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Comparative Analysis of AI Policies in the People's Republic of China and the Republic of India: Strategic Implications for Economic Development

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ABSTRACT

With the growth of AI-related technologies, countries at the governance level are increasingly realizing the importance of precise policymaking in the field of Artificial Intelligence. Experience shows that correct governance in this area can be a catalyst for the economic development of developing countries. The central question is: How have the differences in the AI governance strategies of China and India affected the quality of their economic development from 2017 to 2024? This study employs a deductive logic within the framework of integrating Neo-Technological Realism and Endogenous Economic Growth theories to test the hypothesis that the different models of AI governance in these two countries, despite other similarities, have led to significant differences in the quality of their economic development.To this end, using indicators such as Growth Domestic Product (GDP) growth rate, GDP per capita based on Purchasing Power Parity (PPP), the share of the digital economy in total GDP, labour productivity growth, exports of advanced technology goods and services, and foreign direct investment inflow into AI-related sectors, it is demonstrated that China, with its centralized, authoritarian policies and massive investment, has followed a path of rapid but unequal development. Meanwhile, India, with its participatory, gradual, and human-centric policies, has followed a more stable and equitable development path.The findings of this research indicate that technological governance patterns can have a significant impact on the quality of a country's economic development.

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Introduction

In the contemporary era, emerging technologies, particularly Artificial Intelligence (AI), have become one of the primary drivers of transformation in the power structures and economic development of nations. Unlike the past, where factors such as labor force or natural resource reserves were the most significant stimuli for economic growth, today, a country's capability to develop and deploy advanced technologies—especially AI—plays a decisive role in its economic standing (Alison, 2021). Indeed, some experts believe that AI will mark the "third revolutionary transformation in economic history" (Baldwin, 2019). As a General-Purpose Technology (GPT), AI can assist private companies in production, marketing, and customer acquisition. Furthermore, it can yield collateral benefits such as enhanced service quality, improved accuracy and efficiency, and increased customer satisfaction. This transformation has led to the emergence of a new concept termed "Economic Geo-technology," referring to the nexus between advanced technologies and global economic competitions. Within this framework, technologies such as AI, quantum computing, and Big Data are considered not merely technical tools but strategic components for enhancing national economic power, thereby driving the reconfiguration of power structures at the international level (Araya, 2020). In this context, two Asian nations—People's Republic of China (China) and the Republic of India—as emerging powers, are engaged in intensifying competition to secure a superior position in the global digital economy. Adopting an aggressive strategy and massive investment in the AI sector, China aims to gain economic advantages and upgrade its position within the Global Value Chain (GVC). The official "Next Generation Artificial Intelligence Development Plan" in 2017 marked a turning point in this trajectory, propelling China toward technological hegemony in the global economic arena. Conversely, India, facing structural and infrastructural challenges, has adopted gradual policies grounded in indigenous innovation. The "AI for All" initiative, focusing on sustainable growth, job creation, and the promotion of social justice, reflects a distinct yet ambitious approach (NITI Aayog, 2018).

In this study, economic development is conceptualized not merely as a macro indicator, but as a multidimensional process encompassing factors such as Gross Domestic Product (GDP) growth, productivity enhancement in digital industries, the expansion of technological employment, and investment attraction in the AI sector. In other words, the role of AI in economic development is analyzed through channels such as the optimization of production processes, the facilitation of data-driven decision-making, and the creation of novel economic opportunities.In light of these discussions, the central research question is formulated as follows: How have the divergent AI governance strategies of China and India impacted the quality of their economic development from 2017 to 2024? Given the burgeoning role of emerging technologies, particularly AI, in redefining national economic power, examining government strategies in this domain has become an imperative within the literature of development and policymaking. As two Asian nations with vast populations and substantial human capital capacities, China and India have pursued distinct paths in AI policymaking. A comparative analysis of these trajectories can elucidate how technology influences economic development, inequality, governance, and global positioning. Furthermore, this study

contributes to bridging the gap in the interdisciplinary literature between economic development and technology policy, as prior studies have often focused solely on technological consequences or neglected the structural analysis of development.

In response to the research question, the hypothesis posits that distinct AI governance models in these two nations—despite their other shared characteristics—have led to significant disparities in the quality of their economic development.China, by adopting centralized, authoritarian, and infrastructure-led policies in the AI domain, has succeeded in accelerating its economic development trajectory and elevating its geopolitical standing within the Global Value Chain. Conversely, India, through a participatory, gradual, and equity-oriented approach, has pursued a slower pace of development, yet one grounded in more democratic foundations with a focus on human capital enhancement.These divergent approaches have yielded varying strategic implications regarding power structures, economic efficiency, and social inequality. To test this hypothesis, the present article is organized into six sections. Following the introduction and problem statement, the second section reviews the relevant literature. The third section is dedicated to explicating the theoretical framework of the research, namely "Technological Neorealism," which constitutes the analytical basis of the study. In the fourth section, AI policies in China are examined from strategic, institutional, and consequential perspectives. The fifth section is devoted to analyzing India's policies using the same criteria. In the sixth section, a comparative analysis is conducted between the two countries regarding relevant economic indicators on an annual basis from 2017 to 2024. Finally, the conclusion offers policy recommendations for developing countries, such as Iran. This contribution is particularly significant for developing nations, as it provides transferable policy insights into how alternative AI governance models can be strategically aligned with domestic institutional capacities, development priorities, and socio-economic constraints to enhance sustainable growth and technological sovereignty.

Literature Review

While numerous studies have investigated the impact of AI strategies on national economic growth and development, extensive ambiguities remain. Some scholars argue that AI development paves the way for widespread job displacement, subsequently exacerbating economic inequalities driven by automation and uneven access to associated technologies (Bostrom, 2017; Trabelsi, 2024).

Conversely, a number of researchers have demonstrated that AI can serve as a driver for economic growth by substituting capital for labor (Zeira, 1998; Hemous & Olsen, 2014; Aghion et al., 2017). Recently, Lu (2021) developed a theoretical framework examining the impact of AI on endogenous economic growth. He likens AI to human capital accumulation, distinguishing it from physical capital. In this manner, AI acts as a distinct input contributing to economic growth and development.

The body of research regarding AI's impact on national economic growth is so prolific that a near-consensus exists regarding AI's potential to induce economic growth. However, regarding the mechanism of AI's influence on economic growth or development, there is still no unanimity, and the debate remains open.

A body of research indicates that the overall level of development and the mode of AI policymaking serve as key mediating variables influencing the relationship between artificial intelligence and national economic performance. For instance, Gonzalez (2023), by examining the impact of AI-based technologies on economic growth from 1970 to 2019, demonstrated that while this correlation is generally positive, a significantly stronger positive correlation is observed among developed nations. Similarly, Kitsara (2022) addressed cross-national disparities in access to AI technologies and the capitalization of their economic benefits, investigating the repercussions of geographical inequality and the digital divide on economic growth. However, scant research has focused specifically on the impact of national AI development strategies on the exploitation of its economic advantages. For example, Tam et al. (2024), utilizing national AI strategies as a key variable in their analysis of economic growth across 141 countries from 2010 to 2023, concluded that the more comprehensive these national strategies are, the greater the potential to harness the positive effects of economic development.

Furthermore, Udvari and Ampah (2018) study shows that targeted aid to innovation sectors in Sub-Saharan African countries significantly bolstered growth and innovation capacity within these nations. In a related context, Kim and Choi (2019) discuss South Korea's economic policies aimed at fostering innovation through innovation platforms, emphasizing the critical importance of an appropriate policy framework for leveraging the economic benefits of AI.

Building upon this trajectory of inquiry, the present study aims to scrutinize the divergences in the strategic and policy frameworks of China and India regarding the exploitation of AI's economic dividends. Distinct studies have been conducted on each of these nations individually. For instance, Ding (2018), in a report titled "Deciphering China's AI Dream" published by the Future of Humanity Institute, analyzed China’s AI development policies. He demonstrates how the Chinese government, through centralized planning, massive investment, and facilitative policies in data and law, is maneuvering toward becoming the premier global power in artificial intelligence. Similarly, Kai-Fu Lee (2018), in his seminal book "AI Superpowers: China, Silicon Valley, and the New World Order," examines how China, by leveraging the advantages of massive data accumulation and a vast human workforce, is rapidly overtaking the United States in the AI arena. According to him, state support and an intense work culture constitute the primary drivers of China's success.

Regarding India, Singh and Kaur (2020), in an article titled "Artificial Intelligence in India: Challenges and Opportunities" published in the International Journal of Computer Applications, investigated the primary challenges facing AI development in India. They identified the lack of technological infrastructure and the insufficiency of public investment as fundamental impediments to growth in this sector within the country.

To date, only one study has undertaken a comparative analysis of the distinct AI governance models in China and India. Huang and Madhavan (2022), in their paper "AI Policies in China and India: Different Models of Innovation Governance," conducted a comparative review of these nations' policies. They concluded that China, by focusing on

state planning, and India, by relying on private sector participation, have traversed divergent paths in AI development.

In reviewing the existing literature, most studies have either addressed AI development policies in China or India in isolation, or, in certain instances, the comparison has been limited to models of technology governance. However, the fundamental innovation of the present research lies in the comparative analysis of China and India's AI policies with a specific emphasis on the strategic implications of these policies for the economic development of both nations.Moving beyond mere policy description, this study evaluates the tangible impact of these policies on economic development indicators, technological competition, and geopolitical advantages, utilizing up-to-date data. Furthermore, by adopting an interdisciplinary approach that simultaneously analyzes technology policy and development economics, this research bridges the existing gap in the literature and offers an analytical model for a better understanding of the nexus between AI policies and economic growth in these two Asian nations.

Theoretical Framework: Technological Neorealism and Endogenous Economic Growth Theory

In the twenty-first century, accelerated technological transformations—including the advent of Artificial Intelligence (AI), Big Data, and Biotechnology—have rendered traditional models explicating state behavior in development policymaking inadequate. To address this novel phenomenon from the perspective of its impact on economic growth as well as technology policy, this article employs a synthesis of two theories: Technological Neorealism and Paul Romer's Endogenous Economic Growth Theory.Until approximately the 1980s, the prevailing consensus among economic theorists was that growth in economic productivity is invariably driven by exogenous factors—such as technological progress—that are considered external to economic models. Consequently, as Solow (1956) posits, economic growth is exogenous. In this theoretical framework, variables such as capital accumulation and population growth are explained endogenously (within the model), whereas innovation and technology are assumed to be exogenous. Therefore, for a nation to experience long-term growth, it is compelled to await technological advancements originating from the outside—specifically, from more advanced nations

In contrast to this perspective, Endogenous Economic Growth Theory emphasizes that the primary drivers of long-term economic growth stem from internal processes within the economic system, such as human capital, research and development (R&D), innovation, and learning-by-doing (Romer, 1986, 1990; Lucas, 1988). According to Paul Romer, these factors consist of investment in knowledge, innovation, and technological production, accompanied by their spillover effects (Romer, 1986, 1990).Romer posits that economic growth results from technological changes arising from the intentional decisions of economic agents seeking to maximize profit. The distinguishing characteristic of technology as an input is that it is neither a conventional nor a public good; rather, it is a non-rival and partially excludable good. Furthermore, technology is no longer viewed as an external "gift," but as the outcome of domestic investment, education, and innovation. Consequently, it is government

policymaking regarding education and investment in science and technology that can directly determine the long-term growth rate.In this context, Ajay Agrawal et al. (2019) have demonstrated that Artificial Intelligence can directly accelerate the rate of economic growth, as humans and machines function as complements in the innovation process; with the improvement of algorithms, the potential growth rate of the economy increases. In other words, from the perspective of Endogenous Growth Theory, economies that more rapidly develop their AI governance capacity are better positioned to navigate the path of long-term growth, as the factors of ideas and knowledge are generated and commercialized more swiftly within them.

Simultaneously, within the realm of International Relations scholarship, an emerging approach termed "Technological Neorealism" has arisen. It attempts to offer a conceptual response to the theoretical void regarding Artificial Intelligence by synthesizing the tenets of Neorealism in IR with the analysis of technology policies.Technological Neorealism is rooted in Kenneth Waltz's theory of Neorealism, which emphasizes the anarchic structure of the international system and the necessity of enhancing relative power for survival (Waltz, 1979: 79). However, instead of focusing on traditional military or economic power, this novel approach introduces technology as the most paramount source of structural power for states in the digital age. Indeed, states are compelled to master advanced technologies not only for economic competition but also to exert geopolitical influence.

According to this perspective, technology—specifically in the form of digital infrastructures, algorithms, platforms, and data—has transformed into a determinant factor in defining the standing of nations within the global order. Within this framework, states, through macro-planning, public investments, and sovereign regulation, seek to construct a form of "digital authority" that simultaneously encompasses economic, security, and political dimensions (Buzan & Lawson, 2015: 145-148).

Technology as Structural Power

One of the most fundamental concepts in this theoretical framework is "Technology as Power." Contrary to purely instrumentalist conceptions of technology, Technological Neorealism views it as a strategic asset capable of playing a pivotal role in the architecture of the global order. This perspective draws inspiration from the theory of "Global Transformation," which emphasizes the role of technological revolutions in global power transitions (Buzan & Lawson, 2015: 147). In their view, technology is not merely a tool for development, but an agent for reconstituting international structures. From this vantage point, states capable of producing and controlling advanced technologies not only enjoy economic advantages but also acquire the power of standard-setting, exercising sovereignty over the digital domain, and regulating global norms. These conditions lead to a redistribution of power at the global level and the formation of a "new technological order" wherein algorithmic power supplants classic military power.

State-Centrism and Technological Governance

In contrast to market-oriented perspectives, Technological Neorealism places significant emphasis on the role of the state in steering technological development. States function not merely as regulators but, in many instances, as investors, coordinators, and even technological entrepreneurs. Within this framework, state institutions facilitate the development of strategic technologies through the formulation of strategic plans, the allocation of Research and Development (R&D) budgets, and intervention in digital markets (Mazzucato, 2013: 32–38). This approach overlaps with models such as the "Entrepreneurial State," positing that without targeted state direction, the creation of a technological competitive advantage is unattainable. Particularly in domains such as Artificial Intelligence—where data accumulation, intellectual property regulations, and computational power play pivotal roles—the active presence of the state is deemed essential.

Technology and Security: A New Nexus

In Technological Neorealism, the boundary between technology policy and national security has become increasingly blurred. Access to advanced technologies signifies not only economic power but also the capability for surveillance, defense, information control, and the exertion of geopolitical influence.Within this framework, concepts such as "digital sovereignty," "technological self-reliance," and "algorithmic deterrence" emerge, indicating a fundamental link between technological development and national authority (Feldstein, 2019: 3–5). Consequently, competition over advanced technologies, particularly AI, has transcended the economic realm and shifted into the domain of geopolitical conflict. For this reason, many states have framed their technology development policies within the context of national security strategies.

The adoption of the Technological Neorealism framework for this research is predicated on the complex, multi-layered, and geopolitical nature of the subject matter. Artificial Intelligence is not merely a productive or service-oriented technology; rather, it is a structural and power-generating phenomenon that simultaneously impacts diverse dimensions such as the economy, security, governance, and foreign policy of nations. Consequently, a theoretical framework was required that could integrate these intertwined facets within a coherent analytical constellation.Technological Neorealism possesses this capability through its emphasis on the state's role in steering technological development, its focus on geopolitical competition for digital dominance, and its interdisciplinary capacity to synthesize concepts from International Relations and the economics of technology. Particularly for a comparative analysis of China and India—nations exhibiting divergent models of technological governance—this framework facilitates a deeper understanding of technology's role in the redistribution of global power and fully aligns with the analytical objectives of this research.

The conceptual model of this hypothesis is illustrated below in Figure 1:

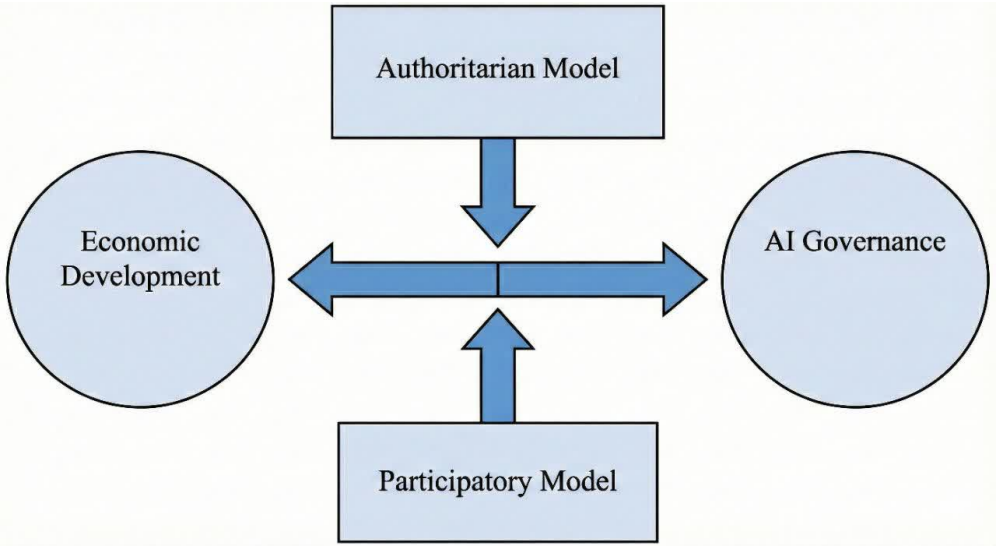

Figure 1. The Conceptual Model
Source: Authors

Research Methodology

In terms of typology, this research is applied with an explanatory objective, employing a comparative case study method. To conduct the comparative study of AI policies in China and India, secondary sources were utilized, including the content of strategic documents, reports from international institutions, economic data, and analytical reports from think tanks.

For the comparative analysis, this study adopts the Most Similar Systems Design (MSSD) method within comparative policy analysis (Anckar, 2020). In this method, two units of analysis—here, China and India—are compared in depth due to their highly similar contextual variables yet distinct differences in one or more independent variables. The objective of this method is to control for extraneous variables through matching, subsequently examining the differing relationship of the independent variable and its impact on the dependent variable (in this case, the level of economic development).

The selection of China and India as "most similar" units of analysis is grounded in their structural similarities regarding population, geography, global standing, level of economic development, and the timing of their AI policy initiation. Despite these similarities, they have adopted markedly divergent approaches to technology policymaking: China with a centralized state model and India with a gradual, participatory approach. Thus, the research design based on MSSD enabled the examination of the consequences stemming from these governance models on the economic development of both nations.

The timeframe of the research (2017–2024) was selected to cover developments following the announcement of national AI strategies in both countries, facilitating the analysis of trends, outcomes, and prospects. To scrutinize the impact of AI policymaking on economic development more precisely, a set of economic growth indicators was selected which, in accordance with the theoretical framework of this article, are considered representatives of endogenous economic factors for growth. The comparative criteria were derived from these indicators to provide a relatively comprehensive picture of the economic consequences of AI policies. Subsequently, the obtained findings were analyzed using the Thematic Analysis method.

1. AI Policies in China: The Path to Technological Economic Dominance

In recent decades, recognizing the strategic importance of Artificial Intelligence in future transformations, China has initiated extensive efforts to consolidate its position as a major player in this domain. The initial serious indications of this orientation date back to national conferences in the 1980s, when Tsinghua University hosted sessions focusing on AI and emerging technologies. These efforts, commencing with the objective of developing algorithms, logic simulation, and computational model design, gradually evolved into macro-policymaking and targeted institution-building.

Key measures include the establishment of institutions such as the Institute for AI International Governance (I-AIIG) at Tsinghua University, and the expansion of scientific capacities at prestigious Chinese universities like Shanghai Jiao Tong University and the Chinese Academy of Engineering. This trajectory signifies China's gradual transition from a stage of imitation to one of innovation and initiative in the realm of AI.Adopting a macro-perspective toward novel technologies, China perceives AI as one of the fundamental pillars of national security, economic development, and global competitiveness. This perspective is clearly crystallized in high-level policy documents such as the "New Generation Artificial Intelligence Development Plan" (2017), as well as State Council documents (2015 and 2025). In these documents, AI is envisioned not merely as a technological tool, but as a catalyst for transformation in lifestyles, governance mechanisms, and economic structures.Furthermore, through massive investments and the direction of financial and human resources into the AI sector, the Chinese government strives to minimize its technological gap with global rivals. In 2018 alone, over $26.7 billion was invested in this sector—a figure indicative of China's serious resolve to achieve supremacy in future technological competitions. These investments have been undertaken with the aim of creating an innovation ecosystem, bolstering data infrastructures, developing commercial and military applications, and enhancing data-driven policymaking capacity (Babri Gonbad, 2023: 28-29).

In recent decades, Artificial Intelligence has emerged not merely as a transformative technology but as a strategic instrument in redefining economic and geopolitical power. In this context, the People's Republic of China (PRC) stands as one of the few nations that, through a holistic approach, has placed AI on its agenda as the primary engine for economic growth, productivity enhancement, national security, and international influence. China's AI strategy rests on three main pillars: long-term state planning, the mobilization of substantial financial resources, and a close nexus between the state and leading technology firms.The watershed moment in China's AI policymaking was marked by the publication of the "New Generation Artificial Intelligence Development Plan" (AIDP) in July 2017. Issued by the State Council of China, this document explicitly declares that China must transform into the global leader in AI by 2030 (State Council of China, 2017: 2).

Within this document, specific interim milestones are defined:

- By 2020, China aimed to be synchronized with global advanced levels in key AI domains.
- By 2025, the goal is to achieve a leading position in select fields.

- By 2030, China seeks to become the premier global center for AI innovation and the reference for global standards.

This staged approach exemplifies a form of "planned rationality" that aligns seamlessly with the traditional characteristics of Chinese governance—namely, centralization and long-termism.

From an economic standpoint, China has successfully expanded the deployment of AI across strategic industries. According to a McKinsey Global Institute report, by 2023, more than 23% of large Chinese enterprises utilized AI in production processes and supply chains, whereas this figure stood at approximately 18% in the United States (McKinsey Global Institute, 2023: 27). Furthermore, China's share of global AI investment reached approximately $16 billion in 2023, securing the second rank globally after the United States (Stanford AI Index, 2024: 57). Regarding patent registration, in 2022, China accounted for roughly 26% of all global AI-related patents, indicating the nation's high capacity for technological innovation.

Domestically, China has designed AI initiatives to both enhance public services and bolster e-government. The "Hangzhou Smart City" project, implemented in collaboration with Alibaba, utilized advanced data processing algorithms to reduce intra-city travel time by 15% (Ding, 2018: 6). Additionally, facial recognition systems developed by SenseTime and Megvii have been widely deployed in over 100 Chinese cities across security, transportation, and crowd management sectors. This level of application demonstrates the close nexus between public policy and advanced technology in China.

At the global level, China seeks to export its technological model to other nations. Based on data from the Carnegie Endowment, by 2022, more than 38 countries engaged in AI cooperation with China through joint projects or technology transfers (Feldstein, 2022: 15). A significant portion of these nations are located in Africa, Central Asia, and the Middle East. This pattern of technological cooperation serves not only as an export instrument for China but also as a platform for geopolitical influence and the formation of medium- to long-term technological dependency.

Academic Infrastructure and Social Implications

Alongside these achievements, China has made substantial investments in education, academic research, and the cultivation of AI elites. Universities such as Tsinghua and Peking University have evolved into regional hubs for AI research. By establishing the "Institute for AI International Governance" in 2018, Tsinghua University rapidly positioned itself among the world's top 10 research centers in this field (Tsinghua University AI Report, 2021). Moreover, the collaboration between universities, the government, and technology companies within research consortia constitutes one of China's comparative advantages relative to the decentralized models of Western countries. However, this technological policy is not devoid of human and social implications. In Chinese society, AI has gradually permeated daily life: from healthcare services based on automated diagnosis to personalized education and even robotic judges in digital courts. Nevertheless, concerns regarding social control, privacy

violations, and algorithmic discrimination have also been raised. The Chinese political system, historically inclined towards high surveillance and data control, may utilize AI tools to reinforce "digital authoritarianism." This has sparked debates in global academic circles regarding the ethical nature of AI development in non-democratic regimes.

Conclusion of the Chinese Model: Overall, China's pursuit of technological and economic dominance through AI reflects a convergence of strategic rationality, robust resource mobilization, and the close alignment of political authority with technological institutions. Although the United States retains the lead in fundamental innovations, the Chinese model possesses unique advantages due to its implementation capability, scalability, and political backing. The competition between these two technological powers will shape the future order of the global digital economy; an order in which algorithms will serve not merely as data analysis tools but as decisive components of geopolitical dominance.

2. AI Policies in India: Incremental Innovation and Inclusive Development

In the era of digital transformation, holding a distinctive position in the global economy, India has opted for a unique trajectory in AI development and governance. Unlike China, which pursues geopolitical dominance via AI through an aggressive agenda and massive investment, India has adopted an incremental, human-centric, and development-oriented approach. By emphasizing concepts such as "AI for All," "responsible development," and "universal access," the country endeavors to harness AI in service of objectives like poverty alleviation, the enhancement of social welfare, and economic prosperity (NITI Aayog, 2018: 7).

Strategic Foundation and Human-Centric Orientation in India: India's inaugural strategic document in the AI domain was published in 2018 by the government's official think tank, NITI Aayog, titled "National Strategy for Artificial Intelligence." In this document, five key sectors—Healthcare, Agriculture, Education, Smart Cities, and Infrastructure—were identified as national priorities.

Contrary to the industrial-centric or militaristic approaches of other nations, these priorities reflect India's social perspective on the issue of technology. The ultimate goal is defined as utilizing AI to bolster social justice, reduce inequality, and ensure inclusive access to public services (NITI Aayog, 2018: 11–15). India's approach to AI can be considered a continuation of the macro-policy of "Digital India"; an initiative launched in 2015 aiming to connect all strata of society to the country's digital ecosystem. This policy provided the necessary institutional and cultural foundation for the indigenization of emerging technologies, including AI (Ministry of Electronics and Information Technology, 2020). Among the successful initiatives in this regard is the "AI for Youth" program, designed to teach fundamental AI skills to students, which has covered over 250,000 students by the end of 2023 (MeitY, 2023).

Startup Growth and the Role of India's Private Sector

In recent years, India's AI innovation ecosystem has expanded at a remarkable pace. According to the AI Index 2024 report, India ranks third globally in terms of the number of active AI startups, following the United States and China. Between 2019 and 2023 alone, a

growth rate exceeding 32% was observed in AI startup registrations within the country (Stanford HAI, 2024: 188). Furthermore, CB Insights data indicates that in 2023, approximately $1.3 billion in foreign investment was attracted to this sector, although this figure still accounts for only 1.3% of total global investment (CB Insights, 2023).

One of the drivers of this sector's growth has been the active role of Multinational Corporations (MNCs) in supporting indigenous AI projects in India. For instance, Google established its research center in Bengaluru under the "AI Research India" initiative, and Microsoft, in collaboration with the Ministry of Education, has formulated programs for AI education in rural areas (World Economic Forum, 2022). These collaborations have not only facilitated knowledge transfer but have also contributed to the maturation of the innovation ecosystem and the mitigation of brain drain.

Regulation and Ethical Frameworks

From a legal and regulatory perspective, India has thus far refrained from enacting comprehensive AI legislation, emphasizing instead voluntary, advisory, and decentralized approaches. In 2021, the Ministry of Electronics and Information Technology (MeitY) released the "Responsible AI Framework," which emphasized principles such as transparency, non-discrimination, algorithmic accountability, and data protection (MeitY, 2021). Rather than imposing stringent restrictions, this framework seeks to encourage private actors to adhere to ethical standards. Moreover, India plays a role in formulating global ethical standards in AI through active participation in international bodies such as the OECD and UNESCO. This engagement, coincident with India's aspiration to participate in global technology governance, indicates the maturity of its policymaking in this domain (OECD, 2022).

Decentralization and Technological Equity

A distinctive attribute of India's AI policymaking is its emphasis on technological equity and implementation decentralization. States such as Tamil Nadu, Karnataka, and Maharashtra have enacted autonomous AI policies, and numerous pilot projects have been implemented in rural and marginalized regions. For instance, the "AI for Agriculture" project in Andhra Pradesh, executed in collaboration with IBM to provide intelligent recommendations to farmers, has yielded positive results regarding resource consumption reduction and productivity enhancement (World Economic Forum, 2022). Furthermore, the deployment of AI in public services—such as the judicial system (via the SUPACE project in the Supreme Court), disaster management (flood forecasting), and public health (COVID-19 tracking)—has expanded incrementally (MeitY, 2023). These applications, while enhancing state efficiency, have also bolstered public trust in technology.

Structural Challenges and Future Prospects

Despite significant advancements, AI development in India confronts manifold challenges. Primarily, the pervasive digital divide between urban and rural regions impedes the equitable distribution of AI dividends. According to data from the Telecom Regulatory Authority of India (TRAI), by the end of 2023, only 41% of rural areas possessed access to stable broadband internet (TRAI, 2023). Secondly, the scarcity of skilled human capital constitutes a

fundamental obstacle to AI development in the country; as per the Nasscom report, India faced a shortage of over 500,000 skilled professionals in data and AI domains in 2024 (Nasscom, 2024). Moreover, concerns regarding data security and the potential for algorithmic bias have been raised. The absence of a comprehensive data protection law and delays in enacting the "Digital Personal Data Protection Bill" have shrouded the legal landscape of technological development with ambiguity. However, some Indian scholars argue that this flexible approach may catalyze indigenous innovation in the long run (Chakravarty& Sharma, 2023).

Conclusion of the Indian Model: In summary, India's AI policies reflect a human development paradigm within the digital sphere. Rather than a precipitate rush toward technological hegemony, India has pursued a stable, indigenized, and socially participatory trajectory. Although challenges such as the digital divide, infrastructural weaknesses, and talent shortages persist, the political commitment to inclusive development, coupled with the rapid growth of the innovation ecosystem and private sector participation, delineates a promising future for the nation. India may represent an emerging model for other developing nations seeking to leverage technology to achieve sustainable development and social justice.

3. Comparative Analysis of Economic Development in China and India

Economic development is a multidimensional and inclusive concept that transcends the boundaries of mere economic growth. While economic growth is primarily measured by the increase in Gross Domestic Product (GDP), economic development refers to a process through which a country, a region, or the entire world ascends to a new level of economic performance. This transformation denotes not only the growth of economic output but also encompasses deeper dimensions such as human welfare, livelihood security, equality of opportunity, and the realization of human capabilities. Indeed, "economic development is a process through which a country, region, or the world achieves a higher level of economic performance. Although usually accompanied by economic growth, other dimensions such as happiness, security in achieving a good life, and the realization of human capabilities are also considered important criteria of development" (Ravenhill, 2017: 416).

As interpreted by Malizia, "economic development implies structural change in the economy in association with technological and social progress," which is accompanied by the reduction of poverty, unemployment, and inequality, and the increase of productivity and income, particularly among lower-income classes (Malizia, 1986: 490). Furthermore, economic development necessitates transformations in values, institutions, and organizational patterns, and cannot be evaluated solely by increases in production output or income indices.

Selection of Indicators

Accordingly, to compare the consequences of AI policies in China and India, this article considers a set of composite indicators, comprising:GDP growth rate;GDP per capita based on Purchasing Power Parity (PPP);Share of the digital economy in GDP;Unemployment rate; Exports of high-tech goods and services;Foreign Direct Investment (FDI) inflows in AI-related sectors.

1. Comparative Analysis of GDP Indicators (2017–2025)

Table 1. Comparison of GDP Growth Rates in China and India from 2017 to 2024

Year	China GDP growth rate (%)	India GDP growth rate (%)
2017	6.9	6.8
2018	6.7	6.4
2019	6.1	3.9
2020	2.1	-5.8
2021	8.4	9.7
2022	3.0	7.0
2023	5.2	9.2
2024	5.0	6.5

Source: World Bank.2024

As illustrated in the table, during the aforementioned period—which marks the inception of AI policymaking to the present—the statistics indicate a divergence in the economic development patterns of the two nations. China maintained a stable growth rate of approximately 6% to 7% during the initial phase of this period. The repercussions of the COVID-19 pandemic are evident in the country's economic growth in 2020, reducing it to 2.1%.

Conversely, the Indian economy experienced a more precipitous decline in the same year (approximately -5.8%), yet recovered at a more accelerated pace in the subsequent year. Furthermore, the data highlights India's impressive economic growth from 2021 to 2023, whereas China's economic growth during these years ranged between 5% and 8%. Consequently, throughout this period, and particularly following the COVID crisis, India has succeeded in maintaining a higher growth rate relative to China. It appears that regarding this indicator, India has managed to leverage opportunities within the digital economy and the AI-driven innovation ecosystem to sustain and bolster its economic growth.

2. Comparative Analysis of GDP Per Capita based on Purchasing Power Parity (PPP) in China and India (2017–2024)

Table 2. Comparison of GDP Per Capita (PPP) for China and India from 2017 to 2024

Year	China GDP per capita-PPP	India GDP per capita-PPP
2017	16.758	7.327
2018	17.807	7.714
2019	18.821	7.930
2020	19.215	7.400
2021	20.843	8.050
2022	21.499	8.594
2023	22.687	9.302
2024	23.846	9.817

(**Source**: EconScope.2024)

As is evident in the table above, regarding this indicator—namely, GDP per capita based on Purchasing Power Parity (PPP)—China has consistently maintained a higher level compared to India throughout the period of this research. Specifically, in 2024, this figure stood at $23,846 for China and $9,817 for India. However, as elucidated in the previous section, India's growth rate of per capita GDP has been relatively more rapid during this same interval, particularly following 2020, when the Indian government implemented targeted policies in the realm of Artificial Intelligence. Consequently, although China possesses a

higher level of per capita income, India, through its AI policies, has succeeded in accelerating the trajectory of bridging the gap with China regarding this indicator.

3. Comparative Analysis of the Share of the Digital Economy in GDP

Regarding the indicator of the digital economy's share of Gross Domestic Product (GDP), data availability was limited. Consequently, based on accessible data, Table 3 is confined to an examination of the years 2021 and 2022 for China, and the years 2023 and 2024 for India.

Table 3. Share of the Digital Economy in GDP (2017–2024)

Year	China	India
2021	39.8%	
2022	41.5%	
2023		11.74%
2024		11.74%

(Sources: China Daily. National Bureau of Statistics of China. ET-Government)

An examination of these years, based on available data, reveals China's substantial superiority in the indicator of the digital economy's share of GDP. It appears that China has directed greater investment toward this domain compared to India, yielding superior outcomes. In contrast, India has experienced a steady yet lower growth trajectory.

4. Comparative Analysis of Unemployment Rates in China and India (2017–2024)

While India is striving to rapidly bridge the substantial GDP gap with China, it appears that China has, overall, demonstrated greater and more sustainable success in unemployment reduction. Through heavy investment in the AI domain and data-driven governance, China has succeeded in expanding the share of its digital economy and enhancing labor productivity.

Conversely, in India, although AI initiatives are still in the developmental stage, they have not yet been effective in mitigating the unemployment rate due to existing impediments, including technological infrastructure deficits and the uneven distribution of investment.

Table 4. Comparison of Unemployment Rates in India and China

Year	China	India
2017	3.9	3.5
2018	3.8	3.5
2019	3.6	3.5
2020	5.2	7.1
2021	5.0	6.5
2022	5.1(Estimate)	5.8(Estimate)
2023	5.2(Estimate)	5.5(Estimate)
2024	5.3 (Estimate)	5.2(Estimate)

Note: Some figures represent estimates and projections based on available data.

(**Sources:** Trading Economics.Gov.cn, World Bank & The Economic Times)

5. Comparative Analysis of High-Tech Goods and Advanced Services Exports

Examining the trajectory of high-tech goods and advanced services exports during the 2017–2024 period, it can be deduced that while China maintains a marked dominance over India in terms of the absolute volume of high-tech exports (exceeding $825 billion in 2023), India's growth pattern and technological diversification are indicative of dynamism and integration within the innovation ecosystem.

During this interval, India has elevated the share of high-tech exports relative to its total exports from approximately 7% to roughly 15%. This signifies a twofold increase in the export of advanced goods since the implementation of its AI governance framework. Conversely, China's growth regarding this specific indicator has witnessed a deceleration.

Table 5. Comparative Share of High-Tech Goods and Advanced Services Exports in Total National Production (Based on Available Data)

Year	China	India
2017	30.91%	7.36%
2018	31.47%	9.04%
2019	30.78%	10.22%
2020	-	-
2021	-	-
2022	-	12.68%
2023	26.57%	14.93%
2024	-	-

(**Sources:** The Global Economy Index Mundi)

6. Foreign Investment Inflows in AI-Related Sectors

To derive data for this indicator, the authoritative metric of private investment in AI-related enterprises and associated digital infrastructure (including data centers, semiconductors, and sovereign wealth funds) has been utilized.

Table 6. Private Investment in Sectors Related to AI Technologies (Data includes FDI and Venture Capital)

Year	China	India
2017	40.0	0.3-0.1
2018	22.0	0.5-0.2
2019	12.0	0.7-0.3
2020	13-11	1.0-0.5
2021	25-20	1.2-0.8
2022	14-12	1.5-0.9
2023	7.8	1.2-0.9
2024	9.3	1.16

(**Sources:** World Bank; OECD.2021; Stanford HAI.2025; AI Index Report.2024 & 2025)

As can be inferred from the data, throughout the timeframe of this research, China has experienced substantial yet volatile investment in AI-related enterprises and infrastructure, whereas India has exhibited slow but consistent growth. In 2017, with the implementation of the "New Generation Artificial Intelligence Development Plan," China witnessed a massive surge in capital attraction, with the volume of private investment in this sector reaching $20 billion (China State Council, 2017 & Stanford HAI, 2025). However, following the peak period of 2018, and particularly with the initiation of strict regulatory measures on technology firms (during the 2020–2022 interval) alongside data and algorithm control policies, investment flows into this domain contracted, plummeting to approximately $7 billion in 2023. In 2024, however, driven by state support, the establishment of a 60 billion Yuan national fund, and an emphasis on technological self-reliance, investment rebounded to approximately $9 billion. Conversely, India, despite the absence of massive financial markets and comparable sovereign funds, has experienced a gradual yet steady growth trajectory. Figures rose from approximately $400 million in 2017—one year prior to the implementation of the AI governance document—to over $1.1 billion in 2024 (NITI Aayog, 2018 & Our

World in Data, 2024). The "AI for All" national policy and the strategy of public-private-academia partnership have directed investments primarily toward social sectors such as healthcare, education, and agriculture, signaling a gradual expansion of the innovation ecosystem in India (World Bank, 2021 & 2022).

It appears that while the concentration of state power and top-down direction in China have accelerated the capacity for capital attraction, they have simultaneously engendered substantial regulatory volatility. Conversely, India, with its participatory governance structure and gradual regulatory approach, has fostered relative stability, albeit accompanied by a slower pace of growth.In sum, China's centralized governance benefits from economies of scale and resource advantages; however, it remains equally vulnerable to political shocks. Whereas India's AI governance model is better positioned to cultivate investor confidence in the long term.China currently confronts challenges such as an aging population, local government debt, and technological competition with the United States. Nevertheless, continued investment in domains such as AI, renewable energy, and high-tech supply chains sustains the nation's competitive standing.India, on the other hand, leverages its demographic dividend (youthful population), internet expansion, and the attraction of technology firms. Initiatives such as "Digital India," "Skill India," and "India Stack" have generated capacities that, contingent upon effective policymaking, could transform India into the future growth engine of Asia.Furthermore, India's institutional capacity for structural reform and the reduction of inequalities will be the determinant of its development trajectory's success. India's comparative advantage in democracy and transparency, if coupled with infrastructure development and economic cohesion, could establish a sustainable competitive advantage.

Overall, the comparative analysis of economic development in China and India demonstrates that no singular model for success exists. Through state centralization and strategic planning, China has achieved faster growth and superior human indices, yet it grapples with challenges regarding social justice and environmental sustainability. India, adopting a more open, democratic, and participatory model, has experienced more gradual growth but requires deep institutional reforms and greater structural equity. Ultimately, the quality of public institutions, social cohesion, technological governance capacity, and the robustness of education and healthcare systems will serve as the decisive factors for the sustainability of development in both nations.

Analysis

A review of the experiences of China and India in leveraging Artificial Intelligence reveals that this technology is not merely a technical instrument, but a structural and multidimensional factor in shaping the economic development trajectories of nations. In effect, the manner in which governments engage with AI not only steers economic growth but also influences social justice and even their geopolitical standing. In the case of China, the government, adopting an authoritarian, centralized, and long-term approach, undertook massive investments in infrastructure, education, innovation, and industry. Artificial Intelligence rapidly became integral to the country's economic structure, being deployed in sectors such as manufacturing, transportation, urban services, and data-driven governance.

These policies enabled China to not only demonstrate remarkable performance in macroeconomic indicators—such as GDP, patent registrations, and financial market development—but also to elevate its position within the global technology value chain and the digital economy. Conversely, India pursued a more gradual and participatory trajectory. Emphasizing social justice, human empowerment, and the inclusivity of technological access, initiatives such as "AI for All" and "AI for Agriculture" were implemented with the objectives of reducing inequality, enhancing education, and improving public services. Although public investment in India is lower than that of China, a more open environment for private sector participation, startups, and collaboration with international corporations has gradually expanded the innovation ecosystem within the nation.

From the perspective of development indicators, these disparities also manifest themselves. China stands as a frontrunner in financial development, industrial productivity, and technological infrastructure, yet it grapples with regional inequalities and challenges regarding transparency and privacy. India, meanwhile, has achieved progress in domains such as enhancing quality of life in rural areas, digital skills training, and the expansion of public services, though it continues to contend with challenges such as the digital divide, a shortage of skilled professionals, and structural poverty.

In the international dimension, China, through technology exports and the creation of technological dependency, seeks to consolidate its geotechnological power; whereas India, although not yet fully emerged on a global scale, endeavors to present an indigenous and democratic model of technology governance.

Conclusion of the Analysis: In summary, it can be asserted that: China, by relying on authoritarian and planned policies, has experienced an accelerated and technologically driven development, succeeding in elevating its geopolitical standing in the global economy; conversely, India, through a more human-centric and gradual approach, has pursued a more stable and participatory development rooted in human capacity and social justice.

The experiences of these two nations clearly demonstrate that AI does not merely lead to economic growth but functions as a reflection of the governance models, political values, and strategic priorities of nations. Indeed, AI is as much a narrator of countries' perspectives on "development" and the "future" as it is a tool.

Conclusion

In this study, the artificial intelligence policies of China and India were examined through a comparative lens to elucidate how this technology impacts their respective economic development trajectories. The findings indicate that AI has transcended its status as a mere emerging technology, evolving into a structural and power-generating factor in shaping economies and reconfiguring the global order. Nations that have successfully taken effective strides in the development and deployment of AI have gradually secured a more robust standing in the economic and geopolitical arenas. In this context, the concept of "Economic Geotechnology" has gained increasing prominence as the nexus between advanced technologies and global competitions.

In China, the government, employing a centralized approach and massive investment (exceeding $26.7 billion in 2018), has bolstered the financial and institutional infrastructures necessary for AI growth. This state planning and support have enabled China's financial markets to play an active role in fostering technological innovations and attracting substantial investments. Conversely, India has pursued a divergent trajectory. By engaging the private sector and eschewing massive state expenditures, the government has facilitated an environment for startup growth, successfully attracting approximately $1.3 billion in foreign capital in 2023. Nevertheless, challenges such as inadequate infrastructure and weak institutional support have constrained progress in this indicator. Leveraging AI across various industries, particularly in manufacturing and the supply chain, China has elevated its position in global trade. By 2023, the nation succeeded in implementing AI technology in 23% of large enterprises and, in 2022, accounted for approximately 26% of all global patents in this domain. Furthermore, technological collaboration with 38 different countries has further expanded the scope of China's commercial influence.

In contrast, India, focusing on indigenous innovation and the motto "AI for All," has adopted a more gradual path. Although multinational corporations such as Google and Microsoft have played a pivotal role in knowledge transfer and supporting the technological ecosystem, this trajectory has been slower than China's aggressive model and has yet to yield a tangible impact on increasing trade openness

China has taken significant strides in enhancing the quality of life of its citizens by deploying AI in initiatives such as smart cities and data-driven healthcare services. For instance, the utilization of AI in traffic management has resulted in a 15% reduction in travel time in certain urban centers. Nevertheless, the proliferation of this technology has concurrently raised concerns regarding privacy and social control. Conversely, India, emphasizing a human-centric approach, has leveraged AI to promote public welfare. The concentration on sectors such as education, healthcare, and agriculture signifies a distinct attention to social justice. Programs such as "AI for Youth," aimed at imparting digital skills to students, have had a direct impact on the enhancement of Human Development Indices (HDI). While China's centralized model has succeeded in accelerating economic growth, it may potentially exacerbate inequality in marginalized regions—areas possessing limited access to technological infrastructure and, consequently, remaining deprived of the dividends of AI. In contrast, India, through the implementation of projects in rural and state-level regions—such as the "AI for Agriculture" initiative in Andhra Pradesh—has endeavored to achieve a more equitable distribution of technological benefits. However, the urban-rural digital divide—exemplified by low statistics of broadband internet access (merely 41% by the end of 2023 in rural areas)—has constituted a formidable obstacle to the realization of this objective.

Regarding China, despite rapid economic growth, sufficient data concerning the direct impact of AI policies on multidimensional poverty reduction remains unavailable. In India, however, the utilization of AI in improving public services—including healthcare, education, and disaster management—is conceptualized as an instrument for poverty alleviation and

improving access to basic services. The Indian government's perspective on AI is interpreted not merely as a tool for economic growth, but as a vehicle for promoting social justice.

Overall, China's approach to AI policymaking is predicated on state authority, massive investments, and structural centralization; a model that has engendered rapid economic growth and the elevation of the nation's geopolitical stature. Conversely, India, adopting a participatory and gradual approach, pursues a more stable yet slower development trajectory, founded upon democratic and equity-oriented foundations. These two models not only illustrate a divergence in technological perspectives but also impose significant strategic implications on the power structure, economic efficiency, and the level of social inequality within each nation. What emerges from this comparison is the imperative of comprehending Artificial Intelligence as a structural and multifaceted phenomenon that simultaneously impacts the economy, security, governance, and justice.

References

Aghion, P., Jones, B., & Jones, C. (2017). Artificial intelligence and economic growth (NBER Working Paper No. 23928). National Bureau of Economic Research. https://doi.org/10.3386/w23928

Agrawal, A., Gans, J., & Goldfarb, A. (2019). Economic policy for artificial intelligence. *Innovation Policy and the Economy*, 19(1), 139–159.

Baldwin, R. (2019). *The globotics upheaval: Globalisation, robotics and the future of work*. Weidenfeld & Nicolson.

Bostrom, N. (2017). Superintelligence. Oxford University Press.

China State Council. (2017). A next generation artificial intelligence development plan. The State Council of the People's Republic of China. Available at: http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm (Accessed on: November 11, 2025).

EconScope. (2025). Real GDP per capita, PPP – China & India [Data set]. World Bank. Available at: https://econscope.com/economies/china/gdp-real-ppp-per-capita (Accessed on: November 6, 2025).

Gonzales, J. T. (2023). Implications of AI innovation on economic growth: A panel data study. *Journal of Economic Structures*, 12(1), 13. https://doi.org/10.1186/s40008-023-00307-w.

Hemous, D., & Olsen, M. (2014). The rise of the machines: Automation, horizontal innovation and income inequality (CEPR Discussion Paper No. 10244). Centre for Economic Policy Research.

Kim, S. S., & Choi, Y. S. (2019). The innovative platform programme in South Korea: Economic policies in innovation-driven growth. *Foresight and STI Governance*, 13(3), 13–22. https://doi.org/10.17323/2500-2597.2019.3.13.22

Kitsara, I. (2022). Artificial intelligence and the digital divide: From an innovation perspective. In A. Bounfour (Ed.), *Platforms and artificial intelligence: The next generation of competences* (pp. 245–265). Springer International Publishing. https://doi.org/10.1007/978-3-030-90192-9_12

Lu, C.-H. (2021). The impact of artificial intelligence on economic growth and welfare. *Journal of Macroeconomics*, 69, 103342. https://doi.org/10.1016/j.jmacro.2021.103342

Lucas, R. E. (1988). Increasing returns and long-run growth. *Journal of Monetary Economics*, 22(1), 3–42.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, 94(5), 1002–1037.

Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5, Part 2), S71–S102.

S&P Global. (2025). *India's AI readiness report*. Available at: https://spglobal.com

Singh, R., & Kaur, G. (2020). Artificial intelligence in India: Challenges and opportunities. *International Journal of Computer Applications*, 975(8887).

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70(1), 65–94.

Stanford Institute for Human-Centered AI. (2024). AI Index report 2024. Available at: https://hai.stanford.edu

State Council of China. (2017). New generation artificial intelligence development plan (AIDP). Available at: https://digichina.stanford.edu/work/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/

Tam, P. H., Hong, T. P., Thanh, C. N., & Tran, P. (2024). AI innovation and economic growth: A global evidence. *WSB Journal of Business and Finance*, 58(1), 198–216.

Telecom Regulatory Authority of India (TRAI). (2023). Rural broadband access survey.

Trabelsi, M. A. (2024). The impact of artificial intelligence on economic development. *Journal of Electronic Business & Digital Economics*, 3(2), 142–155.

Udvari, B., &Ampah, I. K. (2018). Impacts of aid for innovation on economic growth in the Sub-Saharan African countries. *Mediterranean Journal of Social Sciences*, 9(4), 99-108. Doi: 10.2478/mjss-2018-0119.

United Nations Development Programme. (2023a). Human development data center. Available at: https://hdr.undp.org/data-center

United Nations Development Programme. (2023b). Human development report 2023. Available at: https://hdr.undp.org/data-center/thematic-composite-indices/gii#/indicies/GINI

United Nations Development Programme. (2024). Human development report 2023/24: Breaking the gridlock. Available at: https://hdr.undp.org

UNDP & Oxford Poverty and Human Development Initiative. (2023). *Global multidimensional poverty index 2023*. Available at: https://hdr.undp.org

Waltz, K. N. (1979). *Theory of international politics*. Addison-Wesley.

World Bank. (2021). *Gini index*. Available at: https://data.worldbank.org/indicator/SI.POV.GINI

World Bank. (2022). *Global financial development report*. Available at: https://www.worldbank.org/en/publication/gfdr

World Bank. (2023). *World development indicators*. Available at: https://data.worldbank.org

World Bank. (2024a). Gini index (World development indicators). Available at: https://data.worldbank.org/indicator/SI.POV.GINI?locations=CN-IN

World Bank. (2024b). *World development indicators*. Available at: https://data.worldbank.org

World Bank. (2025). *GDP growth (annual %) – China & India*. Available at: https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG (Retrieved October 29, 2025).

World Economic Forum. (2022). AI in agriculture: India's pilot programs.

World Trade Organization. (2024). *Trade profiles 2024: China & India*. Available at: https://www.wto.org/english/res_e/statis_e/wts2024_e/country_profiles_e.htm

Zeira, J. (1998). Workers, machines, and economic growth. *The Quarterly Journal of Economics*, 113(4), 1091–1117. https://doi.org/10.1162/003355398555847