Discussion Paper Series

IZA DP No. 18867

August 2026

Judicious Use of AI Can Help Vietnam Become a High-income Country

Hai-Anh H. Dang
World Bank, IZA@LISER, GLO,
Indiana University, LSE,
University of Economics Ho Chi Minh City
and VinUniversity

IZA@LISER NETWORK
ISSN: 2365-9793

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Abstract

Viet Nam's goal for high-income status by 2045 requires roughly 5.5% annual growth in income per capita, versus 5% historically. We offer thoughts on whether artificial intelligence (AI) can supply the missing margin. Reviewing the growing AI literature, we find that appropriate policies are instrumental. Viet Nam has several advantages, including scoring a high score above what its income predicts on government AI readiness and its AI diffusion rate is rising faster than in any other low-income or middle-income economy. Borrowing results from existing cross-country evidence on digital adoption, we construct three tentative growth scenarios on AI adoption. Broad and deep adoption could help the country reach its goal earlier than the baseline without any adoption. Realizing that dividend depends on four priorities: teachers first, electricity and Viet Namese-language data, an open-source latecomer strategy reaching millions of small firms, and institutions that pay for talent. These findings can be relevant to other developing countries.

JEL classification

H00, I3, O1

Keywords

AI, middle-income, growth, poverty, inequality, Vietnam

Corresponding author

Hai-Anh H. Dang
hdang@worldbank.org

* We would like to thank Khang Luu for useful feedback on earlier drafts. We are grateful to the UK Foreign Commonwealth and Development Office (FCDO) for funding assistance through the Data and Evidence for Tackling Extreme Poverty (DEEP) Research Program.

1. Introduction

In July 2025, at the International Mathematical Olympiad in Australia, Viet Nam's students won two gold medals and placed ninth among 113 national teams. At the same competition, an artificial intelligence (AI) system from Google DeepMind reached gold-medal standard for the first time, solving five of six problems graded by the Olympiad's own jury. Ten months later, an OpenAI model refuted a decades-old conjecture of the mathematician Paul Erdős. AI is no longer merely imitating routine human work. It has entered the domain in which Viet Namese people take perhaps the greatest pride—mathematics.

The following summer brought a milestone of a different kind. On July 1, 2026, the World Bank reclassified Viet Nam as an upper-middle-income economy, with income per capita reaching US$4,970 after two years of 7–8% growth. The next threshold, high-income status at US$14,376, is the one that matters for the country's ambition of becoming a developed nation by 2045, the centenary of its independence. Arriving on time requires sustaining roughly 5.5% annual growth in income per capita for two decades, a feat managed by only a handful of economies (World Bank, 2025, 2026a). The conventional reform agenda of institutions, infrastructure, and skills remains necessary. But we argue that AI, used judiciously, is the one new instrument that can raise the productivity of every item on that list at once. If used carelessly, it could instead entrench Viet Nam in a low-value assembly role. Which of the two happens will be strongly influenced by policy choice, not technological destiny.

The new economics of AI

A fast-growing economics literature frames what is at stake. In randomized experiments, generative AI raises productivity substantially and raises it most for the less experienced. Professional writers finish about 40% faster with better output; customer-support novices gain twice as much as their seasoned colleagues; consultants excel inside the technology's zone of competence, yet do *worse* than unaided peers just beyond that "jagged frontier" (Noy and Zhang, 2023; Brynjolfsson *et al.*, 2025; Dell'Acqua *et al.*, 2026). Diffusion, meanwhile, has outpaced every general-purpose technology on record, including the personal computer and the internet. Within two years of ChatGPT's launch, roughly one in ten adults on Earth was using it weekly (Chatterji *et al.*, 2025; Bick *et al.*, 2026).

The aggregate numbers counsel humility. In Denmark, where chatbots reached most exposed workplaces, administrative data show precisely estimated *null* effects on earnings and hours two years in. The lesson is that general-purpose technologies pay off with a lag, after complementary investment in processes and skills (Brynjolfsson *et al.*, 2021; Humlum and Vestergaard, 2026). Macro projections span an order of magnitude. At the skeptical pole, Acemoglu (2025) estimates US productivity at less than 1% per decade from AI. Mid-range OECD estimates are several times larger, and optimists see a boom rivaling the 1990s IT acceleration (Baily *et al.*, 2023; Filippucci *et al.*, 2024). Theory explains the spread. Aggregate gains are capped by the essential tasks AI

cannot yet do, and by the race between automation, which displaces labor, and the creation of new tasks, which reinstates it (Acemoglu and Restrepo, 2018; Aghion *et al.*, 2019).

Distribution is where the literature turns cautionary. Automation technologies explain 50–70% of the rise in wage inequality between US worker groups since 1980 (Acemoglu and Restrepo, 2022). Within countries the evidence cuts both ways: AI narrows gaps by lifting novices, and could rebuild middle-skill work by extending scarce expertise (Autor, 2024). But the evidence is not yet conclusive: among Kenyan entrepreneurs, an AI assistant raised top performers' profits by over 15% while the weakest did roughly 10% *worse* (Otis *et al.*, 2026).

Across countries, the risks compound. Over the longer run, AI erodes the labor-cost advantage that underpins export-led development, and experts warn of a new "great divergence" toward AI-ready economies (Alonso *et al.*, 2020; Korinek and Stiglitz, 2021; Acemoglu, 2024; Cerutti *et al.*, 2025). Exposure to large language models is more than twice as high in rich countries as in low-income ones, yet the poorest are the least prepared to capture the gains (Cazzaniga *et al.*, 2024). The World Bank's new *World Development Report 2026* balances the ledger. Today, fewer than 5% of jobs in low- and middle-income countries face near-term automation risk, roughly a third of the rich-country share, while about one job in six could enjoy meaningful productivity gains. That window stays open only where the complements of electricity, skills, data, and institutions get built (World Bank, 2026b).

For a middle-income country aspiring to high income, then, the question is not whether AI will lift or sink it. The literature says it can do either. The question is which policies could tilt the balance. Viet Nam is an unusually instructive case.

2. Viet Nam's current position on the global AI map

There is already strong AI adoption in Viet Nam, in both public and private sectors. Fully 81% of the country's internet users report engaging with AI daily, the highest share in Southeast Asia (Google, Temasek and Bain, 2025). Separate telemetry-based measures tell the same story. By early 2026, 26.5% of Viet Nam's working-age population was actively using AI tools.[1] Over the preceding nine months, that share rose faster than in any other low- or middle-income economy, outpacing the United States and overtaking richer Malaysia and Thailand even as the global AI divide widened (Microsoft AI Economy Institute, 2026; Appendix Table A1).

The share of firms applying AI in management more than doubled in two years, reaching 72% in 2024, according to business-software provider MISA (Tuoi Tre, 2025). In a June 2026 Microsoft Viet Nam survey of 2,000 workers (VIR, 2026), 76% of AI users said the technology let them

[1]The self-reported engagement figures are far higher than telemetry-based estimates because they count any AI-mediated activity among internet users, including features embedded in familiar apps. The gap between the two numbers is itself evidence for this essay's distinction between casual adoption and productive intensity.

produce work they could not have done a year earlier, far above the 58% global average. AI training has helped teachers in remote highland schools cut up to two hours a day from lesson preparation, narrowing the knowledge gap between urban and rural classrooms (Box 1).

Official readiness matches this grassroots enthusiasm, and here the data hold a genuine surprise. Viet Nam scores 60.0 out of 100 on the 2025 Government AI Readiness Index (GAIRI), ranking 45th of 195 countries and fifth in ASEAN, *above* the average of high-income countries (58.0; Figure 1, panel a). Readiness rises with income across countries, and Viet Nam sits about 21 points above the level its GDP per capita predicts (panel b). This is one of the ten largest positive gaps in the world, in the company of India and China. Viet Nam has been here before: its students' PISA scores famously exceed what the national income would predict, a statistical outlier confirmed by formal tests (Dang *et al.*, 2023). The pattern appears the same: capabilities running ahead of income. This can be the defining trait of economies that eventually break through.

The paradox is that this enthusiasm and readiness coexist with a strikingly thin production base. The readiness index itself shows where. Viet Nam's Governance dimension scores 88 out of 100, above the United States and Singapore. Its capacity dimensions, Development & Diffusion and Resilience, score barely half that (Appendix Table A2). The state is ready. The production system is not.

The production numbers say the same. Viet Nam counts only about 300 AI specialists with doctoral or post-doctoral training. Research and development spending, at roughly 0.4% of GDP, is one-fifth of the target that the Politburo's Resolution 57 sets for 2030 (Politburo, 2024). Only about a tenth of announced data-center capacity is operating, and building the rest would strain the power system. The digital economy still says “workshop”: the lion's share (87%) of US$152 billion in digital-technology industry revenue was still hardware and electronics assembled for export by foreign-invested firms. The digital economy contributes about 14% of GDP, less than half of the 2030 target.

But a low starting point is not an empty hand. Viet Nam brings three real assets to this race. First, Viet Nam has demonstrated human capital (the PISA record) and a globally connected AI diaspora, including Viet Namese-origin researchers working at the AI frontier: Le Viet Quoc (a Google Brain co-founder), Luong Minh Thang (co-lead of DeepMind's AlphaGeometry), and Bui Hai Hung (founder of VinAI).[2] Second, the country has an unusual geo-technological position. NVIDIA, which calls Viet Nam its “second home”, opened an R&D center there in late 2024 and acquired the medical-AI firm VinBrain. FPT, a major Viet Namese information technology and

[2]The diaspora, meanwhile, is not just a list of names but can serve as a policy compass. Speaking at the AI–semiconductor conference AISC 2025 in Hanoi, Le Viet Quoc, a co-founder of Google Brain, put the priority plainly: “Every achievement in history has required human intelligence… we need to concentrate investment in people.” Arriving late, he argued, carries advantages of its own: “those who come after can learn from the lessons encountered by those who went first” (Dan Tri, 2025; author's translation). Vietnam's most credentialed AI voice, in other words, recommends neither chip fabs nor frontier models as the first move, but people. The four priorities below (Section 4) take that ordering seriously.

services company, recently placed two "AI factories" at ranks 36 and 38 of the world's TOP500 supercomputers. Qualcomm acquired MovianAI, VinAI's generative-AI arm. (Such inflows cut both ways: foreign capital can pull Viet Namese talent and assets into foreign orbits).

Third, the government offers early and strong institutional momentum. Resolution 57 (December 2024) regards science, technology, innovation, and digital transformation and digital transformation as first-order priorities. It has been likened by the Party General Secretary to "Khoán 10," the agricultural reform that transformed Viet Nam from a country with severe hunger into one of the world's leading rice exporters in the early 1990s. The Law on Artificial Intelligence, effective March 2026, places Viet Nam among the first countries with a comprehensive AI statute. The 14th Party Congress put semiconductors and AI at the center of a double-digit growth agenda. The government is building a network of 500-plus Viet Namese AI experts worldwide with a target of reaching the world's top 30 in AI readiness by 2030, up from rank 45 today. That promise can be measured.

3. Three scenarios for AI and economic growth

How much growth might AI adoption actually buy? While some estimates exist (Section 1), there is no historical record of AI-driven growth to estimate from. We therefore borrow from the closest evidence we have: two decades of cross-country studies of digital adoption. A 10-percentage-point increase in broadband penetration raised annual per-capita growth by 0.9–1.5 points in instrumented rich-country panels, and mobile-broadband adoption raised GDP in a 135-country panel, with effects that faded after several years. A meta-analysis of the full literature confirms a positive average effect. Quasi-experimental evidence from Africa's submarine internet cables shows connectivity translating into firm entry, productivity, and jobs, including for less-educated workers (Czernich *et al.*, 2011; Edquist *et al.*, 2018; Stanley *et al.*, 2018; Hjort and Poulsen, 2019; exact coefficients in Table 1).

Some cautions temper the transplant. Developing countries enjoy no automatic latecomer premium, since ICT returns are statistically similar across income levels (Niebel, 2018). What separates rich from poor countries in the long run is not *when* they adopt a technology but *how intensively* they use it (Comin and Mestieri, 2018). That last finding should hang over every Viet Namese AI dashboard. While a large casual usage rate is encouraging, it is just adoption and may not yet translate into real productivity. Finally, readiness and consumer use matter only through a conversion process. Firms and public agencies must redesign tasks, train workers, connect proprietary data, and measure quality; only then can lower task costs or new products become sector productivity and, eventually, higher national income. Given some more technical caveats, the estimates below should be read as illustrations rather than forecasts.[3]

[3]Three other caveats are in order. First, broadband's measured growth effects came bundled with heavy physical investment. AI diffuses through software. This is cheaper to adopt, which argues for larger effects, but gated by skills

Table 1 turns these coefficients into three scenarios for Viet Nam, treating a rise in AI adoption the way the literature treats a rise in digital penetration. The baseline assumes Viet Nam continues its 2011–2024 (compound or geometric) average of about 5% annual growth in income per capita with no distinct AI dividend. Each scenario then adds an AI increment calibrated to a segment of the evidence. The arithmetic compounds Viet Nam's 2025 GNI per capita (US$4,970) to the high-income threshold (US$14,376, held constant in real terms).

Read against the calendar, the AI dividend is worth roughly two to four years of arrival time. That understates its true significance. Against the roughly 5.5% requirement noted earlier, Viet Nam's historical 5% falls short. Given the assumptions, the medium case returns Viet Nam roughly to the 2045 path, while the strong case creates a buffer. AI is not sufficient for high income. No single technology is. But on current evidence it is the most plausible source of the missing percentage point. It is the margin of victory, not the whole race.[4]

What about poverty and shared prosperity? The digital precedents are encouraging. Mobile money lifted about 2% of Kenyan households out of extreme poverty (Suri and Jack, 2016; see Aker and Mbiti, 2010, for the broader evidence). Mobile broadband raised household consumption and cut poverty in Nigeria, with the largest gains among poorer households, and fast internet raised employment for less-educated workers across Africa (Bahia *et al.*, 2024; Hjort and Poulsen, 2019). AI could replay this pro-poor script at lower cost—if access, language quality, skills, and service design are deliberately pro-poor—because what it distributes is *expertise*. The highland teachers saving two hours a day are an early Viet Namese example. The same logic extends to crop advice for smallholders, triage support for commune health stations, and plain-language legal help. This is exactly what "small AI" promises: low-cost tools that put scarce expertise within reach of millions (Box 1).

But the fine print matters, in three clauses. First, within-country gaps can widen: exposure concentrates in urban, formal, clerical work (Gmyrek *et al.*, 2023), and the Kenyan experiment warns that the least-skilled users can lose ground even as stronger users gain (Otis *et al.*, 2026).

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and organizational change rather than trenches and towers, which argues for slower ones (Brynjolfsson *et al.*, 2021). Second, even the best-identified digital coefficients may shrink in transit: no latecomer premium is guaranteed (Niebel, 2018), aggregate gains are capped by the tasks machines cannot yet do (Aghion *et al.*, 2019), and the most careful task-based accounting of AI itself implies modest economy-wide effects within a decade (Acemoglu, 2025). Finally, we assume persistent AI-induced growth for the whole period.

[4]Panel (c) of Figure 1 further highlights the need to be careful with regression analysis that cannot properly address endogeneity for AI adoption. AI use is diffusing along the income gradient: richer countries use it more. Regressing recent growth (2023–24 average) on AI diffusion across 137 economies yields a *negative* slope, about −0.8 percentage points of growth per 10 points of diffusion, with or without controlling for income. If measured over the structural horizon of 2015–2024 instead, the association disappears entirely (a statistically insignificant +0.1 per 10 points; Appendix Figure A1). The cross-section merely records that AI arrived first in rich, service-heavy economies that were already growing slowly, while fast-growing developing economies are still early on the adoption curve. Its sign flips with the growth window chosen. This is precisely why in Table 1 we use for inputs the more rigorous IV and panel data estimates from within-country changes in digital adoption, rather than from comparisons across countries only at a single snapshot in time.

Viet Nam's education system delivers high averages with unusually low inequality, an asset AI deployment should be measured against, not allowed to erode.

Second, dependency is real. The current AI race is dominated by two countries: just 100 companies, mostly American and Chinese, account for 40% of global corporate AI R&D (UNCTAD, 2025). In addition, only 32 countries host AI-specialized data centers, with US and Chinese firms operating over 90% of that capacity (Lehdonvirta *et al.*, 2024). Frontier models also appear to serve Viet Namese-language users measurably worse than English speakers at the same price.

Third, careless use carries cognitive costs. In a randomized study of nearly a thousand Turkish students, unrestricted GPT-4 help boosted practice performance by 48%, then *lowered* unassisted exam scores by 17%. A tutor-style version that scaffolded rather than answered eliminated the harm (Bastani *et al.*, 2025). Recent neuroimaging evidence points the same way. The more confident workers are in generative AI, the less critical thinking they report, and brains engage measurably less when writing with an assistant (Lee *et al.*, 2025; Kosmyna *et al.*, 2025). Even productivity can go backward. Experienced developers were 19% *slower* with AI on code they knew well (METR, 2025). None of this argues against AI. All of it argues for the adjective in this essay's title. “Judicious” means deploying AI where it complements and scaffolds people, tutoring rather than answering, and refusing deployments that simply substitute for learning and judgment.

4. Four policy priorities for judicious adoption

Building on the complements of electricity, skills, data, and institutions that make AI pay off, we briefly discuss four policy priorities for Viet Nam.

First, people: move from teaching about AI to learning and working with AI, starting with teachers. The legal scaffolding is in place: informatics is compulsory from grade 3, the AI Law brings AI content into every education level, and a pilot framework plus a target of 8,000 specialized AI graduates a year by 2030 exist on paper (MOET, 2025; National Assembly, 2025; Prime Minister, 2025). The binding constraint is who teaches AI to 20 million students. Economies moving fast began with teachers. Beijing has made AI instruction compulsory from primary school, and Estonia equips secondary students with AI tools (Bloomberg, 2025; Republic of Estonia, 2025). Viet Nam should treat AI-plus-coding as a “third language” alongside the policy of making English the second. The country should also grade itself on an equity index, since its educational edge is precisely high performance with low disparity.

Concretely, the equity yardstick should be published annually: AI use and learning gaps by region and by income quintile. The teacher constraint needs a dated target. With roughly a million teachers in the system, certifying the first 100,000 in scaffolded-AI pedagogy within two school years, reported by province, would turn the slogan into a scoreboard. The Turkish experiment carries a direct design lesson for the classroom rollout: deploy scaffolding tutors, never answer

engines (Bastani *et al.*, 2025). The positive mirror-image results are just as instructive. A six-week GPT-4 tutoring program improved learning by about 0.3 standard deviations in Nigerian public schools, and Harvard students learned more, in less time, from a well-designed AI tutor than from expert-led active-learning classes (De Simone *et al.*, 2025; Kestin *et al.*, 2025). Design determines the sign.

Second, build the infrastructure of intelligence: electricity, compute, and Viet Namese data. Data-center power should be planned as a strategic load in national energy planning. Announced capacity is ten times what is operating. Built out in full, it would draw roughly 12.3 terawatt-hours a year, about 4% of what the entire system generated in 2024 (Viet Nam Energy Magazine, 2025). Data-center demand must therefore be matched with clean generation and transmission under the revised Power Development Plan VIII.

Just as important is the "mine" that foreign models cannot dig: a national open Viet Namese-language corpus, from newspapers and administrative documents to the Han-Nom heritage archive, to feed domain models in law, health, education, and public administration, where local knowledge is a genuine moat. The sequencing favors data. Compute can be rented abroad while capacity builds. A national Viet Namese corpus cannot be substituted by generic foreign data. Viettel's and Zalo's Viet Namese models are first shoots. Singapore's SEA-LION family for Southeast Asian languages shows what a deliberate public effort looks like.

Third, adopt a latecomer strategy: stand on the shoulders of open source. Racing to train frontier models costs tens of billions of dollars a year, a two-superpower game. But the past year demonstrated another route: open-source models now deliver most frontier quality at orders-of-magnitude lower cost (openness still requires security vetting and license review). Viet Nam should fine-tune open models on Viet Namese data and concentrate on the application layer of agriculture, grassroots health, education, tourism, and public services, measuring success by how deeply AI penetrates millions of small and medium enterprises. No official statistic on firm-level AI adoption yet exists. Creating one, such as an annual AI module in the General Statistics Office's enterprise survey, would give the strategy its scoreboard. Firm-level evidence suggests the payoff to watch is growth through new products, not just cost-cutting (Babina *et al.*, 2024).

The AI-voucher mechanism in the AI Law is the right instrument if it comes with a real budget. It is a good strategy to adopt existing tools, adapt them to local language and institutions, and advance selectively where feasible. Viet Nam, with its Viettel-scale compute and 120-billion-parameter model, is better placed than most to attempt the third step without betting the treasury on it.

Fourth, make the institutions run for real, and pay for talent. Institution reforms are instrumental for the country's growth (World Bank, 2025). Regarding AI, the bodies exist: a central steering committee, a global expert network, published targets. The question is whether they have real authority, real money, and public scorecards. Assign each target to a lead institution, with annual milestones, budget authority, and consequences for missed implementation in general,

and specifically if Viet Nam does not enter the world's top 30 in AI readiness by 2030, or ASEAN's top 3 in AI research as Resolution 57 pledges. Attracting expertise home requires globally competitive packages: income, research autonomy, data access, and compute. The precedent is famous. In 1985, Taiwan recruited Morris Chang from the United States. Two years later he helped found TSMC, which today makes most of the world's advanced AI chips. One expert in the right seat, given a supportive system, can create a world-leading industry.

The government should also lead as first customer, using procurement to scale AI in health, education, and administrative services rather than waiting for the market to find them. Procurement needs guardrails so the first customer does not become the first casualty. Start with high-volume, low-stakes services—transcription, translation, document triage—and require Viet Namese-language evaluation benchmarks, aligned with the AI Law's risk tiers, before scale-up. Accountability can be equally concrete, with an annual public scorecard on the 2030 targets being reported to the National Assembly. Because adoption runs on trust, privacy and data-protection safeguards belong in the same sentence as capability.

None of this asks Viet Nam to do anything unprecedented. When South Korea decided in 1999 that the internet would be its escalator, the Cyber Korea 21 program paired broadband build-out with a mass campaign that taught internet basics to some ten million citizens—homemakers, soldiers, the elderly—so that use kept pace with wires (Government of the Republic of Korea, 1999). When Singapore concluded that frontier models would under-serve its region's languages, it funded AI Singapore's open-source SEA-LION model family rather than training frontier models itself (AI Singapore, 2023). When India wanted AI to reach a billion citizens in their own tongues, it built Bhashini, a public language-AI mission riding on the Aadhaar–UPI digital rails (MeitY, 2022; Crouzet *et al.*, 2023).

The most persuasive precedent, though, is Viet Nam's own. At independence in 1945, an estimated four in five Viet Namese could not read. The mass-education movement that followed (*phong trào bình dân học vụ*) almost wiped out illiteracy in a very short time period and had lasting, gender-equalizing effects on girls' schooling (Dang *et al.*, 2021). A national AI-skills campaign that wins the same breadth of social support could repeat that feat.

5. The coming decade

Return to the summer of 2025, when Viet Namese teenagers and a machine won gold at the same Olympiad. Viet Nam has never lacked individual talent. What it needs is a system that develops that talent at scale and converts it into durable institutions and human capital. The 2045 high-income goal cannot be reached by assembling other countries' hardware. It requires a productivity revolution. Our discussion suggests the AI dividend could make the difference between narrowly missing high income and arriving on schedule. The divergence machinery of concentrated models, compute, and standards will not wait. The window in which a capable

latecomer can still change roles, from renter of intelligence to part-owner, lies in the coming decade.

Viet Nam enters it with rapid public uptake, a top-ten readiness overachievement for its income, and unusually aligned institutions. Whether these advantages translate into income depends on choices that have little to do with algorithms: whether teachers are trained before students are tested, whether data centers get electricity and the Viet Namese language gets data, whether AI reaches millions of small firms and informal household businesses throughout the country or just stays in metropolitan offices, and whether the tools sharpen human judgment or replace it. Used judiciously, AI can help Viet Nam become a high-income country by mid-century. The technology is available. The action is the hard part.

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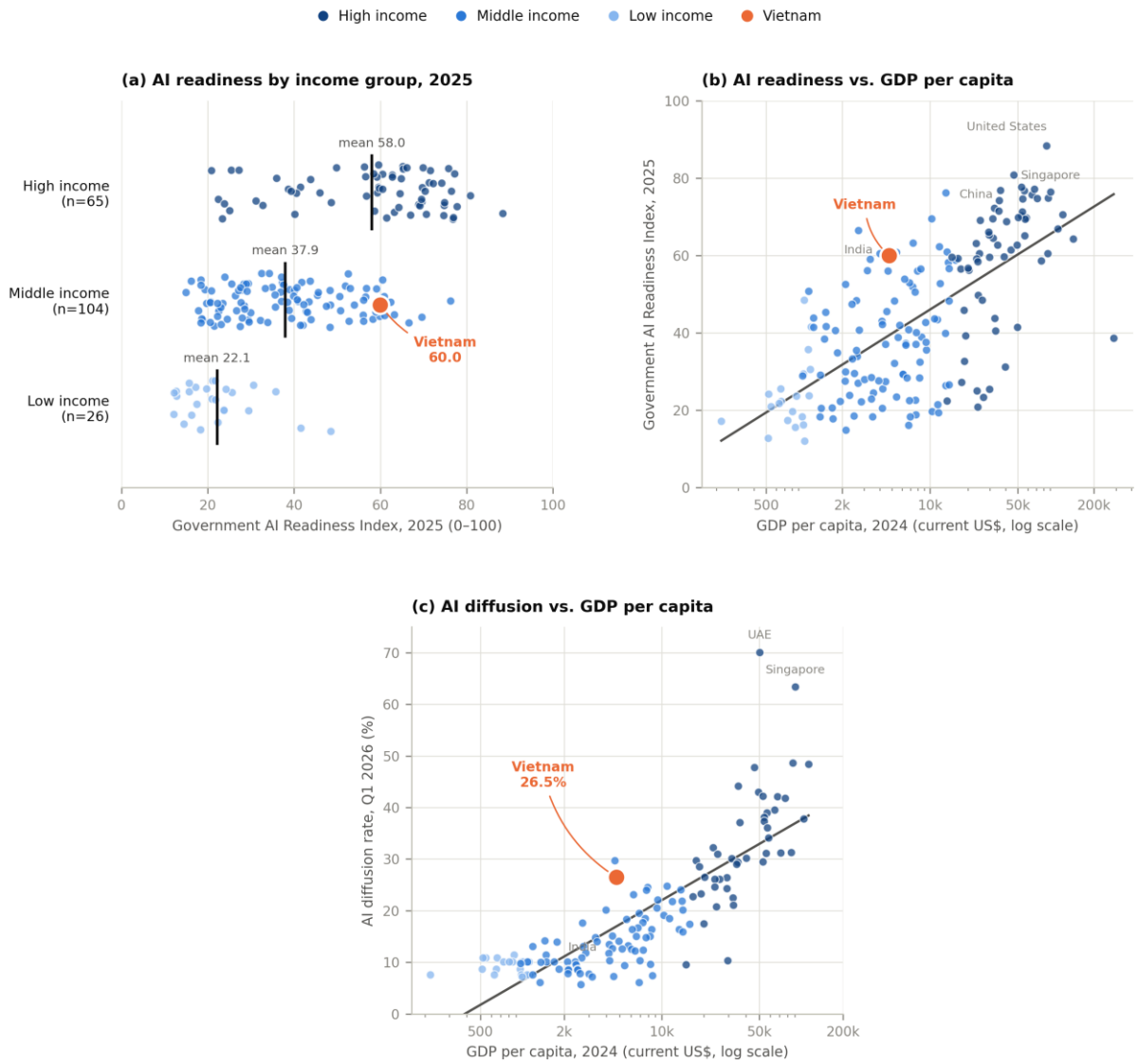
Figure 1. Viet Nam punches above its income weight in AI readiness and AI use.



Note: Panel (a): Government AI Readiness Index (GAIRI) scores, 2025, for 195 countries by World Bank income group (middle income combines lower- and upper-middle income); vertical bars mark group means; group sizes in parentheses. Panel (b): GAIRI scores against GDP per capita (2024, current US$, log scale) for the 180 countries with data; the line is the least-squares fit ($R^2 = 0.45$). Viet Nam scores 60.0 against a predicted 39.4, a gap of about 21 points, among the ten largest worldwide. Panel (c): the share of the working-age population using AI tools (AI diffusion rate, Q1 2026) against GDP per capita for 139 economies; Viet Nam's 26.5 percent is about 10 points above the level its income predicts, again among the ten largest positive gaps, and ranks 35th of 147 economies (eight countries lack matched GDP data and are excluded from panel (c)). *Sources:* author's calculations from Oxford Insights (2025), Microsoft AI Economy Institute (2026), and World Bank World Development Indicators.

Table 1. Three possible AI-adoption scenarios and the year Viet Nam could reach high-income status

Scenario	Per-capita growth	Year to reach high income	Calibration evidence (sources)
Baseline — no distinct AI dividend	5.0%	≈ 2047	Historical trajectory, 2011–2024
Low adoption — individual chatbot use; shallow firm integration	5.1% (+0.1 pp)	≈ 2046	Task-based macro calibrations: ≤0.7% TFP over a decade (Acemoglu, 2025); early null labor-market effects (Humlum and Vestergaard, 2026)
Medium adoption — broad diffusion to SMEs and public services	5.6% (+0.6 pp)	≈ 2044–45	Mobile-broadband analogue: a 10% adoption rise raised GDP by ~0.8% (Edquist *et al.*, 2018); OECD mid-range (Filippucci *et al.*, 2024); robots added ~0.36 pp (Graetz and Michaels, 2018)
Strong adoption — deep, economy-wide integration with skills, data, and organizational complements	6.2% (+1.2 pp)	≈ 2043	Broadband-era analogue: +0.9–1.5 pp per 10 pp penetration (Czernich *et al.*, 2011)

Notes: Author's calculations. Years to threshold = ln(14,376/4,970) / ln(1+g), from a 2025 base. Baseline g = 5.0 percent (approx. 2011–2024 average real per-capita growth); scenarios add +0.1/+0.6/+1.2 pp. The threshold (FY2027, US$14,376) is held constant in real terms. Growth rates are real, per capita. Sensitivity: with a 4.5% baseline the crossing dates shift about two years later; with 5.5%, about two years earlier. If the AI dividend begins only in 2030, the medium scenario still reaches the threshold around 2045 and the strong scenario around 2044. The medium and strong scenarios correspond to applying the cited coefficients to roughly a 10-percentage-point rise in AI adoption, about the distance from Viet Nam's current 26.5% diffusion rate to South Korea's 37% (Appendix Table A1); the low scenario takes the task-based aggregate ceiling directly. The scenarios transplant digital-adoption elasticities to AI and should be considered as illustration rather than forecasts. Other factors such as exchange rates, inflation methodology, population revisions, and future threshold changes are assumed fixed. Furthermore, every additional point of growth must be earned through complements: skills, data, electricity, and organizational change.

Box 1. Small AI in action: two Viet Namese examples

Illustration 1. Two hours a day, returned to teachers. Since late 2023, AI-training workshops for teachers in Viet Nam's northern highlands have cut lesson-preparation time by up to two hours a day, freeing time for the students who need it most and narrowing the resource gap between remote and urban classrooms (Tia Sang, 2024). The tool is generic. The gain is local. What was scarce was never knowledge. It was teachers' time.

Illustration 2. Radiology expertise, shipped to district hospitals. DrAid, the medical-imaging assistant built by Hanoi-based VinBrain, the startup NVIDIA later acquired, screens chest X-rays for tuberculosis and other conditions and has been deployed in more than 100 hospitals across Viet Nam, including district facilities that have never employed a full-time radiologist (NVIDIA, 2023).

Appendix A: Additional tables and figures

Table A1. AI diffusion rates by economy: share of the working-age population using AI tools (%)

Rank	Economy	H1 2025	H2 2025	Q1 2026	Δ
1	United Arab Emirates	59.4	64.0	70.1	+10.7
2	Singapore	58.6	60.9	63.4	+4.8
3	Norway	45.3	46.4	48.6	+3.3
4	Ireland	41.7	44.6	48.4	+6.7
5	France	40.9	44.0	47.8	+6.9
6	Spain	39.7	41.8	44.2	+4.5
7	New Zealand	37.6	40.5	43.0	+5.4
8	United Kingdom	36.4	38.9	42.2	+5.8
9	Netherlands	36.3	38.9	42.1	+5.8
10	Qatar	35.7	38.3	41.8	+6.1
11	Australia	34.5	36.9	39.5	+5.0
12	Belgium	33.5	36.0	39.0	+5.5
13	Israel	33.9	36.1	38.1	+4.2
14	Switzerland	32.4	34.8	37.8	+5.4
15	Canada	33.5	35.0	37.3	+3.8
16	South Korea	25.9	30.7	37.1	+11.2
17	Sweden	31.2	33.3	36.1	+4.9
18	Austria	29.1	31.4	34.1	+5.0
19	Hungary	27.9	29.8	32.2	+4.3
20	Taiwan	26.4	28.4	31.8	+5.4
21	United States	26.3	28.3	31.3	+5.0
22	Denmark	26.6	28.7	31.2	+4.6
23	Germany	26.5	28.6	31.1	+4.6
24	Poland	26.4	28.5	31.0	+4.6
25	Italy	25.8	27.8	30.2	+4.4
26	Czechia	26.0	27.8	30.1	+4.1
27	Bulgaria	25.4	27.3	29.7	+4.3
28	Jordan	25.4	27.0	29.7	+4.3
29	Finland	25.6	27.3	29.5	+3.9
30	Saudi Arabia	23.7	26.2	29.4	+5.7
31	Slovenia	24.6	26.5	29.0	+4.4
32	Costa Rica	25.1	26.5	28.5	+3.4
33	Lebanon	24.8	25.7	27.3	+2.5
34	Oman	22.6	24.2	26.5	+3.9
35	**Viet Nam**	**21.2**	**23.5**	**26.5**	**+5.3**
36	Portugal	22.4	24.2	26.4	+4.0
37	Slovakia	22.1	23.8	26.1	+4.0
38	Croatia	21.8	23.7	26.1	+4.3
39	Dominican Republic	22.0	22.7	24.8	+2.8
40	Uruguay	20.9	22.5	24.6	+3.7

Rank	Economy	H1 2025	H2 2025	Q1 2026	Δ
41	Colombia	20.4	22.0	24.5	+4.1
42	Lithuania	21.0	22.4	24.3	+3.3
43	Serbia	19.7	21.5	24.1	+4.4
44	Jamaica	22.2	22.1	24.0	+1.8
45	Panama	20.3	21.5	23.3	+3.0
46	South Africa	19.3	21.1	23.1	+3.8
47	Chile	19.6	20.8	22.7	+3.1
48	Japan	16.7	19.1	22.5	+5.8
49	Bosnia And Herzegovina	18.2	19.5	22.1	+3.9
50	Argentina	17.8	19.6	21.9	+4.1
51	Malaysia	18.3	19.7	21.8	+3.5
52	Kuwait	17.7	19.1	21.1	+3.4
53	Greece	17.7	19.1	20.8	+3.1
54	Georgia	17.3	18.2	20.5	+3.2
55	Philippines	17.1	18.3	20.1	+3.0
56	Mexico	16.7	17.8	20.1	+3.4
57	Ecuador	17.0	17.7	19.5	+2.5
58	Brazil	15.6	17.1	19.1	+3.5
59	Moldova	16.6	17.0	18.5	+1.9
60	Albania	15.8	16.5	18.5	+2.7
61	El Salvador	14.6	16.2	18.3	+3.7
62	Azerbaijan	14.2	15.5	17.7	+3.5
63	India	14.2	15.7	17.6	+3.4
64	Romania	15.3	16.2	17.5	+2.2
65	Türkiye	13.4	14.6	17.4	+4.0
66	Mongolia	12.6	14.3	16.7	+4.1
67	China	15.4	16.3	16.4	+1.0
68	Guatemala	13.7	14.8	16.4	+2.7
69	Peru	13.4	14.7	16.4	+3.0
70	Kazakhstan	12.7	13.7	15.9	+3.2
71	Namibia	13.0	13.8	15.1	+2.1
72	Libya	12.7	13.7	15.0	+2.3
73	Gabon	12.3	13.4	15.0	+2.7
74	Botswana	12.8	13.7	14.8	+2.0
75	Egypt	12.5	13.4	14.8	+2.3
76	Nepal	12.3	13.0	14.2	+1.9
77	Indonesia	11.7	12.7	14.1	+2.4
78	Honduras	12.4	13.1	14.0	+1.6
79	Senegal	12.4	12.9	13.9	+1.5
80	Tunisia	12.3	12.7	13.5	+1.2
81	Algeria	11.3	12.0	13.2	+1.9
82	Zambia	11.7	12.3	13.1	+1.4
83	Cote D'Ivoire	10.8	11.7	13.1	+2.3
84	Bolivia	10.9	11.6	12.7	+1.8

Rank	Economy	H1 2025	H2 2025	Q1 2026	Δ
85	Iran	9.6	10.7	12.6	+3.0
86	Iraq	10.3	11.2	12.5	+2.2
87	Thailand	9.1	10.7	12.4	+3.3
88	Paraguay	10.1	11.0	12.2	+2.1
89	Nicaragua	10.0	10.7	11.8	+1.8
90	Morocco	10.5	10.9	11.7	+1.2
91	Gambia	10.6	10.9	11.4	+0.8
92	Pakistan	9.7	10.3	11.4	+1.7
93	Angola	8.9	9.7	10.9	+2.0
94	Madagascar	8.9	9.7	10.9	+2.0
95	Malawi	8.9	9.7	10.9	+2.0
96	Mozambique	8.9	9.7	10.9	+2.0
97	French Guiana	8.3	9.0	10.3	+2.0
98	Guyana	8.3	9.0	10.3	+2.0
99	Suriname	8.3	9.0	10.3	+2.0
100	Venezuela	8.3	9.0	10.3	+2.0
101	Benin	8.7	9.3	10.1	+1.4
102	Burkina Faso	8.7	9.3	10.1	+1.4
103	Ghana	8.7	9.3	10.1	+1.4
104	Guinea	8.7	9.3	10.1	+1.4
105	Guinea-Bissau	8.7	9.3	10.1	+1.4
106	Liberia	8.7	9.3	10.1	+1.4
107	Mali	8.7	9.3	10.1	+1.4
108	Mauritania	8.7	9.3	10.1	+1.4
109	Niger	8.7	9.3	10.1	+1.4
110	Nigeria	8.7	9.3	10.1	+1.4
111	Sierra Leone	8.7	9.3	10.1	+1.4
112	Togo	8.7	9.3	10.1	+1.4
113	Myanmar	8.4	9.1	10.0	+1.6
114	Lesotho	8.8	9.1	9.8	+1.0
115	Belarus	7.6	8.4	9.6	+2.0
116	Kyrgyzstan	7.6	8.2	9.5	+1.9
117	Russia	7.6	8.0	9.5	+1.9
118	Ukraine	9.1	9.0	9.4	+0.3
119	Kenya	7.8	8.1	8.7	+0.9
120	Cameroon	7.0	7.8	8.7	+1.7
121	Central African Republic	7.0	7.8	8.7	+1.7
122	Chad	7.0	7.8	8.7	+1.7
123	Congo	7.0	7.8	8.7	+1.7
124	Congo (DRC)	7.0	7.8	8.7	+1.7
125	Haiti	7.1	7.6	8.5	+1.4
126	Zimbabwe	6.9	7.6	8.5	+1.6
127	Bangladesh	6.5	7.1	7.8	+1.3
128	Laos	6.0	6.7	7.8	+1.8

Rank	Economy	H1 2025	H2 2025	Q1 2026	Δ
129	Papua New Guinea	7.2	7.3	7.7	+0.5
130	Burundi	6.4	6.8	7.6	+1.2
131	Eritrea	6.4	6.8	7.6	+1.2
132	Ethiopia	6.4	6.8	7.6	+1.2
133	Somalia	6.4	6.8	7.6	+1.2
134	South Sudan	6.4	6.8	7.6	+1.2
135	Sudan	6.4	6.8	7.6	+1.2
136	Tanzania	6.4	6.8	7.6	+1.2
137	Uganda	6.4	6.8	7.6	+1.2
138	Syria	6.7	7.1	7.5	+0.8
139	Armenia	6.2	6.6	7.4	+1.2
140	Sri Lanka	6.2	6.6	7.3	+1.1
141	Uzbekistan	5.7	6.3	7.2	+1.5
142	Rwanda	6.0	6.3	7.2	+1.2
143	Cuba	5.7	6.1	6.7	+1.0
144	Afghanistan	5.1	5.6	6.1	+1.0
145	Tajikistan	5.1	5.6	6.1	+1.0
146	Turkmenistan	5.1	5.6	6.1	+1.0
147	Cambodia	4.6	5.1	5.7	+1.1

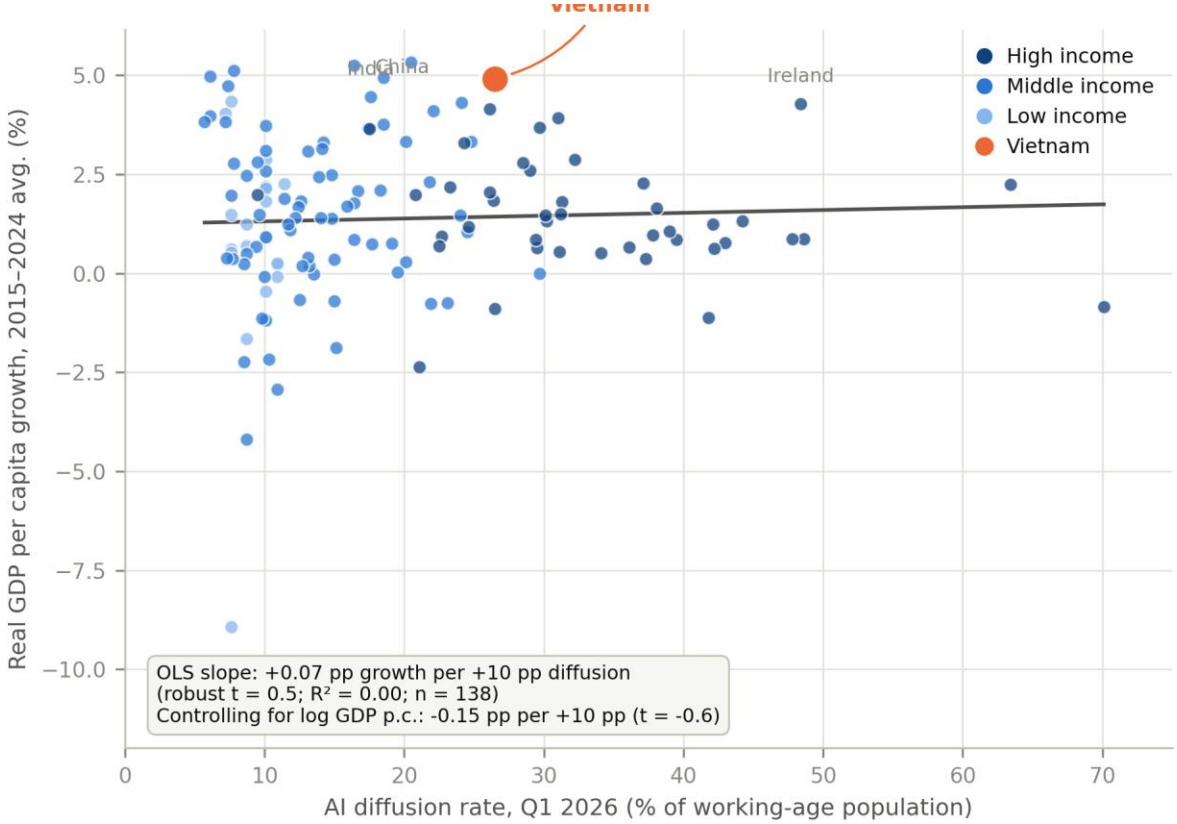
Notes: AI diffusion rate = estimated share of the working-age (15–64) population using AI tools, from telemetry-based estimates; 147 economies, ranked by Q1 2026. Δ is the change from H1 2025 to Q1 2026 in percentage points. Viet Nam in bold. *Source:* Microsoft AI Economy Institute (2026), AI Diffusion Report data release (github.com/microsoft/ai-diffusion-report).

Table A2. Inside the readiness score: GAIRI 2025 dimension scores for Viet Nam, Singapore, and the United States

Dimension	Viet Nam	Singapore	United States	Viet Nam − US
Governance	88.0	78.3	82.5	+5.5
Public Sector Adoption	73.2	92.5	92.9	-19.7
AI Infrastructure	57.4	74.5	91.8	-34.4
Policy Capacity	53.5	85.0	92.5	-39.0
Development & Diffusion	47.0	64.2	88.2	-41.2
Resilience	43.3	76.4	78.3	-35.0
Overall index (published)	**60.0**	**76.4**	**88.4**	**−28.4**

Notes: Dimension scores (0–100) from the published rankings table of the Government AI Readiness Index 2025 report; overall scores are Oxford Insights' published totals (dimension weights follow their methodology). The table quantifies the readiness–capacity paradox discussed in Section 2: Viet Nam's Governance score exceeds both global leaders', and Public Sector Adoption is within 20 points of them, while the capacity dimensions, Development & Diffusion and Resilience, are 35–41 points below the United States. *Source:* Oxford Insights (2025).

Figure A1. Earlier growth and subsequent AI diffusion: a descriptive placebo



Notes: Real GDP per capita growth, 2015–2024 average (log-difference of constant-price GDP per capita over nine years), against the AI diffusion rate (Q1 2026) for 138 economies (Guyana, with average growth above 15 percent, is excluded). Measured over this structural horizon, the association is statistically indistinguishable from zero (+0.07 percentage points per +10 points of diffusion, robust t = 0.5, R^2 = 0.00; −0.15, t = −0.6, controlling for log GDP per capita). This contrasts with the significantly negative slope obtained with 2023–24 growth (about −0.8 per +10 points; see footnote 4). The sign of the cross-sectional association flips with the growth window chosen, underscoring that country snapshots cannot identify AI's growth effect in either direction. *Sources:* author's calculations from Microsoft AI Economy Institute (2026) and World Bank World Development Indicators.