discourse remains more cautious. AI applications appear in the production of nuclear-capable Agni, Prithvi, and Akash missile variants, hypersonic platforms, Rafale sensor suites, naval Integrated Platform Management Systems, predictive analytics, facial and voice recognition, and uncrewed systems such as the Ghatak UCAV and various UUVs (Saalman, 2026). Defence institutions emphasise operational effectiveness while maintaining meaningful human oversight, and military AI development is embedded within broader governance frameworks including the Digital Personal Data Protection Act 2023 (Bishnoi, 2026; United Service Institution of India, 2026). Official releases focus predominantly on conventional and border-security applications rather than nuclear postures, reflecting both strategic caution and the incremental, consensus-driven character of civil-military collaboration (Saalman, 2026; Klair, 2026). Both states recognise obligations under international humanitarian law, yet their governance philosophies diverge: China's approach prioritises pragmatic state-led implementation, while India's places greater weight on democratic accountability, transparency, and risk minimisation (Saalman, 2026; Bishnoi, 2026).

Global influence and technology diplomacy constitute the final comparative domain and reveal important regional dimensions. China has successfully positioned AI as a central instrument of technological self-reliance, regulatory diplomacy, and soft power, actively shaping international standards through ISO/IEC participation and exporting both infrastructure and open-weights models (Zhang et al., 2026; Bose, 2026). Its techno-nationalist ambition of global AI leadership by 2030 is pursued through a combination of domestic mobilisation and external

norm diffusion (Kumar, 2021). India has expanded its international profile through the Global Partnership on Artificial Intelligence, Quad initiatives, and partnerships with France and other democracies, placing comparatively greater emphasis on ethical AI, trustworthy governance, digital sovereignty, and collaborative engagement (Tran, 2026; Singh & Kumar, 2025; Kamaruddin et al., 2026).

Within Southeast Asia, these competing models encounter a sophisticated regional laboratory for AI policymaking. Singapore stands out as the most advanced actor in the Association of Southeast Asian Nations (ASEAN), having established a National AI Office and the Singapore Data Science Consortium while adopting a distinctly human-centric and ethical approach to AI integration across healthcare, finance, education, legal regulation, innovation ecosystems, and smart-city development (Sazmand & Amini Jeshvaghani, 2026). Singapore's experience demonstrates that middle powers can achieve high levels of AI readiness through coordinated institutional design, ethical frameworks, and public-private collaboration without replicating the scale of either Chinese centralisation or Indian developmental pluralism. For India, Singapore's model offers both a potential partner for knowledge exchange, particularly in ethical governance, smart infrastructure, and data-driven public administration; and a benchmark against which to measure the effectiveness of its own hybrid approach (Sazmand & Amini Jeshvaghani, 2026). For China, Singapore represents a commercially and diplomatically significant node within ASEAN where infrastructure and standards competition continues. The broader ASEAN region, which has moved rapidly to integrate AI into economic and social policymaking, thus functions as an important arena in which the relative attractiveness of Chinese state-centric and Indian democratic-ethical models will be tested (Sazmand & Amini Jeshvaghani, 2026; Bose, 2026).

These contrasting diplomatic strategies are consistent with the theoretical framework advanced earlier: techno-nationalism explains China's security-oriented centralisation, while India's hybrid model combines elements of techno-nationalism with democratic and inclusive policy-making (Zhang et al., 2025; Tran, 2026). Neo-realist dynamics further illuminate the competition, as both states increasingly view technological capability as a critical component of national power within an evolving international system (Leandro & Oberoi, 2023). Policy-diffusion mechanisms operate through multiple channels: China's through state-to-state technology partnerships and infrastructure projects, India's through democratic networks, digital public infrastructure templates, and potential collaboration with advanced regional actors such as Singapore (Truby et al., 2026; Sazmand & Amini Jeshvaghani, 2026).

Collectively, the empirical record demonstrates that China's coordinated model has delivered superior scale in research volume,

patent generation, infrastructure, commercialisation, and military integration. These advantages, however, are accompanied by persistent concerns regarding ethical governance, regulatory transparency, and international trust (Kamaruddin et al., 2026; Saalman, 2026). India's model promotes inclusivity, democratic legitimacy, and ethical leadership— attributes that may become increasingly valuable as global AI governance evolves and as regional actors such as Singapore demonstrate the viability of human-centric approaches— yet requires substantial further investment in research quality, compute capacity, commercialisation pathways, and institutional coordination if it is to narrow the capability gap (Chen et al., 2020; Office of the Principal Scientific Adviser to the Government of India, 2025; Sazmand & Amini Jeshvaghani, 2026). The rivalry is therefore best understood not as a zero-sum race toward a single technological apex, but as a competition between two models whose relative success will shape both bilateral power balances and the broader architecture of global and regional AI order.

## 7. Contending models and the emerging global AI order: Implications, constraints, and pathways for technological autonomy

The comparative performance analysis presented in the preceding section demonstrates that the India-China AI rivalry is not merely a quantitative contest over research volume, patents, talent pools, or military systems. It is a structural competition between two distinct models of AI statecraft whose interaction will shape the character of the emerging global AI order. China's coordinated, state-centric model has delivered superior scale and speed across most measurable domains, while India's hybrid, ethically oriented model has generated advantages in human-capital density, digital public infrastructure, and normative legitimacy. These divergent outcomes carry significant implications for technological autonomy in the Global South, the prospects for limited cooperation or sustained rivalry, and the broader architecture of international AI governance (Bose, 2026; Zhang et al., 2025; Sazmand & Amini Jeshvaghani, 2026).

The first implication concerns the diffusion of governance models. Policy-diffusion theory predicts that successful national approaches travel through demonstration effects, institutional partnerships, standards bodies, and infrastructure projects (Truby et al., 2026). China's model travels primarily through state-to-state technology partnerships, the Belt and Road Initiative's digital components, open-weights model exports, and active participation in international standardisation forums. Its capacity to offer turnkey computational infrastructure and rapid industrial applications makes it attractive to governments seeking accelerated modernisation (Kumar, 2021; Mozaffari Falrti, 2024). India's model travels through democratic

networks, the Global Partnership on Artificial Intelligence, Quad initiatives, and the exportable template of digital public infrastructure. The relative success of Aadhaar, UPI, and related platforms has already generated interest among developing countries seeking inclusive and interoperable digital systems (Bose, 2026; Singh & Kumar, 2025). Singapore's experience within ASEAN further illustrates the appeal of intermediate, human-centric models that combine institutional coordination with ethical safeguards, offering both India and China a regional reference point against which their own approaches are evaluated (Sazmand & Amini Jeshvaghani, 2026). The Global South therefore confronts a genuine menu of options rather than a binary choice between Chinese scale and Western platforms.

A second implication relates to the constraints on synergy between India and China themselves. Complementary technical strengths exist in principle: India's software engineering expertise and large talent pool could enhance system integration and deployment efficiency, while China's computational resources and manufacturing scale could accelerate research requiring substantial hardware (Zhang et al., 2026). Yet structural barriers remain formidable. Enduring geopolitical tensions, divergent political systems, competing strategic interests, and mutual suspicions regarding technological dependence substantially limit the scope for comprehensive collaboration (Mohan, 2021). Targeted, issue-specific cooperation in non-sensitive technical domains remains possible, but the broader pattern of the 2020-2026 period has been one of competitive rather than collaborative development. Neo-realist dynamics reinforce this trajectory: each state continues to prioritise relative gains in a domain perceived as central to national security and economic resilience (Leandro & Oberoi, 2023; Saalman, 2026).

A more realistic pathway for reducing shared vulnerabilities lies in coordinated action among BRICS members and the wider democratic Global South. Collective efforts on compute access through pooled procurement, multilingual foundation models covering major languages of member states, harmonised positions in international standards bodies, shared frameworks for responsible cross-border research data, and independent AI safety evaluation capacity could enhance technological autonomy without requiring full bilateral India-China alignment (Bose, 2026). India is uniquely positioned to contribute leadership to such an agenda because of its democratic credentials, linguistic diversity, software engineering strengths, and proven digital public infrastructure. China's technical capabilities and market scale would remain relevant, yet the institutional framework would rest on pluralistic rather than hierarchical coordination. This approach aligns with India's hybrid model while offering a practical response to the concentration of advanced AI infrastructure among a small number of Western and Chinese providers.

A third implication concerns the long-term viability of each model. China's advantages in mobilisation capacity and infrastructure depth are substantial, yet they are accompanied by persistent challenges of international trust, regulatory legitimacy, and potential rigidity in the face of rapid technological change (Kamaruddin et al., 2026; Saalman, 2026). The ability to generate large volumes of patents and publications does not automatically translate into global normative influence if partner states harbour concerns about data governance, surveillance, or strategic dependence. India's model, while currently constrained by fragmentation and compute shortfalls, may prove more resilient in an international environment that increasingly values transparency, accountability, and multi-stakeholder participation (Tran, 2026; Sazmand & Amini Jeshvaghani, 2026). The critical test for India in the remainder of the decade will be whether the IndiaAI Mission and related initiatives can convert human-capital and normative advantages into more robust computational sovereignty and commercialisation capacity without sacrificing the ethical and inclusive principles that differentiate its approach (Bose, 2026; Office of the Principal Scientific Adviser to the Government of India, 2025).

These dynamics return us to the theoretical framework that has guided the analysis. Techno-nationalism explains why both states treat AI as a strategic national asset requiring deliberate state intervention; the organisational expression of that intervention, however, diverges sharply according to political system and strategic culture (Zhang et al., 2025; Kumar, 2021). Neo-realism accounts for the security-driven acceleration of military applications and the relative-gains logic that constrains deep cooperation (Leandro & Oberoi, 2023; Saalman, 2026). Policy diffusion illuminates the parallel struggle to shape the rules, standards, and institutional templates that will govern AI globally and regionally (Zhu et al., 2022; Truby et al., 2026). The empirical record of 2020-2026 confirms that capability and governance philosophy are interdependent: the institutional arrangements that produce scale also shape the legitimacy and international acceptability of the resulting systems.

The India-China AI rivalry therefore constitutes both a material power contest and a normative competition whose outcomes will influence the structure of the emerging global AI order. Neither absolute Chinese dominance nor unchallenged Indian ethical leadership appears probable. More likely is a continued interaction of the two models, mediated by the choices of third parties in the Global South and by the evolving preferences of middle powers such as Singapore that demonstrate viable intermediate pathways (Sazmand & Amini Jeshvaghani, 2026; Bose, 2026). The central question for the coming decade is not simply which country will build the most advanced AI systems, but which combination of technological capacity, institutional coherence, and normative legitimacy will prove most capable of

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attracting partners and shaping the rules of the digital age. The answer will affect not only the relative positions of India and China but the broader distribution of technological power and the character of international order in the artificial intelligence era.

## 8. Conclusion

Artificial intelligence has become one of the defining arenas of twenty-first-century technological, economic, and geopolitical competition. Between 2020 and 2026 the rivalry between India and China has illustrated with particular clarity that leadership in this domain is determined not solely by technical metrics— research output, patent volume, computational capacity, or the sophistication of military applications— but by the interaction of innovation ecosystems, state strategies, institutional architectures, and governance philosophies. This study has argued that the India-China AI competition constitutes a broader contest between two models of technological statecraft. China's model is characterised by centralised coordination, long-horizon industrial policy, civil-military fusion, and the systematic construction of a sovereign AI ecosystem. India's model is hybrid: it combines strategic state direction with private-sector dynamism, democratic institutions, ethical and responsible AI principles, inclusive developmental priorities, and international partnerships. The future global AI order will be shaped not merely by which country produces more advanced systems, but by which combination of capacity, coherence, and legitimacy proves most capable of attracting partners and influencing the rules that govern artificial intelligence.

The empirical findings of the preceding sections substantiate this argument across multiple dimensions. Institutionally, China has constructed one of the world's most systematically coordinated national AI architectures. Beginning with the 2017 New Generation Artificial Intelligence Development Plan and refined through subsequent AI+ instruments, standards frameworks, education directives, and granular regulations, Beijing has integrated industrial policy, scientific research, talent development, manufacturing transformation, and national security into a mutually reinforcing framework (Kumar, 2021). This coordination has produced measurable advantages in research scale, patent generation, infrastructure depth, commercialisation speed, and the absorption of AI into military and dual-use systems (Chen et al., 2020; Saalman, 2026; Hu et al., 2020). India, by contrast, has pursued a more decentralised and values-oriented pathway. The 2018 National Strategy for Artificial Intelligence under the banner of #AIForAll, followed by the IndiaAI Mission, the establishment of defence AI institutions, investments in digital public infrastructure, and multilingual initiatives such as Bhashini, reflect a deliberate emphasis on inclusivity, ethical governance, and developmental applications (Singh & Kumar, 2025; NITI Aayog, 2018; Bose, 2026). India

possesses genuine strengths— an exceptionally large pool of AI-relevant talent, a world-leading track record in open and interoperable digital public infrastructure, and growing international normative influence— yet continues to face structural constraints in compute capacity, ministerial coordination, research impact, and commercialisation (Al-Marzouqi & Arabi, 2024; Office of the Principal Scientific Adviser to the Government of India, 2025).

In the military domain the divergence is especially consequential. China has integrated AI across precision guidance, situational awareness, simulation, autonomy, and swarm capabilities, facilitated by civil-military fusion and high absorptive capacity (Saalman, 2026). Official Chinese positions on human control over nuclear and relevant weapon systems remain carefully calibrated and at times ambiguous. India has adopted a more cautious posture, prioritising human oversight, transparency, and compliance with international legal standards while advancing AI applications primarily in conventional, border-security, and dual-use platforms (Saalman, 2026; Bishnoi, 2026). These differences are not merely technical; they reflect deeper variations in strategic culture, civil-military relations, and normative commitments.

At the level of global influence and technology diplomacy, both states seek to diffuse their preferred models. China advances a state-centric vision through standards participation, infrastructure partnerships, and open-weights model exports. India promotes an ethical, multi-stakeholder, and democratically grounded alternative through the Global Partnership on Artificial Intelligence, Quad initiatives, and the demonstration effects of its digital public infrastructure (Truby et al., 2026; Tran, 2026; Singh & Kumar, 2025). Regional actors such as Singapore, which has developed a sophisticated human-centric AI policymaking framework within ASEAN, provide intermediate reference points against which both models are evaluated and potential partnerships assessed (Sazmand & Amini Jeshvaghani, 2026). The Global South thus confronts a genuine menu of technological and governance options rather than a simple binary choice. For countries such as Iran, the comparative experience of India and China offers concrete lessons in the value of long-horizon institutional coordination, sovereign compute investment, ethical framing of AI development, and the strategic utility of digital public infrastructure. Selective adaptation of elements from both models, while prioritising national data sovereignty and alignment with domestic developmental and resilience priorities, could strengthen Iran's broader technological capacity and its position within regional and Global South technology networks.

These findings yield several theoretical contributions. First, the study demonstrates that techno-nationalism remains a powerful analytical lens for understanding state behaviour in the AI domain, yet

its organisational expression varies significantly according to political system and strategic culture. China's version maximises coherence and mobilisation capacity; India's version incorporates democratic accountability, ethical constraints, and multi-stakeholder participation (Zhang et al., 2025; Kumar, 2021). Second, neo-realist dynamics continue to structure the security dimension of the rivalry. AI's dual-use character and its potential to alter relative military capabilities generate classic relative-gains concerns that constrain deep bilateral cooperation and accelerate competitive development (Leandro & Oberoi, 2023; Saalman, 2026). Third, policy-diffusion theory illuminates the parallel struggle to shape international norms, standards, and institutional templates. The India-China rivalry is therefore simultaneously a material power contest and a normative competition whose outcomes will influence the rules of the emerging global AI regime (Truby et al., 2026). By integrating these three perspectives, the study offers a multi-layered framework capable of capturing both the domestic organisation of AI development and its international consequences; an advance over analyses that treat national strategies in isolation or focus exclusively on quantitative indicators.

The importance of this research extends across several scholarly and policy domains. Within international relations, it contributes to the growing literature on the geopolitics of emerging technologies and the ways in which general-purpose technologies become arenas of both capability competition and normative contestation. It speaks directly to debates on structural power in the digital age, the weaponisation of interdependence, and the reconfiguration of sovereignty around control of data, compute, and algorithmic systems. Within comparative politics and political economy, it provides a detailed examination of how different regime types organise technological mobilisation and the trade-offs between coordination capacity and legitimacy. For Asian studies and Indo-Pacific security analysis, the study illuminates one of the central bilateral rivalries of the contemporary period and its implications for regional order. Strategically, it underscores that AI competition between India and China is inseparable from broader questions of nuclear posture, conventional military modernisation, and the management of escalation risks (Saalman, 2026). Regionally, the analysis of Southeast Asian AI policymaking, particularly Singapore's advanced human-centric model, highlights the agency of middle powers and the competitive diffusion of governance templates within ASEAN (Sazmand & Amini Jeshvaghani, 2026).

For the Global South the stakes are especially high. Developing countries adopting AI technologies face choices not only about suppliers of hardware and software but about the governance frameworks, data regimes, and normative commitments that accompany them. China's model offers scale and speed; India's model offers greater compatibility with democratic and pluralistic political

systems and a proven template for inclusive digital public infrastructure. The possibility of limited technical synergy between India and China exists in theory, yet geopolitical tensions and competing strategic interests render comprehensive collaboration unlikely in the near term. A more promising pathway lies in coordinated action among BRICS members and the wider democratic Global South on compute access, multilingual models, standards participation, and independent safety evaluation; initiatives that could enhance collective technological autonomy without requiring full bilateral alignment (Othman, 2024; Bose, 2026).

The study is not without limitations. The rapid pace of AI development means that empirical indicators and policy frameworks evolve continuously; findings based on the 2020-2026 period will require updating as new models, regulations, and military applications emerge. Official opacity surrounding nuclear command-and-control systems in both China and India constrains definitive assessment of AI integration at the highest levels of strategic decision-making (Saalman, 2026). Quantitative comparisons of research impact and commercialisation outcomes remain sensitive to database coverage and citation practices. Future research could usefully employ computational methods to map institutional coordination density more precisely, conduct process-tracing case studies of specific dual-use programmes, and examine the reception of Indian and Chinese AI governance templates among third countries in Africa, Latin America, and Southeast Asia.

Nevertheless, the central conclusion remains robust. The India-China AI rivalry is best understood as a contest of models whose interaction will shape both bilateral power balances and the broader architecture of the global AI order. China demonstrates the power of centralised mobilisation and large-scale investment. India demonstrates the potential of human capital, democratic institutions, and responsible governance. Neither absolute dominance by one model nor a stable synthesis of both appears probable. More likely is a continued, dynamic interaction mediated by the choices of third parties, the preferences of middle powers, and the evolving requirements of international legitimacy. The critical question of the coming decade is therefore not simply which country will build the most advanced artificial intelligence systems, but which combination of technological capacity, institutional coherence, and normative legitimacy will prove most capable of attracting partners, shaping standards, and defining the rules of the digital age. The answer will affect not only the relative positions of India and China but the distribution of technological power, the character of strategic stability, and the structure of international order in the artificial intelligence era.

## Conflict of interest
The authors declared no conflicts of interest.

## Author contributions
Shirin Khoshabi: Conceptualization, Original Overview Draft, Research into Persian & Chinese Sources, Translation of Chinese sources.

Maziar Mozaffari Falarti: Investigation, Coordination, Researching in Persian, Indian, Southeast Asian & English sources, Fluidity-Coherence & Flow; Writing – Review & Editing, Corresponding Author.

## Ethical considerations
The authors have completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc. This article was not authored by artificial intelligence.

In preparing this manuscript, the authors utilized generative AI tools, specifically OpenAI's ChatGPT (GPT-4-turbo), for the purposes of enhancing language clarity, improving grammatical accuracy, translations and refining the overall fluidity of the text. Additionally, ChatGPT was consulted to assist with the revision and formatting of references in accordance with the Journal guidelines. The use of ChatGPT was strictly limited to these editorial functions; all research design, data collection and analysis, conceptual development, arguments, and substantive content are original and reflect the authors' independent work-scholarship, study and expertise, developed over a decade of research in this area. The application of generative AI was conducted transparently and is fully disclosed here in line with current academic recommendations for responsible and ethical use of AI assisted technologies in scholarly writing

## Data availability
The dataset generated and analyzed during the current study is available from the author on reasonable request.

## Funding
This research did not receive any grant from funding agencies in the public, commercial, or non-profit sectors.

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