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AI Investment Potential Index 2025

Unlocking Equitable Opportunities for Global AI Growth

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AI Investment Potential Index 2025

Unlocking Equitable Opportunities for Global AI Growth

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Abstract

The AI Investment Potential Index (AIIPI) 2025 represents a significant advancement in the systematic evaluation of global readiness and attractiveness for artificial intelligence (AI) investments. Building upon the foundational framework established in 2024, AIIPI 2025 integrates cutting-edge methodologies, advanced machine learning models, and comprehensive datasets to provide a nuanced and globally comparable assessment of AI ecosystems.

This multidimensional framework analyzes key dimensions, including economic environment, governance quality, infrastructure resilience, human capital development, and data governance, with an enhanced emphasis on statistical capacity and data privacy. By addressing regional disparities and identifying strategic opportunities, AIIPI 2025 highlights critical factors driving AI readiness and investment potential worldwide.

This paper explores the index's theoretical underpinnings, methodological advancements, and empirical findings. It provides actionable insights and evidence-based recommendations for policymakers, investors, and researchers, aiming to harness AI's transformative potential. By fostering strategic interventions and addressing global inequities, AIIPI 2025 serves as an essential instrument for advancing inclusive economic growth, fostering innovation, and shaping a sustainable and equitable global AI ecosystem.

Keywords
AI Investment Potential Index, sustainable development, artificial intelligence, investment decisions, equitable growth, AI readiness

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Résumé

L'Indice du Potentiel d'Investissement dans l'Intelligence Artificielle (AIIPI) 2025 représente une avancée significative dans l'évaluation systématique de la préparation et de l'attractivité des nations pour les investissements en intelligence artificielle (IA). S'appuyant sur le cadre fondamental établi en 2024, l'AIIPI 2025 intègre des méthodologies de pointe, des modèles avancés d'apprentissage automatique et des ensembles de données exhaustifs afin de fournir une évaluation nuancée et comparable à l'échelle mondiale des écosystèmes IA.

Ce cadre multidimensionnel analyse des dimensions clés, notamment l'environnement économique, la qualité de la gouvernance, la résilience des infrastructures, le développement du capital humain et la gouvernance des données, avec un accent renforcé sur la capacité statistique et la protection des données. En réduisant les disparités régionales et en identifiant des opportunités stratégiques, l'AIIPI 2025 met en lumière les facteurs critiques qui stimulent la préparation et le potentiel d'investissement en IA à travers le monde.

Cet article explore les fondements théoriques, les avancées méthodologiques et les résultats empiriques de l'AIIPI 2025. Il fournit des recommandations concrètes et basées sur des éléments probants à l'intention des décideurs politiques, des investisseurs et des chercheurs, dans le but de tirer parti du potentiel transformateur de l'IA. En promouvant des interventions stratégiques et en réduisant les inégalités mondiales, l'AIIPI 2025 se positionne comme un outil essentiel pour favoriser une croissance économique inclusive, encourager l'innovation et façonner un écosystème IA global durable et équitable.

Mots-clés
Indice du potentiel d'investissement dans l'IA, développement durable, intelligence artificielle, décisions d'investissement, croissance équitable, préparation à l'IA.

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Introduction

Artificial Intelligence (AI) has emerged as a transformative force, reshaping industries, redefining economic paradigms, and reimagining societal structures. As a cornerstone of the Fourth Industrial Revolution, AI drives innovation, fuels economic growth, and offers solutions to complex global challenges. Its pervasive influence spans key sectors such as healthcare, finance, education, manufacturing, and governance (Bin Rashid & Kausik, 2024). However, the ability of nations to fully harness AI's transformative potential depends on their preparedness to invest in and scale AI technologies. This preparedness encompasses robust infrastructure, advanced governance frameworks, skilled human capital, and a commitment to ethical data governance (International Monetary Fund, 2024; Oxford Insights, 2024). The global race to lead in AI development has underscored the urgent need for systematic tools to assess AI readiness and investment attractiveness.

The AI Investment Potential Index (AIIPI) was conceptualized as a comprehensive benchmarking tool to evaluate the multidimensional factors that shape a nation's AI investment potential (Addo *et al.*, 2024). By integrating key indicators across economic, governance, infrastructural, human capital, and data governance dimensions, the AIIPI provides a holistic assessment of national AI ecosystems. It empowers stakeholders—including policymakers, investors, and researchers—to identify strengths, address weaknesses, and prioritize strategic interventions. As the global AI landscape evolves, tools like the AIIPI have become indispensable for ensuring that nations can effectively align their AI ambitions with broader economic and societal goals.

Building upon its 2024 iteration (Addo et al., 2024), AIIPI 2025 incorporates significant advancements to enhance its accuracy, relevance, and applicability. The framework benefits from a more extensive and diverse dataset, improved methodologies, and the application of advanced machine learning models. These innovations enable a nuanced understanding of the drivers of AI investment potential and offer a robust mechanism to evaluate national readiness. Enhancements in AIIPI 2025 include a greater emphasis on data governance and privacy, the incorporation of statistical performance metrics, and the use of dynamic weighting schemes to reflect the evolving priorities of global AI ecosystems. These advancements ensure that the index remains aligned with the rapid pace of technological innovation and the growing emphasis on ethical and inclusive AI development.

One of the defining features of AIIPI 2025 is its focus on regional disparities in AI readiness. The global distribution of AI investment potential reveals stark contrasts between high-performing and low-performing nations. High-performing regions, characterized by advanced digital infrastructure, dynamic innovation ecosystems, and robust governance frameworks, consistently lead in attracting AI-related investments. Conversely, low-performing regions face significant barriers, including deficits in national AI strategies, inadequate infrastructure, weak governance, and insufficient human capital. These disparities highlight the critical need for targeted interventions to foster equitable growth and enable all nations to participate in the AI-driven global economy.

This policy-oriented research paper examines the theoretical foundations, methodological advancements, and practical implications of the AIIPI 2025. It aims to provide actionable insights to guide national and international efforts in optimizing AI investment potential. The paper begins with an overview of the conceptual framework underpinning the AIIPI, including the rationale for selecting its core dimensions and indicators. This is followed by a detailed discussion of the data collection and preparation processes, emphasizing the use of advanced statistical techniques to ensure the reliability and comparability of the index.

Subsequent sections of the paper delve into the construction of the AIIPI and the analytical techniques employed to derive its results. These include machine learning algorithms for feature selection and weighting, as well as comprehensive data normalization and transformation procedures. The findings are then presented through a global and regional lens, highlighting disparities, challenges, and opportunities across different stages of AI readiness. A dedicated section examines the

lessons learned from low- and high-performing nations, offering insights into best practices and strategic priorities for enhancing AI ecosystems.

To address the identified gaps and challenges, the paper concludes with a set of policy recommendations aimed at fostering inclusive growth and strengthening global AI investment potential. These recommendations emphasize the importance of developing national AI strategies, investing in digital infrastructure, enhancing governance frameworks, and cultivating human capital. They also underscore the need for international collaboration to ensure that the benefits of AI are equitably distributed.

The AIIPI 2025 serves as both a diagnostic and strategic tool for navigating the complexities of the global AI landscape. By offering a comprehensive framework for assessing AI investment potential, it empowers stakeholders to make informed decisions that align with their economic and societal objectives. As AI continues to transform the global economy, the AIIPI provides a roadmap for fostering innovation, addressing disparities, and driving sustainable and inclusive growth. Through this policy-oriented analysis, the paper contributes to the broader discourse on the role of AI in shaping the future of global development.

Structure of Paper

To provide a structured and comprehensive exploration of the AI Investment Potential Index (AIIPI) 2025, this paper is organized into two main parts:

Part 1: Methodology and Construction of the Index (Sections 1 to 3) establishes the conceptual and methodological framework underpinning the AIIPI. **Section 1** introduces the theoretical foundations, explaining the rationale behind the selection of key indicators across dimensions such as economic environment, governance quality, infrastructure, human capital, and data governance. **Section 2** outlines the data collection and processing methodologies, emphasizing the stringent techniques employed to ensure the reliability, consistency, and comparability of the data. **Section 3** details the construction of the index, with a particular focus on the application of advanced machine learning models for feature selection, indicator weighting, and aggregation, ensuring a robust and scientifically grounded approach.

Part 2: Results, Analysis, and Recommendations (Sections 4 to 6) transitions from methodology to findings and actionable insights. **Section 4** presents a global and regional analysis of AI investment potential, identifying significant trends, disparities, and opportunities across varying levels of readiness. **Section 5** examines the experiences of high-performing and low-performing countries, offering key lessons and strategies to support the development of robust AI ecosystems. Finally, **Section 6** delivers targeted policy recommendations, highlighting the critical role of national AI strategies, infrastructure investments, governance frameworks, and human capital development. Together, these sections offer a cohesive narrative that not only evaluates the current global AI landscape but also proposes a strategic path forward to foster inclusive growth and innovation in the AI era.

Part 1: Methodology and Construction of the Index

1. Theoretical Foundations and Indicator Selection

Economic Environment

The economic dimension assesses factors crucial to AI scalability and innovation. Population size reflects domestic market opportunities and the scope for scaling AI technologies. Log GDP per capita (PPP) serves as a measure of economic prosperity, reflecting a country's ability to adopt advanced technologies. The Economic Complexity Index (ECI) and Complexity Outlook Index (COI) highlight the diversity and sophistication of economic activities, both critical for fostering robust AI ecosystems as they rely on advanced infrastructures, highly skilled talent, and complex interactions between various economic sectors Finally, access to electricity underscores the foundational infrastructure required for implementing AI-driven solutions effectively.

Governance

Governance indicators evaluate the institutional and political environment supporting AI development. Voice and Accountability measure democratic freedoms, fostering openness to innovation. Government Effectiveness highlights a country's public services' quality and its capacity to implement policies that enable AI ecosystem growth. Political Stability reflects the predictability of the investment environment, reducing risks for long-term AI projects. Together, these indicators emphasize the role of transparent, efficient governance in attracting AI investments and talent.

Digital and Physical Infrastructure

Infrastructure plays a central role in facilitating AI adoption and scaling. The GSMA Mobile Connectivity Index captures the accessibility of digital technologies for citizens, ensuring equitable access to AI applications. The Telecommunication Infrastructure Index developed by the United Nations evaluates the quality and maturity of networks, which are essential for AI deployment across industries such as healthcare, finance, and logistics. These indicators demonstrate the importance of robust infrastructure in fostering AI-driven innovation and societal benefits.

Data Governance and Security

Strong data governance frameworks are essential for sustaining trust in AI ecosystems. National AI strategies signal governmental commitment to fostering AI innovation, while data privacy and protection measures ensure compliance with legal and ethical standards. These factors are increasingly critical as public concerns about data misuse grow. Countries with robust data governance attract investments by offering secure and reliable environments for AI development.

Statistical Performance

The World Bank's Statistical Performance Index (SPI) provides a detailed evaluation of national statistical capacity through its five pillars: Data Use, Data Services, Data Products, Data Sources, and Data Infrastructure. A strong statistical system underpins effective AI deployment. By addressing gaps in statistical capacity, SPI contributes to a country's readiness to implement and scale AI technologies.

The indicators' description and sources are summarized in Table 1 and further detailed in Table 2 (See Annex 2).

Table 1 : Summary AIIPI 2025 Indicators

DIMENSION	INDICATOR	THEORETICAL RELEVANCE	SOURCE
Economic Environment	Population	Market size and scale potential	World Bank
	Log GDP per Capita (PPP)	Economic prosperity and financing capacity	World Bank
	Access to Electricity	Enabler for digital infrastructure	World Bank
	Economic Complexity Index	Economic sophistication and production diversity	Harvards' Atlas of Economic Complexity
	Complexity Outlook Index	Potential for economic diversification	Harvards' Atlas of Economic Complexity
Governance	Voice and Accountability	Democratic institutions fostering innovation	World Bank
	Government Effectiveness	Institutional quality and policy implementation	World Bank
	Political Stability	Stability of investment climate	World Bank
Infrastructure	Mobile Connectivity Index	Digital accessibility and readiness	GSMA
	Telecommunication Index	Digital infrastructure maturity	United Nations
Human Capital	Human Capital Index	Availability of skilled workforce	United Nations
	Number of Research Articles	Innovation capacity and knowledge generation	Emerging Technology Observatory of the Center for Security and Emerging Technology at Georgetown University.
Data Governance	AI Strategy	Government commitment to AI	Stanford AI Index Report
	Data Privacy Score	Trust and compliance in AI systems	CNIL (French Data Protection Authority)
Statistical Performance	Data Use	Decision-making capabilities	World Bank
	Data Services	Data accessibility and analytical quality	World Bank
	Data Products	Statistical diversity and relevance	World Bank
	Data Sources	Variety of data generation methods	World Bank
	Data Infrastructure	Efficiency of statistical systems	World Bank

The AIIPI 2025 offers a holistic framework for assessing the multidimensional factors influencing a country's AI investment potential. By integrating economic, governance, infrastructure, human capital, and data governance dimensions, it provides a comprehensive and actionable tool for stakeholders. The continued refinement of AIIPI ensures its relevance in navigating the complexities of global AI ecosystems, equipping nations to maximize the benefits of AI-driven innovation.

2. Data and Processing

Data Sources

Data for AIIPI 2025 was sourced from leading global organizations, including the World Bank, GSMA, and the United Nations, ensuring comprehensive and globally comparable measures across economic, social, and technological dimensions. This multi-source approach captures critical indicators such as Population, Log GDP per Capita, Mobile Connectivity Index, and Data Privacy Score. We also consider the number of incoming AI investment counts per country, which includes the number of venture capital rounds, other private equity rounds, and merger/acquisition (M&A) transactions with target companies in each country. This indicator is used as an explained variable in the modeling phase in the quest to identify importance indicators and the establishment of associated weight allocation for composite index. Table 2 of Annex 2 provides details on data sources. By leveraging reliable and trusted datasets, AIIPI 2025 evaluates the economic, infrastructural, and governance factors underpinning AI investment potential, aligning with the theoretical frameworks detailed earlier. The primary focus was on data from 2023, supplemented with historical records from 2020 and 2022 to address missing values and maintain temporal consistency.

Exploratory data analysis, including descriptive statistics and assessment of missing values, was conducted to refine the dataset. Variables with extensive missing data and inaccessible publicly were excluded. Highly correlated variables were either excluded or consolidated to reduce redundancy. For instance, the H-index was excluded as a relevant indicator for assessing countries' research performance due to its strong correlation with the number of articles published within a country.

Preparing the Data for Analysis

A series of exploratory techniques were applied to prepare the dataset for analysis. Descriptive statistics were used to summarize key characteristics of the data, highlighting central tendencies, variability, and identifying potential anomalies or inconsistencies. To understand relationships between indicators, correlation analysis was conducted, producing heatmaps that provided insights into interdependencies and redundancies within the dataset (See Figure 1). Missing values from 2023 were addressed through backward substitution, drawing on data from earlier years (2022 or 2020) to ensure completeness and temporal alignment.

Data Transformation and Scaling

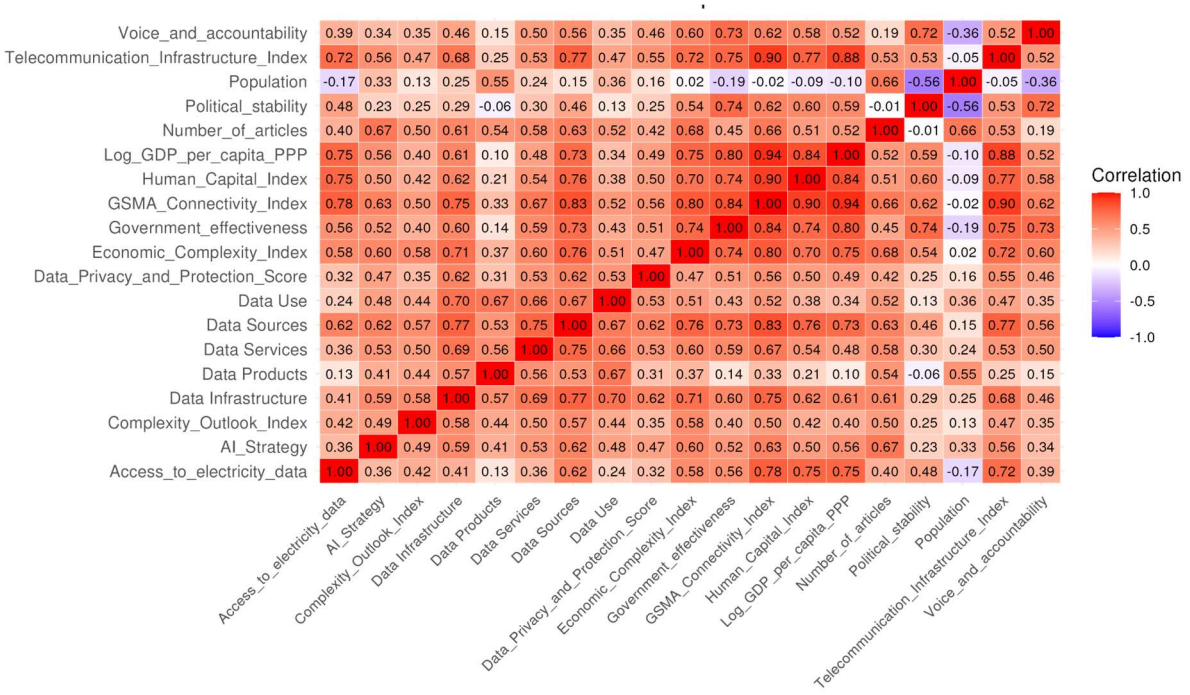
The data underwent multiple transformation and scaling procedures to standardize indicators and improve analytical consistency. Min-Max scaling was employed to normalize numerical variables to a range of [0, 100], ensuring comparability across indicators. This scaling was performed independently for each year to mitigate temporal differences. Adjustments were also applied to specific variables such as the Telecommunication Infrastructure Index and Human Capital Index by scaling them to improve interpretability, typically multiplying values by 100 for clearer comparisons.

Addressing Skewness in Data

Skewness in the dataset was systematically addressed to enhance the symmetry of distributions and the reliability of subsequent analysis. Logarithmic transformations were applied to variables with significant right skewness, compressing large values while maintaining their relative relationships. For

moderately skewed variables, square root transformations were used as a less radical method to improve symmetry. These adjustments were made prior to scaling to ensure that normalization processes yielded consistent and interpretable results. By addressing skewness comprehensively, the transformed data adhered more closely to the assumptions of the analytical techniques applied, strengthening the robustness of the outcomes.

Figure 1: Correlation Heatmap for Scaled Data



Correlation heatmaps revealed detailed interrelationships between variables, offering valuable insights into their interconnected roles. A notable strong positive correlation emerged between GDP per capita and indicators like the Telecommunication Infrastructure Index and the Human Capital Index, highlighting how economic prosperity is closely linked to advanced digital infrastructure and a skilled labor force. In contrast, population size showed a weaker or even negative correlation with these variables, emphasizing a divergence between scaling potential and developmental maturity. These findings underline the complexity of aligning economic, infrastructural, and human capital factors in fostering AI readiness across diverse contexts.

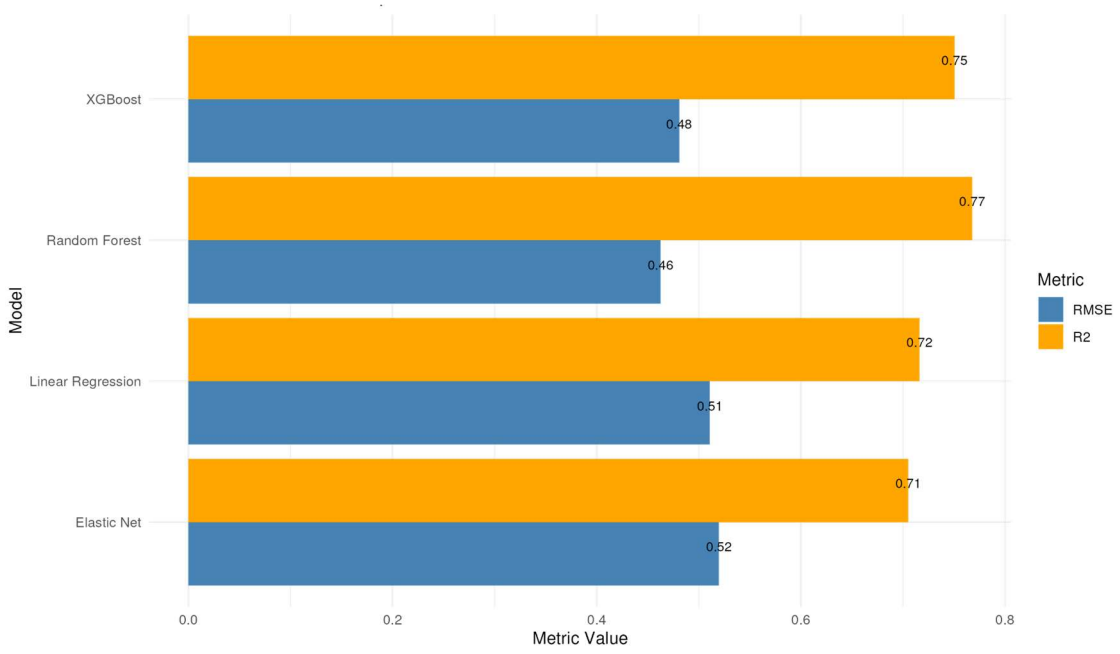
3. Methodology and Results

The methodology for constructing AIIPI 2025 entailed a comprehensive and systematic approach to feature selection and model evaluation, leveraging cutting-edge machine learning algorithms to ensure precision and robustness. Advanced models, including Random Forest, XGBoost, Elastic Net, and Linear Regression, were employed to identify and prioritize indicators critical to AI investment potential. By deriving feature importance scores from these models, the most impactful variables were identified, creating a focused and effective analytical framework to construct the composite index, which we refer to as the AIIPI 2025.

To enhance the reliability of findings, all models underwent training with a rigorous 10-fold cross-validation process. The Random Forest algorithm excelled in capturing intricate, non-linear

interactions among variables, while XGBoost effectively utilized Bayesian optimization to fine-tune hyperparameters, ensuring optimal performance. Elastic Net Regression provided a solution to multicollinearity issues through the combination of L1 and L2 penalties, and Linear Regression served as a baseline model for benchmarking. This multi-model strategy enabled a nuanced understanding of how various factors contribute to AI investment potential. Figure 2 presents the performance metrics for each model on the test dataset.

Figure 2: Model Performance Comparison



Performance metrics such as the coefficient of determination (R^2) and Root Mean Squared Error (RMSE) were employed to evaluate the effectiveness of each model.

- Root Mean Square Error (RMSE): Measures the average magnitude of prediction errors, defined as:

$$RMSE = \sqrt{(1 / n) \Sigma (\hat{y}_i - y_i)^2}$$

- Coefficient of Determination (R^2): Indicates the proportion of variance explained by the model:

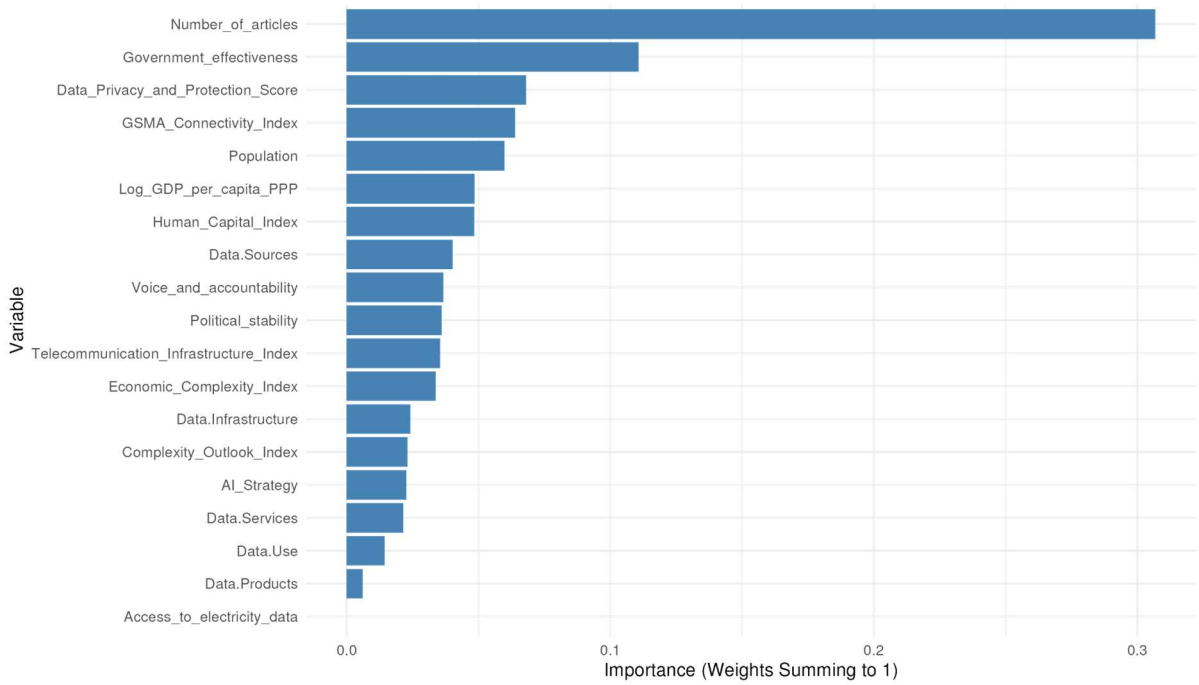
$$R^2 = 1 - (\Sigma (y_i - \hat{y}_i)^2 / \Sigma (y_i - \bar{y})^2)$$

Among the approaches tested, Random Forest emerged as the top performer, demonstrating both high accuracy and low error rates. The model structure and variable importance weight is presented in Annex 3. Its robustness in managing non-linear relationships and resistance to overfitting made it particularly effective for analyzing the diverse and multifaceted dimensions of AI investment potential, offering a reliable lens through which to assess complex data.

The analysis uncovered several influential predictors. The Number of Research Articles stood out as a critical factor, highlighting the essential role of innovation and active knowledge production in fostering AI ecosystems. Government Effectiveness was another pivotal predictor, emphasizing the importance of strong institutional frameworks and the capability to implement effective policies. Indicators such as the Data Privacy and Protection Score underscored the necessity of trust and

regulatory compliance in building sustainable AI systems, while the GSMA Connectivity Index revealed the foundational role of robust digital infrastructure in scaling AI technologies. Additionally, Population size emerged as a significant contributor, representing the scalability and market potential essential for AI investments. Figure 3 summarizes the variable importance weights with the Random Forest Model.

Figure 3: Variable Importance Weights - Random Forest



While indicators such as the Complexity Outlook Index and AI Strategy were less dominant in their individual contributions, they provided valuable complementary insights into the dynamics of national AI ecosystems. These variables offered a deeper understanding of long-term growth potential and strategic readiness, rounding out the analytical picture. The findings from the Random Forest model offer actionable recommendations for policymakers. Priority areas include enhancing governance structures, bolstering research and innovation ecosystems, developing comprehensive data protection frameworks, and investing in digital and mobile connectivity infrastructure. Addressing these areas holistically can position nations as attractive destinations for AI investments and secure their competitive edge in the global AI landscape.

The final AIIPI scores were calculated through a weighted aggregation of normalized indicators, with feature importance scores from the best-performing models determining the weights. This process resulted in a robust classification of countries into distinct investment potential stages (See Map 1, Figure 4). These stages[1] ranged from Stage 1, indicating a need for significant improvements, to Stage 4, representing advanced AI ecosystems with exceptional investment potential (See Figure 16 & Figure 17 Annex 3). This classification not only highlights global and regional disparities but also provides a strategic roadmap for policymakers. By bridging identified gaps and targeting specific developmental areas, countries can foster inclusive, AI-driven growth and enhance their global standing in the rapidly evolving AI domain.

[1] The stages are defined as follows: Stage 1 (AIIPI < 26), Stage 2 (AIIPI between 26 and 50), Stage 3 (AIIPI between 51 and 75), and Stage 4 (AIIPI >= 76).

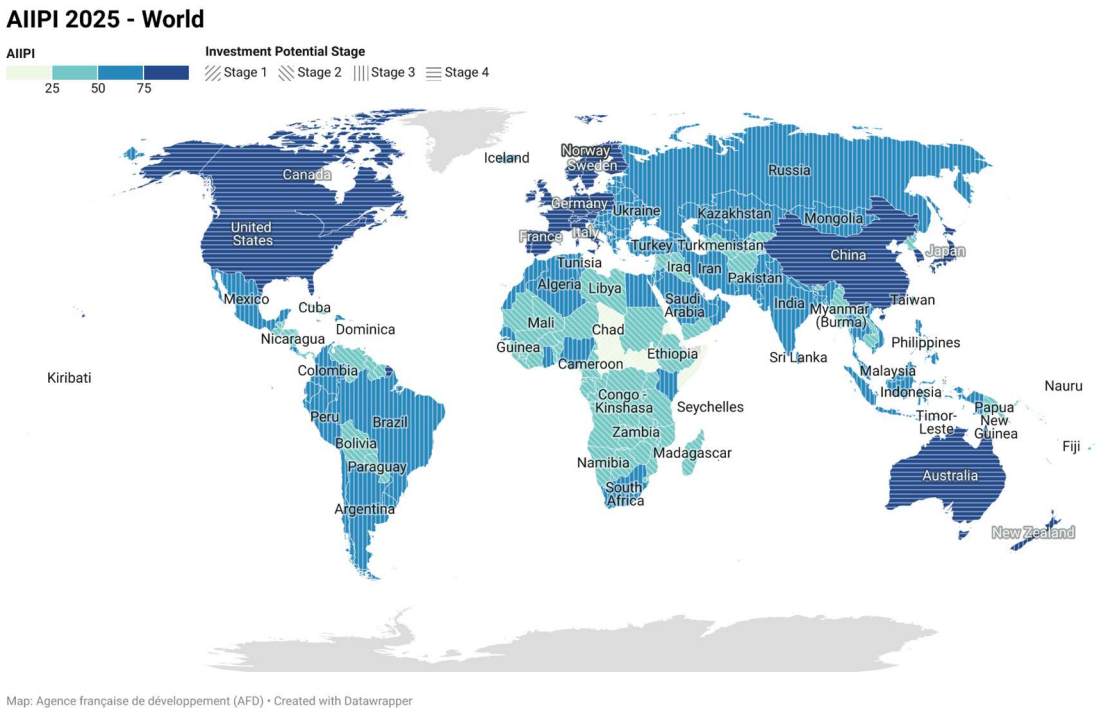
Part 2: Results, Analysis, and Recommendations

4. Regional and Global Analysis of AI Investment Potential.

Global AIIPI Mapping

The global AIIPI map provides a comprehensive analysis of the varying stages of AI investment potential across nations (See Map 1). The AIIPI 2025 Scores[2] are publicly accessible on the French Public Open data platform (https://www.data.gouv.fr/). Countries classified in Stage 4 exhibit high levels of AI attractiveness, characterized by robust governance frameworks, advanced digital infrastructure, and dynamic innovation ecosystems. In contrast, nations in Stages 2 and 3 face considerable challenges, necessitating targeted policy interventions to address deficiencies in infrastructure and to enhance human capital development.

Map 1: AI Investment Potential Index 2025 in the World



The global distribution of AI Investment Potential, as illustrated by the AIIPI 2025 map, reveals notable regional disparities that highlight the uneven development of artificial intelligence ecosystems worldwide. Countries classified within the highest investment potential stage (Stage 4), such as the United States, France, Germany, Japan, Singapore, and Australia, exhibit robust digital infrastructures, advanced AI strategies, and significant human capital development. These nations have successfully

[2] The AIIPI 2025 data is available here: https://www.data.gouv.fr/fr/datasets/index-du-potentiel-dinvestissement-dans-lia/

leveraged their technological leadership and governance frameworks to foster innovation and sustain their competitive edge in AI-driven industries.

In contrast, countries positioned in Stage 3, including Morocco, India, Brazil, South Africa, Kenya, Indonesia, and Serbia, demonstrate substantial progress in AI development but encounter challenges that hinder their transition to the highest tier. These challenges often stem from gaps in governance, regional disparities in infrastructure, and uneven access to skilled labor. Nevertheless, these nations remain pivotal actors in the global AI landscape due to their rapidly growing economies, substantial investments in AI, and large domestic markets.

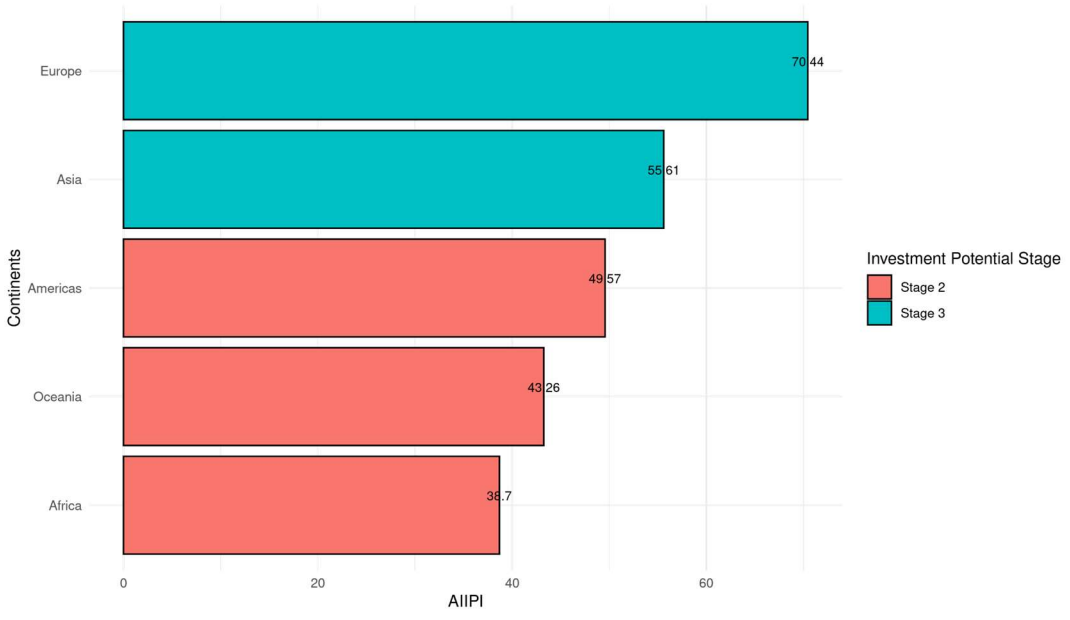
The analysis further identifies regions in Stage 2, such as parts of Southeast Asia, Latin America, and Africa, as areas of emerging potential. While these countries exhibit nascent AI ecosystems, they face constraints in digital access, policy implementation, and research capacity. Their progress, however, underscores opportunities for targeted interventions, including fostering public-private partnerships, enhancing education systems, and strengthening governance mechanisms to accelerate growth in AI capabilities.

At the other end of the spectrum, countries categorized within Stage 1, such as Djibouti, Equatorial Guinea, South Sudan, Central African and small island nations, face significant barriers to AI development. Limited infrastructure, insufficient policy frameworks, and inadequate human capital constrain their ability to engage meaningfully with global AI advancements. This underscores the urgent need for international collaboration, capacity-building initiatives, and strategic investments to bridge the digital divide and enable these regions to participate in and benefit from the AI-driven global economy.

This distribution highlights the stark contrast between the Global North and Global South, emphasizing the urgent need for tailored strategies to address disparities in AI readiness and investment potential. Bridging this divide requires a concerted effort from governments, international organizations, and private stakeholders to create an inclusive global AI ecosystem that fosters innovation and economic growth for all.

The representation of the AIIPI 2025 for countries over the continents are presented in Annex 1 as Geographical Maps 2 to Maps 6.

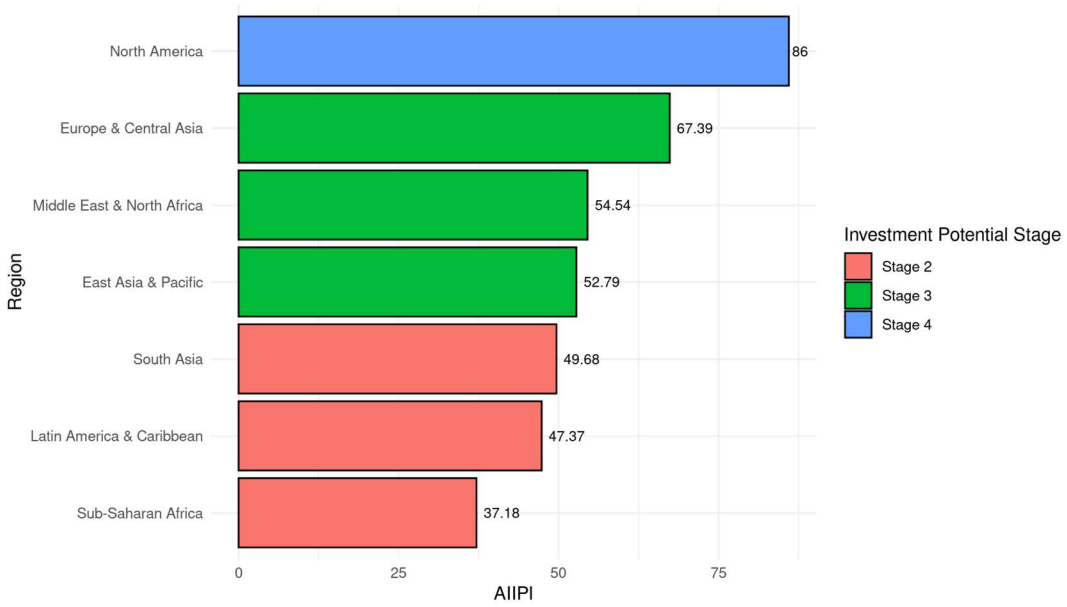
Figure 4: Investment Potential Stages by Continent



Regional Insights on AI Investment Potential

The analysis of the AI Investment Potential Index (AIIPI) across global regions reveals significant variations in AI attractiveness and investment potential (See Figure 5). Key insights derived from the regional results are as follows:

Figure 5: Investment Potential Stages by Region



North America emerges as the leading region, achieving an AIIPI score of 86.0 and securing its position in Stage 4 of investment potential. This performance reflects the region's advanced digital capabilities, robust infrastructure, and substantial investments in AI research and innovation.

Europe and Central Asia ranks second with a score of 67.39, indicating strong governance, high institutional quality, and an attractive environment for human capital development to support AI deployment.

Middle East & North Africa and **East Asia & Pacific** demonstrate moderate AI investment potential with scores of 54.54 and 52.79, respectively. These regions reflect emerging opportunities driven by ongoing investments in infrastructure development and digital transformation.

South Asia (49.68), **Latin America & Caribbean** (47.37) and **Sub-Saharan Africa** (37.18) are positioned at the lower end of the AIIPI scale, highlighting persistent challenges in infrastructure, governance, and innovation capacity. Notably, Sub-Saharan Africa's AIIPI score remains below 40, underscoring the ongoing urgent need for foundational improvements, and international collaboration to support capacity-building initiatives and increase potential in AI investment.

Figure 6: Investment Potential Stages across income by Region

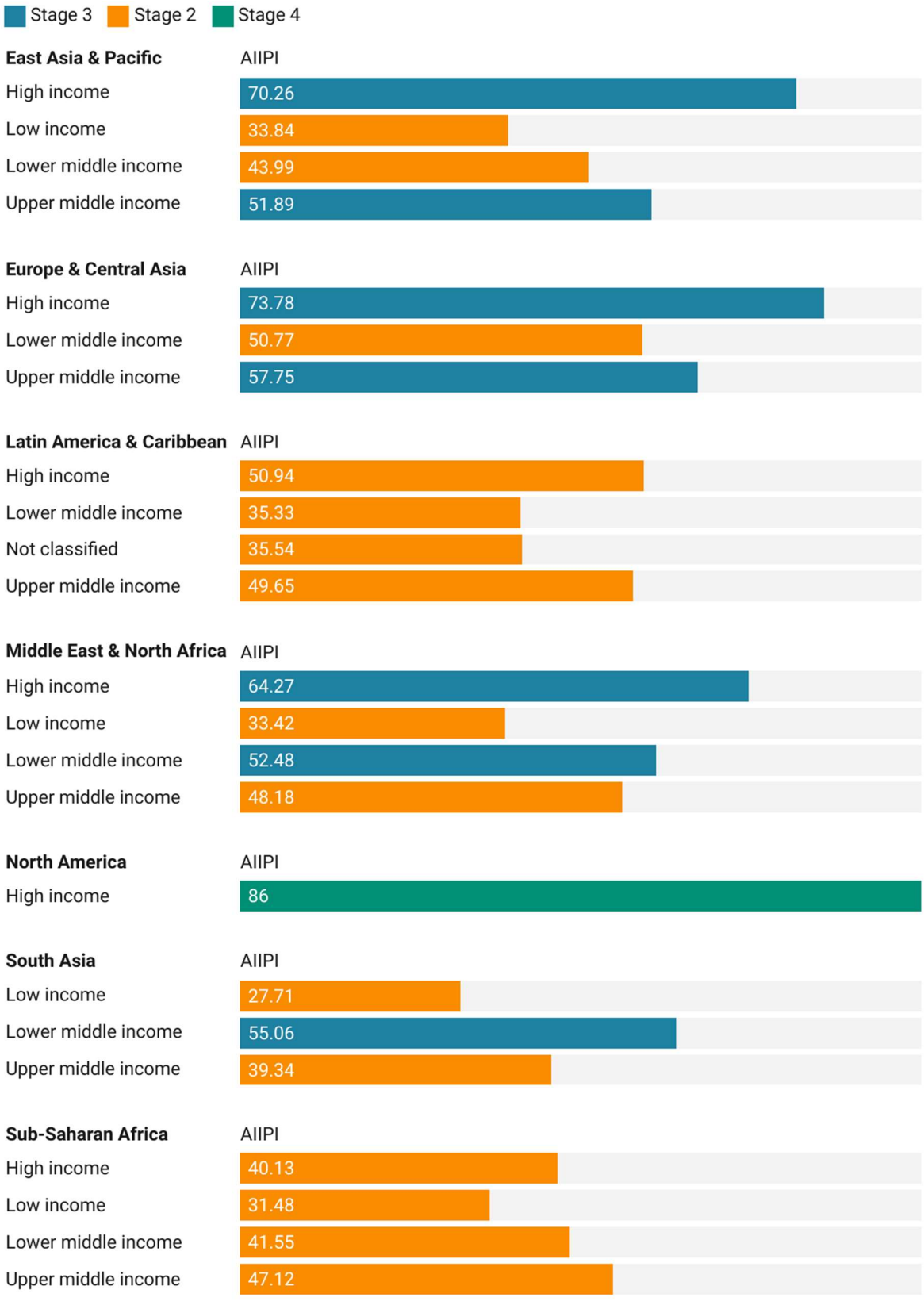


Chart: Agence française de développement (AFD) • Created with Datawrapper

The AI Investment Potential Index (AIIPI) reveals pronounced disparities in AI readiness and adoption across regions and income groups[3] (see Figure 6), offering valuable insights into global digital inequities. High-income regions, such as North America, exhibit strong AI potential, with the region achieving an AIIPI score of 86, the highest globally, firmly positioned in Stage 4. This performance reflects advanced digital ecosystems, a highly skilled workforce, and robust institutional frameworks that foster AI innovation. Similarly, high-income countries in Europe & Central Asia, as well as the Middle East & North Africa, like the United Arab Emirates or Saudi Arabia, consistently achieve AIIPI scores exceeding 60, underscoring their strategic investments in digital infrastructure and technology.

In stark contrast, low-income countries across all regions remain confined to Stage 2 of AI investment potential, with AIIPI scores as low as 27.7 in South Asia and 31.5 in Sub-Saharan Africa. These nations face significant challenges, including underdeveloped digital infrastructure, limited access to quality education and AI training, and weak governance structures. Lower-middle-income countries demonstrate some progress, often straddling the boundary between Stage 2 and early Stage 3, with scores ranging from 35 to 55 in regions such as Latin America & the Caribbean, South Asia, and Sub-Saharan Africa. Upper-middle-income countries, including those in East Asia & Pacific and Europe & Central Asia, exhibit relatively stronger performance, often reaching Stage 3 with AIIPI scores varying between 50 and 60. While these scores highlight emerging capabilities, they also reflect substantial gaps in scaling AI-driven solutions.

The variation across AIIPI stages underscores the critical need for targeted interventions to bridge the global digital divide. Prioritizing investments in digital infrastructure, implementing tailored education programs to cultivate an AI-ready workforce, and establishing inclusive governance frameworks are essential steps in enabling low-performing regions to unlock their potential. Without such measures, low-income nations risk deeper marginalization in the rapidly evolving global AI economy.

Furthermore, fostering regional collaborations and strengthening public-private partnerships will be instrumental in promoting equitable AI development. A concerted global effort to address these disparities is not only imperative for fostering innovation and economic growth but also vital for ensuring the transformative benefits of AI are accessible to all. By advancing these initiatives, the international community can lay the foundation for a more inclusive, equitable, and sustainable future powered by AI.

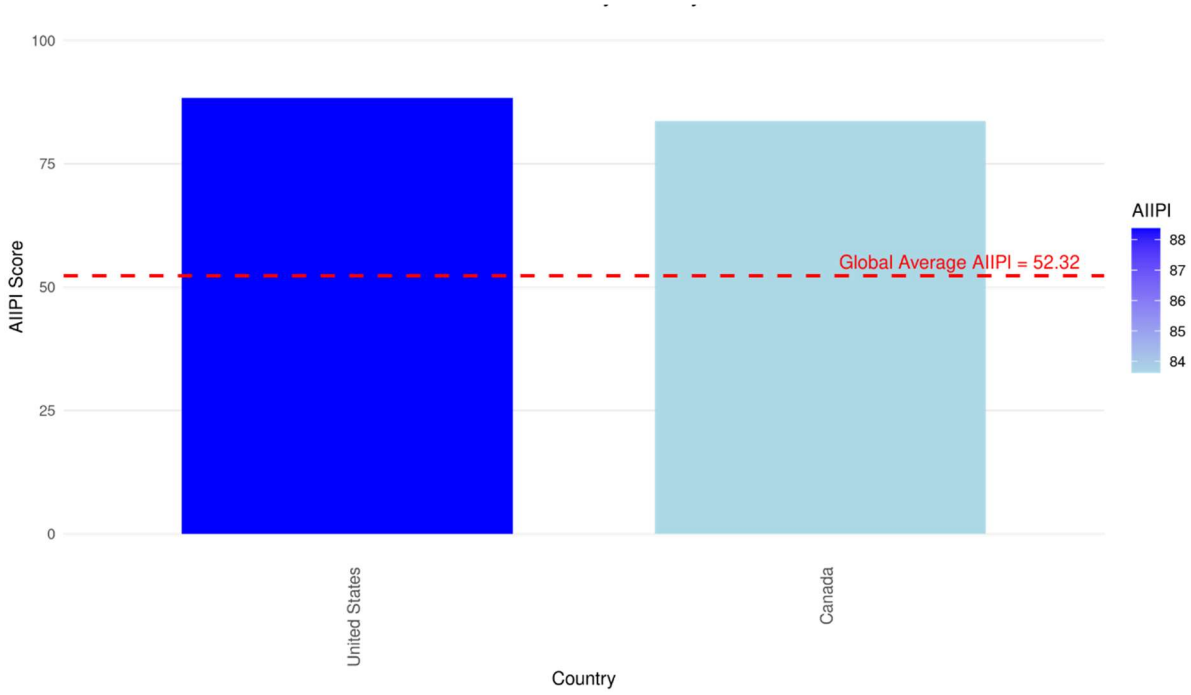
[3] The World Bank classifies countries into four income groups: low, lower-middle, upper-middle, and high income. See World Bank income groups, 2023 for information.

Comprehensive Regional Analysis of AIIPI Scores

North America

In Figure 7, we observe the AI Investment Potential Index by Country in North America:

Figure 7: AI Investment Potential Index by Country in North America

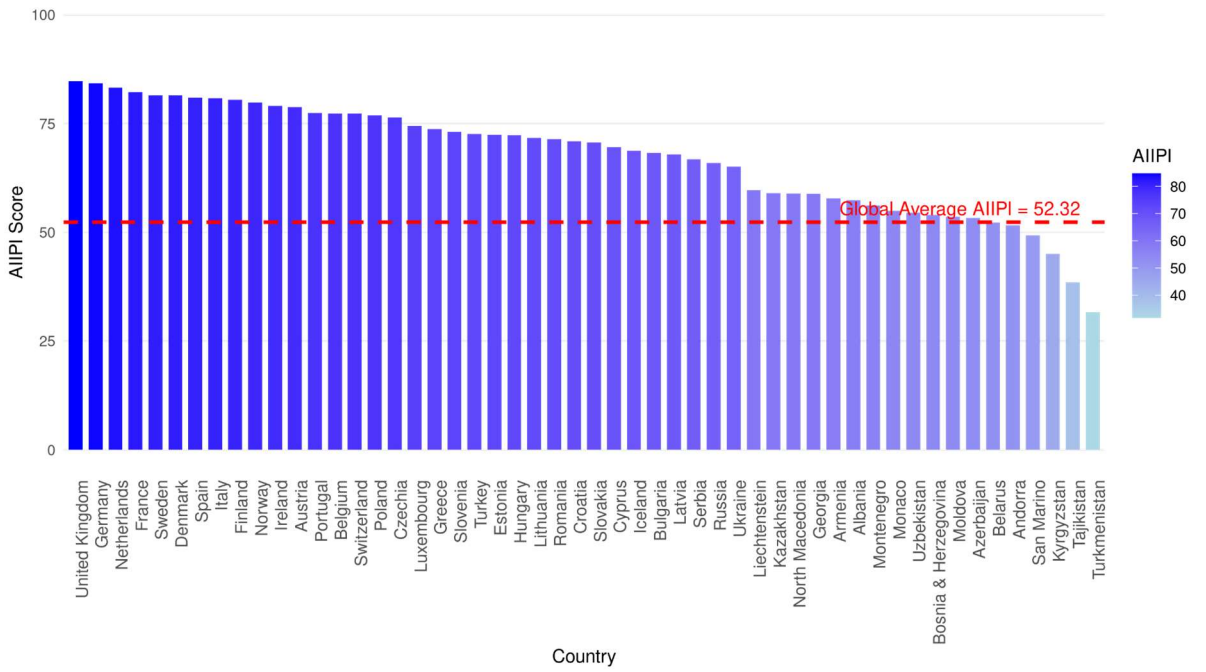


- **United States**: As the global leader in AIIPI, the United States scores significantly above the global average. This reflects its unparalleled innovation capacity, well-established infrastructure, and strong data governance frameworks.
- **Canada**: Canada, while also exceeding the global average, ranks lower than the United States. This suggests opportunities for further strengthening its innovation ecosystem and governance frameworks to fully capitalize on its AI potential.

Europe and Central Asia

Europe and Central Asia exhibit strong AI attractiveness, with several nations leading globally (See Figure 8):

Figure 8: AI Investment Potential Index by Country in Europe & Central Asia

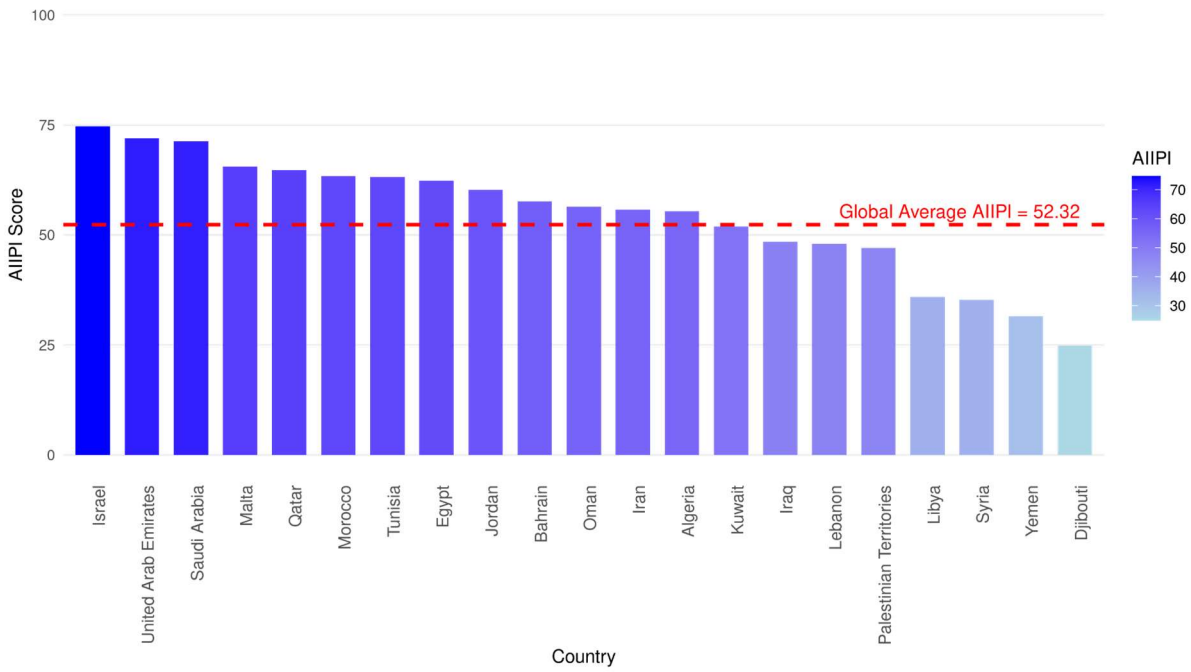


- **Top Performers**: United Kingdom, Germany, Netherlands and France rank among the highest globally, reflecting well-established governance, innovation systems, and digital infrastructure.
- **Mid-Level Performers**: Ukraine and Kazakhstan demonstrate progress but require additional investment opportunities to compete with top-performing nations.
- **Low Performers**: Kyrgyzstan, Tajikistan and Turkmenistan rank at the bottom of the region, facing challenges in digital accessibility, governance, and institutional capacity.

Middle East and North Africa (MENA)

The MENA region presents a mixed performance (See Figure 9), reflecting its diverse economic and political contexts:

Figure 9: AI Investment Potential Index by Country in Middle East & North Africa

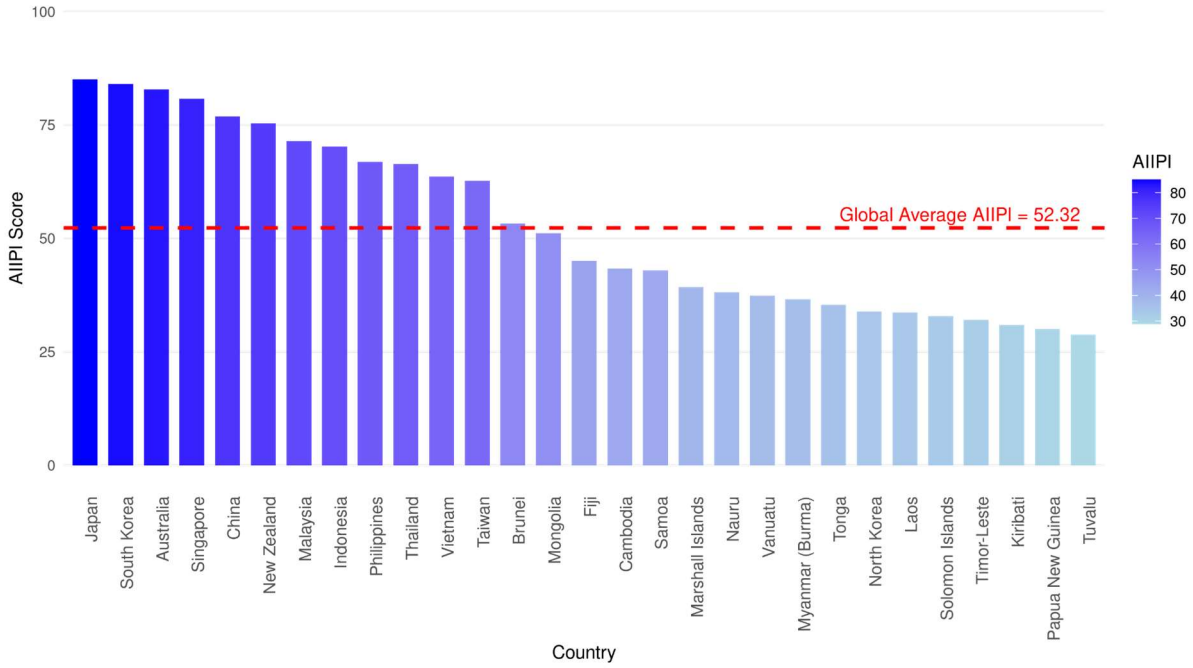


- **Top Performers**: Israel and the United Arab Emirates dominate the rankings, showcasing advanced AI attractiveness due to robust innovation ecosystems, strong governance, and proactive AI strategies.
- **Mid-Level Performers**: Oman and Algeria score near the global average, demonstrating ongoing efforts in digital transformation and institutional development.
- **Low Performers**: Libya, Syria, Yemen and Djibouti fall well below the global average, illustrating how political instability and infrastructure deficiencies hinder AI investment potential.

East Asia and Pacific

East Asia and the Pacific showcase diverse levels of AI attractiveness (See Figure 10):

Figure 10: AI Investment Potential Index by Country in East Asia & Pacific

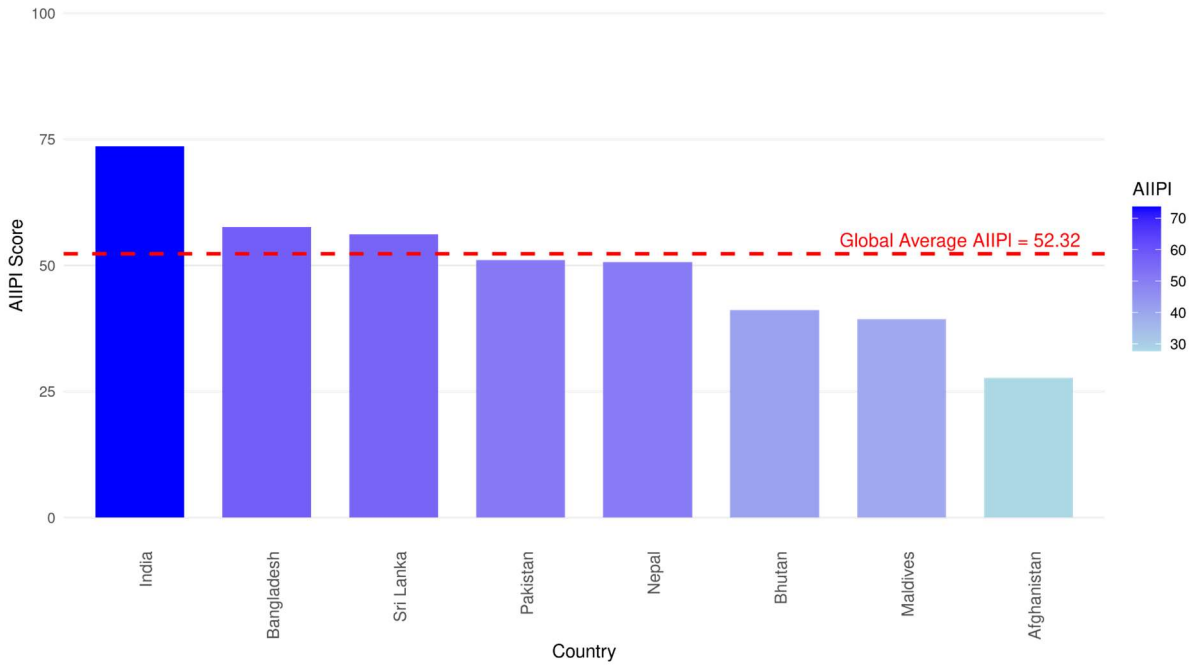


- **Top Performers**: Japan, South Korea, Australia, Singapore, and China dominate the rankings, with scores far exceeding the global average. Their success is driven by advanced digital ecosystems, significant investments in R&D, and robust policy frameworks.
- **Mid-Level Performers**: Cambodia and Fiji demonstrate substantial potential, reflecting ongoing progress in infrastructure and institutional reforms.
- **Low Performers**: Pacific Island nations such as the Solomon Islands and Papua New Guinea lag significantly, underscoring the need for foundational investments in digital infrastructure and governance.

South Asia

The South Asia (See Figure 11) region shows varying levels of AI attractiveness:

Figure 11: AI Investment Potential Index by Country in South Asia

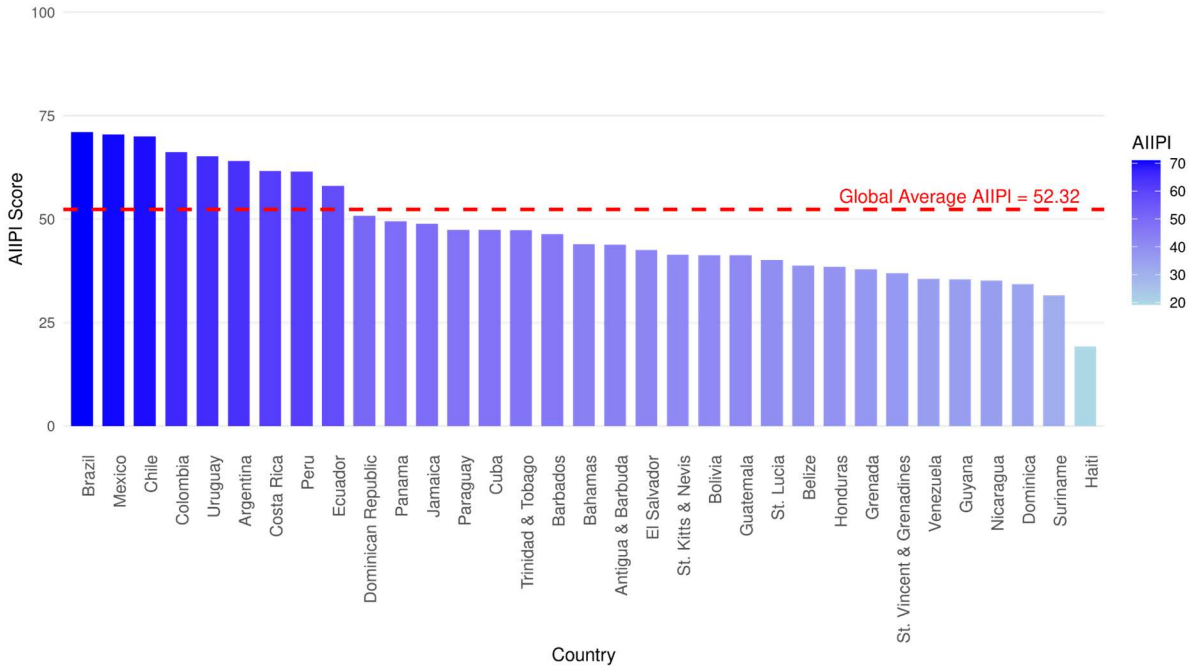


- **Top Performer**: India leads the region with a score far above its peers. This reflects its strong research output, significant governance improvements, and a rapidly expanding digital economy.
- **Mid-Level Performers**: Sri Lanka,Bangladesh and Pakistan are around the global average, showcasing moderate advancements in infrastructure and human capital readiness.
- **Low Performers**: Maldives and Afghanistan face significant challenges, with low scores indicating gaps in governance, innovation capacity, and digital infrastructure.

Latin America and the Caribbean

The AIIPI scores for Latin America and the Caribbean (See Figure 12) reveal notable variations in AI investment potential across the region:

Figure 12: AI Investment Potential Index by Country in Latin America & The Caribbean



- **Top Performers:** Brazil, Mexico, Chile, and Colombia emerge among regional leaders, with scores significantly exceeding the global average of 52.32. These countries benefit from robust governance structures, well-developed digital infrastructure, and dynamic innovation ecosystems, which collectively enhance their AI attractiveness.

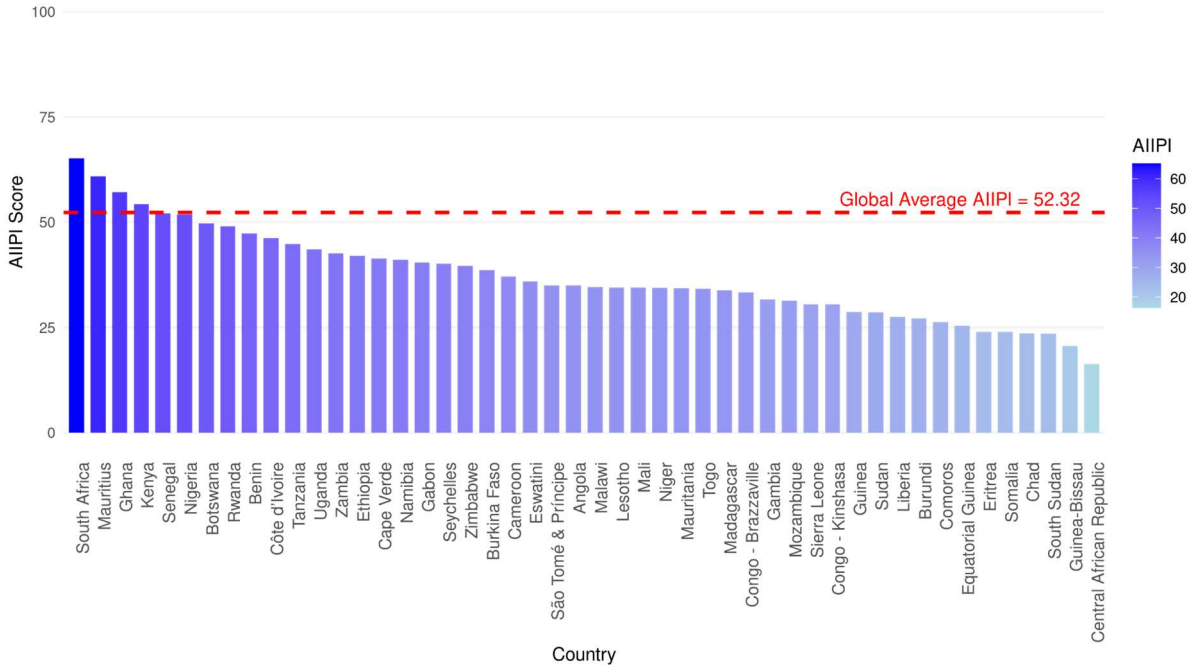
- **Mid-Level Performers:** Guatemala and Bolivia demonstrate moderate AI investment potential. While progress in digital accessibility is evident, these nations face challenges in areas such as research output, institutional frameworks, and the scalability of innovation.

- **Low Performers:** Haiti, Dominica, and Suriname rank at the lower end of the spectrum, highlighting critical gaps in foundational investments. These countries require substantial improvements in infrastructure, governance, and human capital development to strengthen their AI readiness and competitiveness on the global stage.

Sub-Saharan Africa

Figure 13 shows that Sub-Saharan Africa faces considerable hurdles in achieving AI attractiveness:

Figure 13: AI Investment Potential Index by Country in Sub-Saharan Africa



- **Top Performers**: South Africa, Mauritius, Ghana, Kenya, and Senegal lead the region, scoring above the global average. Their relatively strong governance frameworks and emerging innovation ecosystems provide a foundation for future growth. Indeed, in recent years, South Africa has made significant strides, as exemplified by the release of the first draft of its AI strategy in 2024 (International Trade Administration, 2024). Mauritius, known as a pioneer in AI, released their AI strategy as soon as 2018 (UNESCO, 2018).

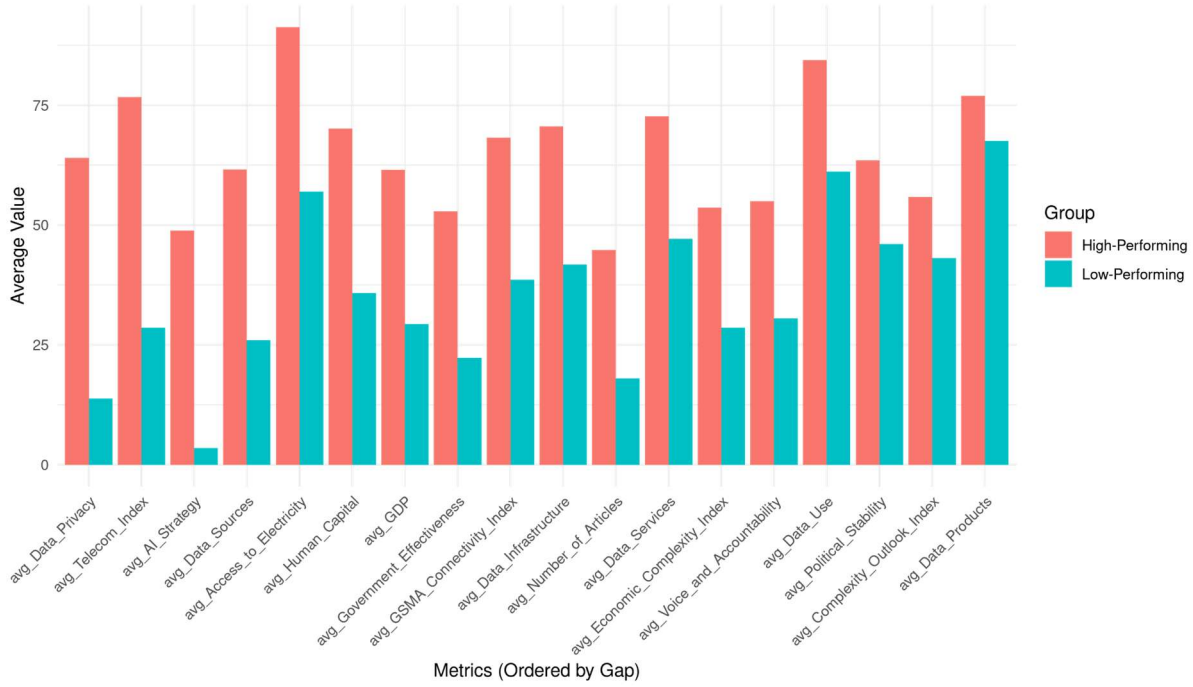
- **Mid-Level Performers**: Cameroon, Togo and Angola show promise but require targeted investments in infrastructure and human capital to realize their full potential.

- **Low Performers**: South Sudan, Somalia, and Central African Republic remain at the bottom of the rankings, highlighting severe deficiencies in governance, infrastructure, and human capital development.

5. Understanding the Drivers of AI Investment Potential: Lessons from Low- and High-Performing Countries

The global landscape of artificial intelligence (AI) investment potential reveals stark disparities between countries that have successfully established themselves as leaders in AI and those that struggle to gain traction. These disparities, captured in the Artificial Intelligence Investment Potential Index (AIIPI), are rooted in a combination of structural, technological, and institutional factors that determine a nation's ability to attract AI investment, foster innovation, and leverage AI for economic growth. *Low-performing nations*, which occupy the bottom 15% of the AIIPI rankings, face systemic challenges that inhibit their capacity to compete in an increasingly digital global economy (See Figure 14). In contrast, *high-performing nations* classified within Stages 3 and 4, exemplify strategic approaches that have positioned them as global hubs for AI innovation. This analysis delves into the factors that drive AI investment potential, contrasting the barriers faced by low-performing nations with the enabling strategies adopted by high-performing countries to extract valuable lessons for fostering inclusive growth.

Figure 14: Comparison of Metrics - Low vs High-Performing Countries



One of the most significant challenges impeding AI investment potential in low-performing nations is the absence of comprehensive national AI strategies. These strategies serve as essential frameworks for guiding investments, aligning initiatives, and coordinating efforts across sectors to maximize the impact of AI. Without a clearly articulated vision, low-performing nations often lack the coherence and direction needed to attract and sustain AI investments. This strategic void hinders their ability to prioritize high-impact sectors, such as healthcare, education, and agriculture, where AI could address pressing socio-economic challenges. Furthermore, the lack of a unified framework exacerbates inefficiencies, leaving these nations vulnerable to fragmented and short-term efforts that fail to create lasting value.

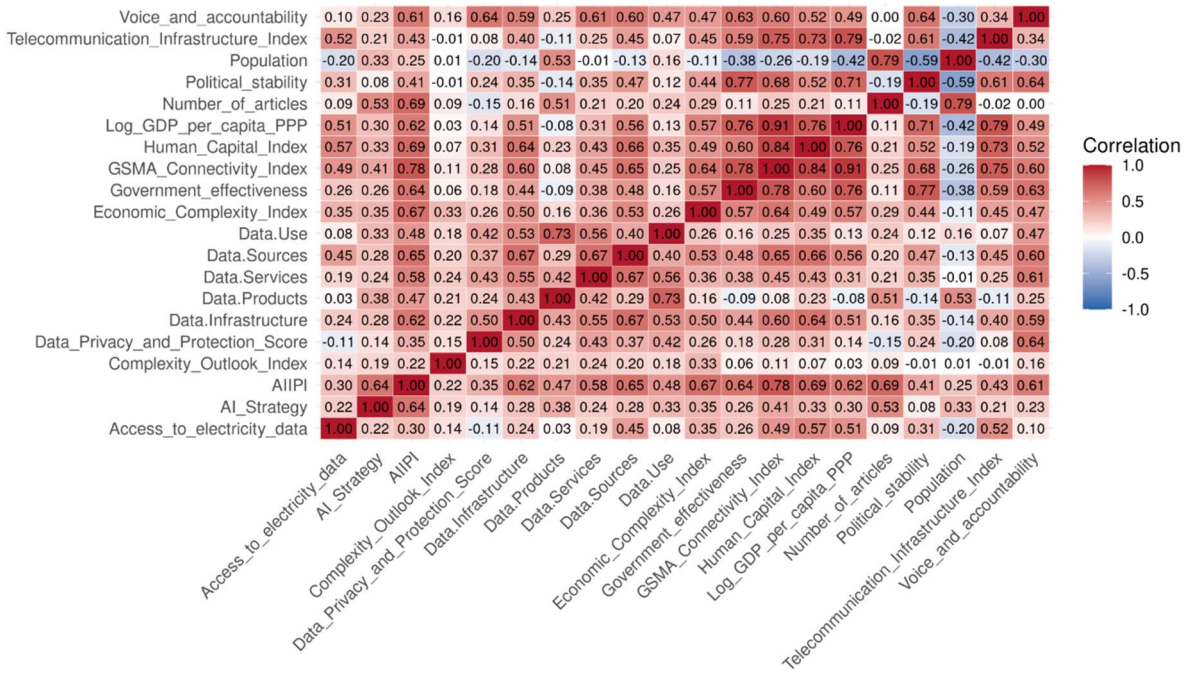
The absence of robust digital infrastructure further constrains the ability of low-performing nations to enhance their AI investment potential. Metrics such as the GSMA Connectivity Index and the Telecommunication Infrastructure Index highlight the indispensable role of reliable broadband networks, high-speed internet access, and modern technological systems in enabling AI adoption. However, many low-performing nations continue to grapple with outdated infrastructure that limits connectivity and stifles innovation. For instance, inadequate broadband penetration excludes significant portions of the population from participating in the digital economy, while slow and unreliable internet connections impede the implementation of AI solutions in critical areas such as public health, disaster management, and financial inclusion. These infrastructural deficiencies not only restrict economic opportunities but also perpetuate digital divides within and across nations.

Governance and institutional weaknesses represent another critical barrier to AI investment potential in low-performing nations. Effective governance plays a pivotal role in fostering a stable and predictable environment that encourages innovation and attracts AI investment. However, indicators such as Government Effectiveness and Voice and Accountability reveal significant governance deficits in many low-performing countries. Weak institutions and limited regulatory transparency erode investor confidence, deterring both domestic and foreign investments in AI. The lack of robust data privacy frameworks further exacerbates these challenges by creating uncertainty around the security and ethical use of data, which is foundational to the development of AI ecosystems. Without strong governance and regulatory mechanisms, low-performing nations struggle to establish the trust and accountability necessary to foster a thriving AI industry.

The shortage of a skilled workforce compounds the challenges faced by low-performing nations. Human capital development, as captured in the Human Capital Index, is a fundamental driver of AI innovation and investment potential. Yet, many low-performing countries face significant constraints in providing access to quality education, technical training, and research opportunities. The absence of structured programs to develop expertise in AI and data science leaves these nations ill-equipped to cultivate the talent required for building and sustaining AI ecosystems. As a result, they often rely on external expertise, which not only increases costs but also limits the development of indigenous AI capabilities and solutions tailored to local needs.

In contrast, high-performing nations provide a blueprint for success, demonstrating how strategic planning, targeted investments, and institutional reforms can significantly enhance AI investment potential. These nations, classified within Stages 3 and 4 of the AIIPI, consistently outperform their peers across a range of interrelated indicators, showcasing the importance of a holistic approach to fostering AI readiness and innovation (See Figure 15a).

Figure 15a: Correlation HeatMap for Countries in Stage 3 & 4 of AIIPI 2025



Advanced digital infrastructure serves as a cornerstone of AI investment potential in high-performing nations. Reliable, high-speed broadband networks enable seamless connectivity, supporting the deployment and scaling of AI technologies across industries. For instance, strong GSMA Connectivity Index scores among high-performing countries reflect their commitment to building robust telecommunication infrastructure that facilitates access to digital services and promotes economic inclusion. Investments in secure and scalable data infrastructure, including data storage, computational power, and cloud technologies, have provided countries with the tools necessary to support AI innovation. This emphasis on digital maturity not only enhances AI adoption but also positions these nations as attractive destinations for technology-focused investments.

Human capital development is another defining characteristic of high-performing nations. These countries have invested heavily in education and workforce training, integrating AI and data science into school and university curricula while fostering partnerships between academia, industry, and government. These collaborative efforts have bridged skills gaps, enhanced research capacity, and created a steady pipeline of qualified professionals equipped to drive AI innovation. Furthermore, these nations prioritize lifelong learning initiatives and vocational training programs to ensure that their workforces remain agile and adaptable in the face of rapid technological change.

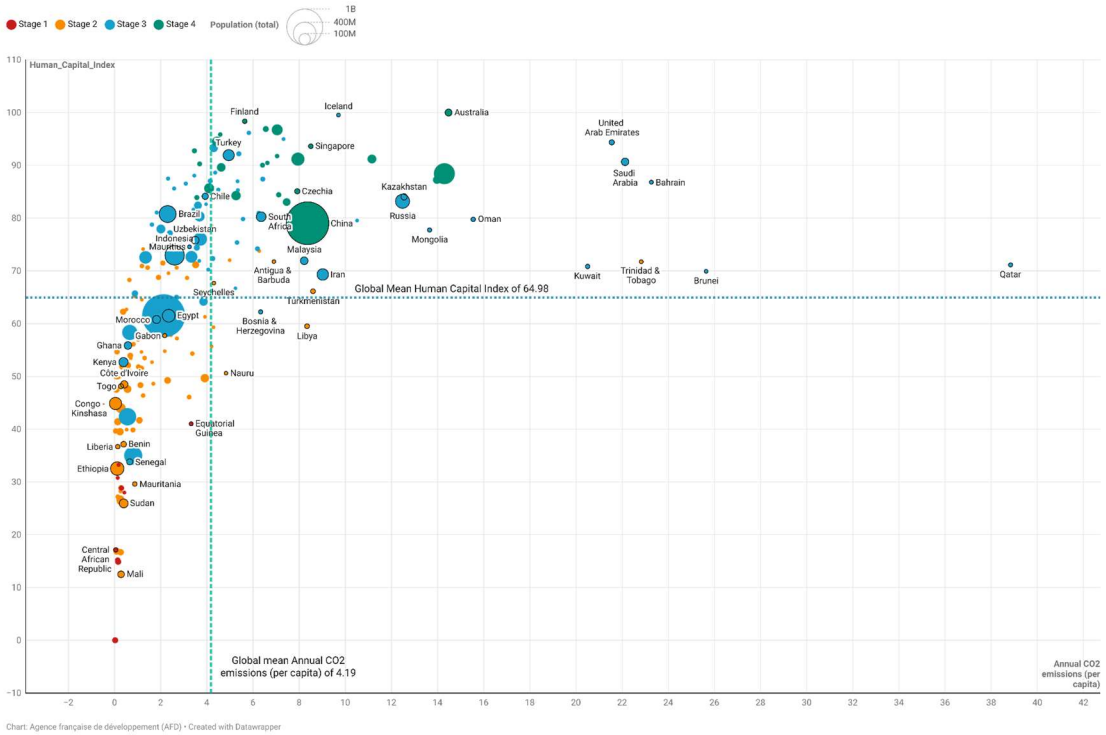
Governance reforms have played a pivotal role in the success of high-performing nations. Indicators such as Voice and Accountability and Government Effectiveness underscore the importance of transparent, accountable, and stable institutions in creating an environment conducive to AI investment. By adopting forward-looking regulatory frameworks and aligning their governance systems with global AI ethics standards, these countries have established the trust and stability needed to attract sustained investments. Their efforts to engage stakeholders across sectors have further enhanced their ability to coordinate and implement transformative AI initiatives. Equally important are the strong data governance frameworks that ensure the ethical and secure use of data, fostering trust among citizens, investors, and stakeholders.

Strategic national AI policies are another hallmark of high-performing nations. These policies emphasize research and development and foster cross-sector collaboration. By leveraging their industrial and technological capacities, these countries have created dynamic ecosystems that enable the seamless integration of AI into critical sectors. The Economic Complexity Index highlights how high-performing nations have successfully diversified their economies and enhanced their competitiveness through targeted investments in AI.

Bridging the gap between low- and high-performing countries requires a comprehensive and sustained effort. Low-performing nations must prioritize the development of national AI strategies that address their unique challenges and align with their socio-economic priorities. Investments in digital infrastructure should focus on expanding connectivity, upgrading outdated systems, and ensuring equitable access to technology. Governance reforms must be implemented to create transparent and accountable institutions capable of fostering trust and attracting investment. Equally important is the need to enhance human capital development by integrating AI and data science into education, expanding technical training programs, and fostering collaboration between academic institutions and industries.

The experiences of high-performing nations offer valuable lessons for low-performing countries seeking to enhance their AI investment potential. By addressing foundational gaps and implementing targeted interventions, these nations can position themselves as emerging hubs for AI innovation and investment. The disparities highlighted by the AIIPI emphasize the urgency of fostering inclusive growth through cohesive policies and strategic investments. Unlocking the transformative potential of AI can pave the way for sustainable economic development and technological progress, ensuring that no nation is left behind in the global digital economy.

Figure 15b: Human Capital Index vs. Annual CO2 Emissions per Capita: Insights into Development Stages, Population Dynamics, and Sustainability



Beyond this, the relationship between human capital development and environmental sustainability presents significant implications for AI investment potential across nations. As illustrated in Figure 15b, countries with high Human Capital Index (HCI) scores and moderate CO2 emissions, such as Singapore and Finland, exemplify sustainable development models that balance industrial growth with environmental stewardship. France, Portugal, Switzerland, and Sweden exemplify countries at Stage 4 that successfully combine a high Human Capital Index (HCI) with below-average CO2 emissions per capita. These nations demonstrate how strong human capital development can coexist with sustainable environmental practices, serving as models for balancing economic growth and ecological responsibility. In contrast, low-performing nations, particularly in Sub-Saharan Africa, face dual challenges of underdeveloped human capital and minimal industrialization, reflected in low HCI and CO2 emissions. These disparities highlight the urgent need for targeted AI-driven interventions to enhance education, healthcare, and skill development while promoting green growth strategies. Moreover, populous nations like India and China, with moderate emissions and improving HCI, offer immense opportunities to leverage AI investments for scaling human capital development and fostering inclusive, sustainable innovation. Addressing these global disparities will be critical to enabling low-performing countries to become hubs for AI-driven economic growth.

6. Policy Recommendations for Enhancing AI Attractiveness and Investment Potential

The global landscape of artificial intelligence (AI) investment potential highlights stark disparities between regions. Addressing these inequities requires a strategic, collaborative, and tailored approach that promotes equitable economic growth and societal advancement. Insights from the AIIPI 2025 analysis inform the following policy recommendations, which provide actionable pathways for nations at various stages of AI investment potential to strengthen their ecosystems and enhance their attractiveness to AI investments.

Strengthening Governance Frameworks

Effective governance underpins AI ecosystem development. Governments must prioritize the establishment of transparent, efficient institutions that build investor confidence. Political stability and predictable regulatory environments are critical for attracting long-term investments. Policymakers should adopt forward-looking AI strategies that clearly define objectives and actionable steps to facilitate ecosystem growth.

Equally important is the integration of ethical AI standards. These should address data privacy, algorithmic transparency, and equity considerations, building trust among stakeholders. High-performing nations should further expand access to AI education, particularly for underrepresented groups, ensuring workforce inclusivity.

Investing in Digital and Physical Infrastructure

Robust infrastructure is vital for scaling AI adoption and innovation. Governments should invest in high-speed internet and mobile connectivity, prioritizing underserved regions to bridge the digital divide. Strengthening telecommunication systems, including the deployment of 5G networks, is essential to enabling the seamless deployment of AI technologies across critical sectors such as healthcare, agriculture, and education.

Developing scalable data infrastructure, including secure data centers and advanced computational resources, will support research and innovation, ensuring that nations remain competitive in the evolving AI economy.

Cultivating Human Capital

A skilled workforce is a cornerstone of AI-driven innovation. Educational curricula must be revamped to integrate AI and data science at all levels, emphasizing interdisciplinary approaches to prepare students for AI-intensive roles. Governments should also increase funding for research and development and establish AI research hubs to accelerate innovation and technology transfer.

Lifelong learning programs should be implemented to upskill and reskill workers, equipping them to meet the evolving demands of the AI economy. Partnerships between the public and private sectors can ensure that training programs are aligned with industry needs.

Enhancing Data Governance and Security

Robust data governance frameworks are essential for building trust in AI systems. Governments must implement comprehensive data privacy regulations and enforce compliance with global standards. National AI strategies should emphasize innovation funding and cross-sector collaboration, ensuring adaptability to evolving technological and socio-economic contexts.

Open data initiatives that provide access to high-quality, anonymized datasets can spur innovation and research, particularly in sectors such as healthcare, education, agriculture, and public administration.

Fostering Regional and International Collaboration

Collaboration is key to unlocking the full potential of AI ecosystems. Public-private partnerships can drive the development and scaling of AI applications, while regional alliances promote knowledge sharing, resource pooling, and the establishment of common AI standards.

Low-performing nations can leverage global funding mechanisms and technical assistance programs to build foundational capacities. High-performing AI regions must share resources, expertise, and best practices to foster a balanced and inclusive global AI ecosystem.

Promoting Green Growth Strategies

Sustainability should be central to AI development. Investments in AI-driven technologies that address climate change and optimize resource efficiency, such as renewable energy solutions and sustainable agriculture, are critical. Developing energy-efficient algorithms and computational systems will minimize the environmental impact of AI ecosystems.

Governments should align AI investments with global sustainability goals, using indicators such as CO2 emissions per capita to ensure compatibility with environmental objectives.

Accelerating Emerging Economies and Building Foundations in Low-Performing Regions

Emerging economies must enhance their digital infrastructure, including broadband and next-generation telecommunication networks, to enable widespread AI adoption. Establishing dynamic innovation ecosystems, such as AI hubs and research centers, will drive localized solutions and foster creativity.

Low-performing nations face structural barriers that require targeted interventions. Developing actionable national AI strategies, addressing infrastructural deficits, and establishing robust governance frameworks are essential for creating vibrant AI ecosystems. International partnerships can provide access to funding, technical expertise, and knowledge-sharing opportunities, accelerating progress.

Implementing Comprehensive Monitoring and Evaluation

Monitoring frameworks, such as the GSMA Connectivity Index and Human Capital Index, are crucial for tracking progress and refining strategies. Regular assessments of AI policies and programs ensure they remain relevant and impactful. Platforms for collaboration among policymakers, academia, and industry stakeholders enable continuous improvement through shared insights and best practices.

By implementing these recommendations, nations can enhance their AI attractiveness and investment potential, fostering innovation, economic growth, and societal benefits. High-performing regions must continue to lead by example, promoting inclusivity and sharing resources to support emerging economies. Addressing foundational gaps in low-performing regions and accelerating progress in emerging economies will contribute to a more balanced and equitable global AI framework. A coordinated approach, combining domestic reforms with international collaboration, will unlock AI's transformative potential and drive sustainable and inclusive progress worldwide.

Advancing the AIIPI Framework

The AI Investment Potential Index (AIIPI) 2025 provides a multidimensional framework for assessing AI investment potential across countries. By integrating advanced machine learning models, comprehensive datasets, and methodological innovations, the AIIPI offers actionable insights for policymakers and investors. Future refinements will explore dynamic weighting schemes and real-time data integration, further enhancing the framework's utility and precision. With continuous improvements, the AIIPI aims to remain a vital tool for navigating the evolving global AI landscape and supporting inclusive, data-driven growth.

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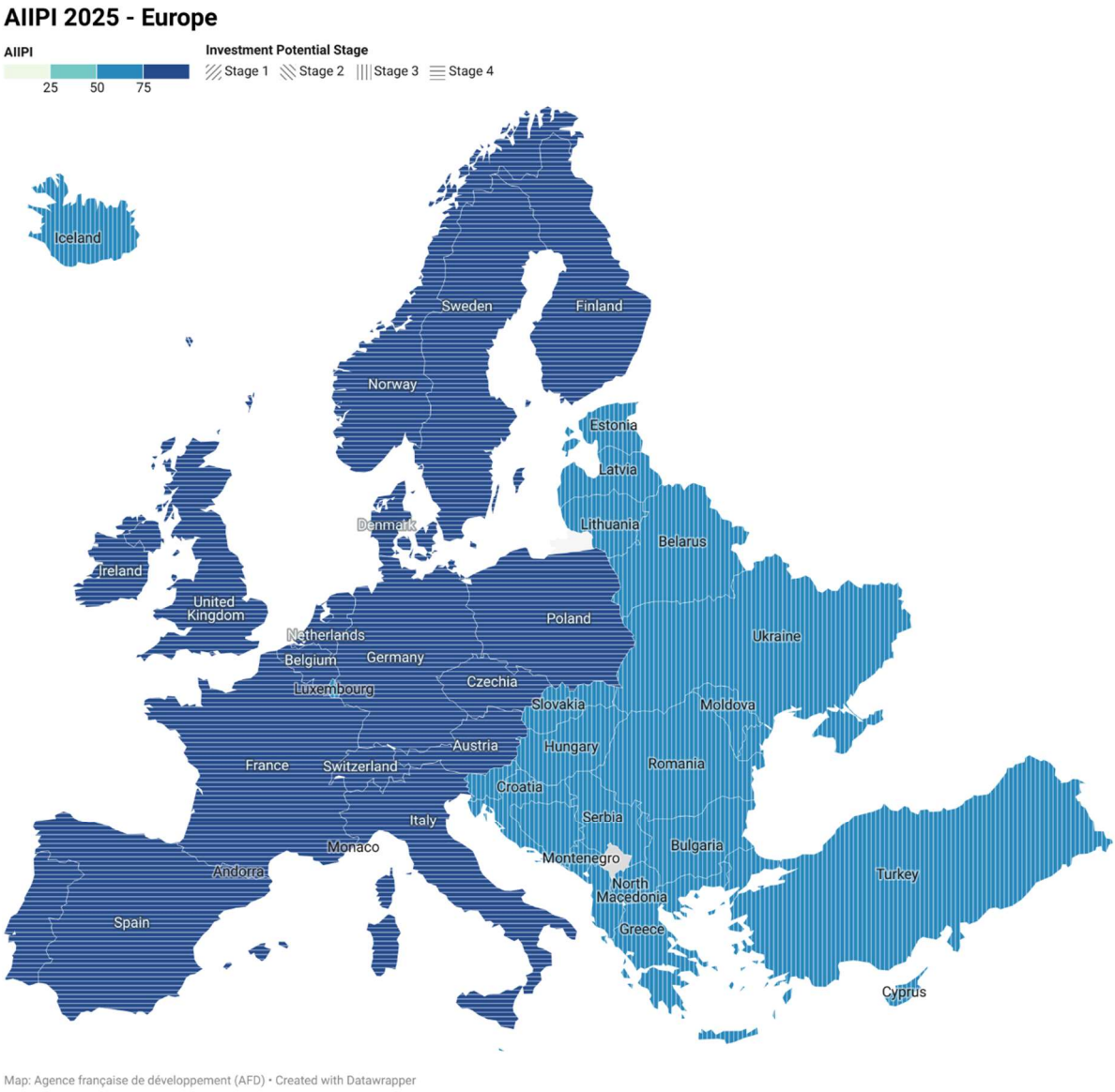
Annexes

Annex 1. Geographical Maps on AI Investment Potential Index

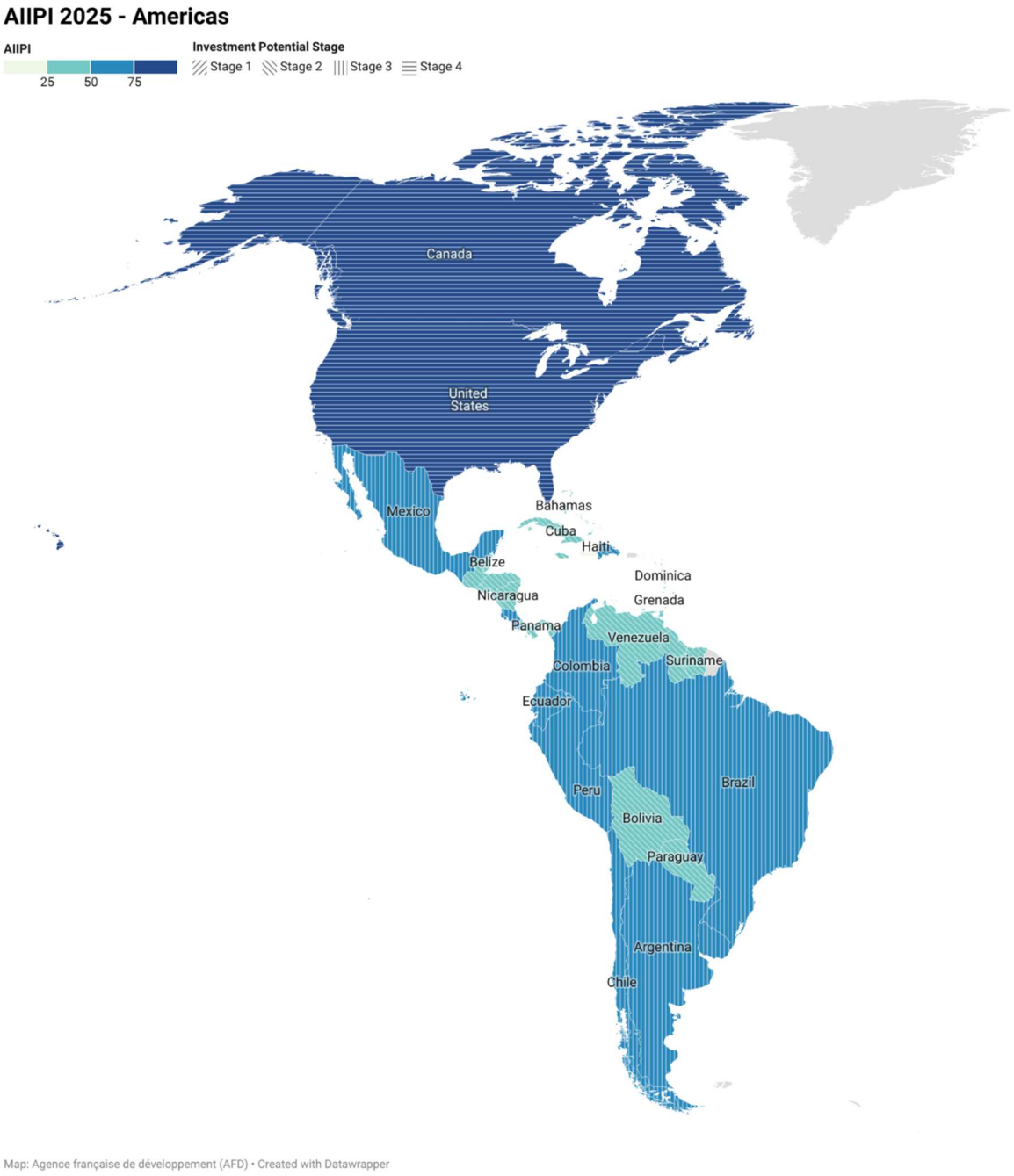
Map 2. AI Investment Potential Index in Africa

Map 3. AI Investment Potential Index in Oceania

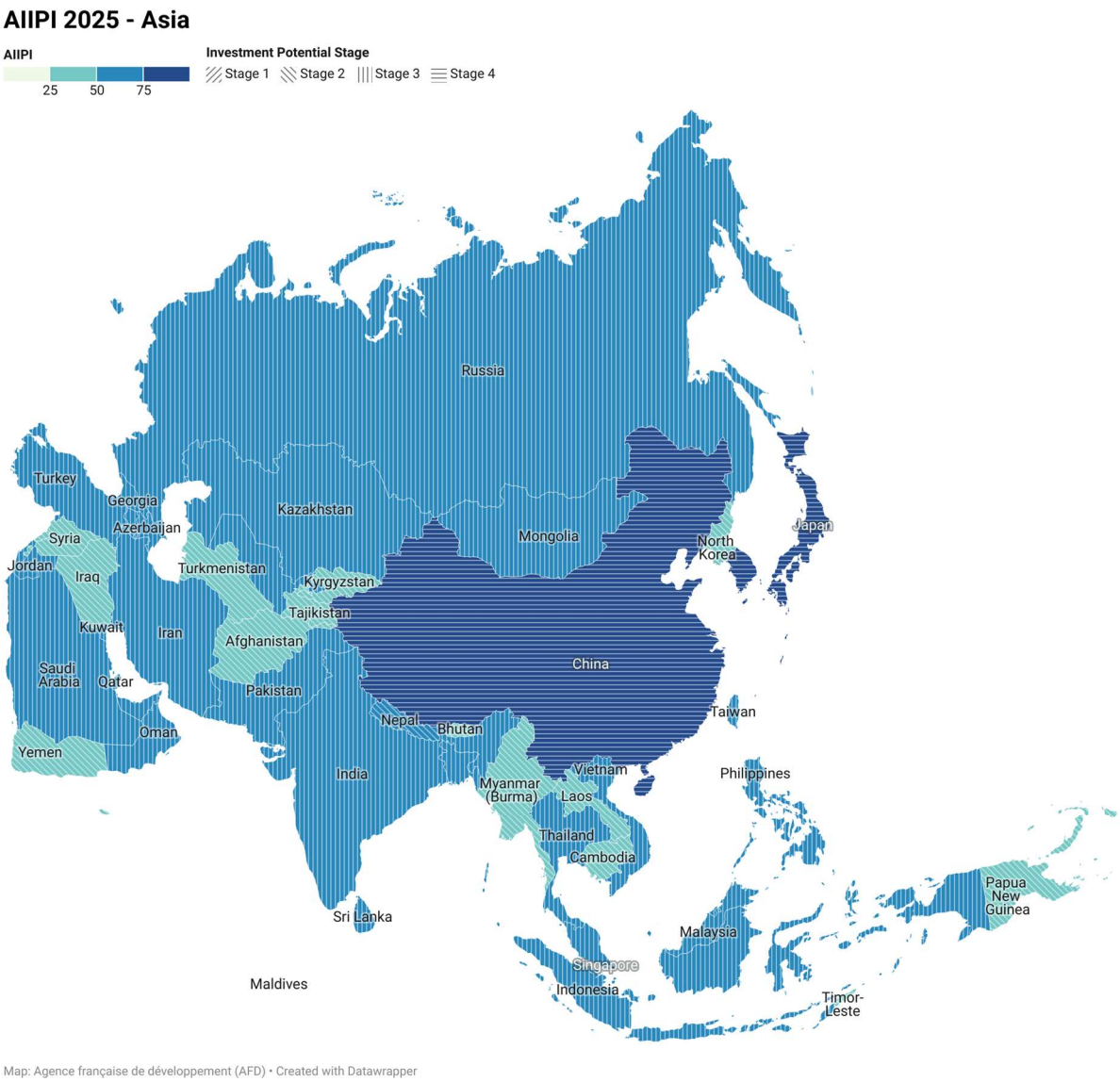
Map 4. AI Investment Potential Index in Europe



Map 5. AI Investment Potential Index in the Americas



Map 6. AI Investment Potential Index in Asia



Map: Agence française de développement (AFD) • Created with Datawrapper

Annex 2. Data sources and information on indicators.

Table 2: Data sources and information on indicators

INDICATORS	DESCRIPTION OF INDICATORS	PRIMARY SOURCE	SOURCE OF THE SOURCE
Population	Indicator based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are mid year estimates.	World Bank https://databank.worldbank.org/home.aspx	World Bank https://data.worldbank.org/indicator/SP.POP.TOTL
GDP per Capita PPP	Per capita values for gross domestic product (GDP) expressed in current international dollars converted by purchasing power parity (PPP) conversion factor.	World Bank https://databank.worldbank.org/home.aspx	World Bank https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD
Access to Electricity	Percentage of the population with access to electricity. Electrification data are collected from industry, national surveys and international sources.	World Bank https://databank.worldbank.org/home.aspx	World Bank https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS
Government Effectiveness	Reflects the perception of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. It ranges from approximately -2.5 to 2.5.	World Bank Worldwide Governance Indicators https://www.worldbank.org/en/publication/worldwide-governance-indicators	
Political Stability	Measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. It ranges from approximately -2.5 to 2.5.	World Bank Worldwide Governance Indicators https://www.worldbank.org/en/publication/worldwide-governance-indicators	
Voice and Accountability	Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. It ranges from approximately -2.5 to 2.5.	World Bank Worldwide Governance Indicators https://www.worldbank.org/en/publication/worldwide-governance-indicators	

INDICATORS	DESCRIPTION OF INDICATORS	PRIMARY SOURCE	SOURCE OF THE SOURCE
Telecommunications Infrastructure Index	Composite indicator - ranging from 0 to 1- composed of four indicators: the percentage of internet users, the Mobile-cellular subscriptions per 100 inhabitants, the active mobile-broadband subscriptions, the Fixed broadband subscriptions per 100 inhabitants.	UN E-Government Knowledgebase https://publicadministration.un.org/egovkb/en-us/Data-Center	
Human Capital Index	Measure of the development of human capital, calculated as the algorithmic mean of several subindices: expected years of schooling, mean years of schooling, percentage of gross enrolment ratio, adult literacy.	UN E-Government Knowledgebase https://publicadministration.un.org/egovkb/en-us/Data-Center	
GSMA Connectivity Index	Measure of the performance of 173 countries against the key enablers of mobile internet adoption : infrastructure, affordability, consumer readiness, as well as contents and services. In 2023, methodology of calculation has changed and several sub indicators have been removed or adjusted. Those updates have been applied retrospectively, so that scores can be compared in a consistent manner year-on-year.	Oxford Insights Government AI Readiness Index 2024 https://oxfordinsights.com/ai-readiness/ai-readiness-index/	GSMA Mobile Connectivity Index https://www.mobileconnectivityindex.com/index.html
Number of articles	The number of AI articles published by authors from the country over the past decade. Author countries are inferred from where their organizations are located over a dataset of more than 260 million scholarly articles.	Emerging Technology Observatory of the Center for Security and Emerging Technology at Georgetown University. Country Activity Tracker: Artificial Intelligence https://cat.eto.tech/?dataset=Patent&expanded=Summary-metrics	
Number of incoming investments	Calculates the annual number of incoming investments for each country. These investments include venture capital rounds, other private equity rounds, and merger/acquisition (M&A) transactions involving target companies located in the specified country over the past decade.	Emerging Technology Observatory of the Center for Security and Emerging Technology at Georgetown University. Country Activity Tracker: Artificial Intelligence https://cat.eto.tech/?dataset=Patent&expanded=Summary-metrics	

INDICATORS	DESCRIPTION OF INDICATORS	PRIMARY SOURCE	SOURCE OF THE SOURCE
Data Use	Measure of the degree of use of statistics respectively by the legislature, executive, civil society (including sub-national actors), academia and international bodies.	World Bank Statistical Performance Indicators (SPI) https://datanalytics.worldbank.org/SPI/	
Data Services	Indicator of the quality of data releases, the richness and openness of online access, the effectiveness of advisory and analytical services related to statistics and the availability and use of data access services such as secure microdata access.	World Bank Statistical Performance Indicators (SPI) https://datanalytics.worldbank.org/SPI/	
Data Products	Indicator of the variety of sources, it has been segmented whether the country is able to produce relevant indicators, primarily related to SDGs. It gives a weighted average of each dimension segmented by SDG's main focus : social (SDG 1-6), economic (SDG7-12), Environmental (SDG 13-15) and institutional (SDG 16-17).	World Bank Statistical Performance Indicators (SPI) https://datanalytics.worldbank.org/SPI/	
Data Sources	Measure of the variety of data sources available within the country. It is calculated as a weighted average of sources generated by the statistical office (censuses and surveys), and sources from administrative data, geospatial data, private sector data and citizen generated data.	World Bank Statistical Performance Indicators (SPI) https://datanalytics.worldbank.org/SPI/	
Data Infrastructure	Measure of the efficiency of hard and soft infrastructure within the statistical system. It is calculated as a weighted average of several dimensions : legislation and governance, Standards and methods ensuring compliance, statistical literacy, inclusive and coherent partnerships and, degree of financing within the statistical system.	World Bank Statistical Performance Indicators (SPI) https://datanalytics.worldbank.org/SPI/	

INDICATORS	DESCRIPTION OF INDICATORS	PRIMARY SOURCE	SOURCE OF THE SOURCE
Data Privacy and Protection Score	Classification of data-related regulation by country.Each classification has been assigned to a percentage corresponding to the relative advancement of the country in terms of the establishment of accountable administrative bodies for data protection: • 0%: no specific law • 50%: partially adequate • 100% : data protection law(s) • 100%: EU or EEA member country • 100%: Independent authority and law(s).	CNIL (French Data Protection Authority) https://www.cnil.fr/en/data-protection-around-the-world	CNIL (French Data Protection Authority) https://www.data.gouv.fr/fr/datasets/protection-des-donnees-personnelles-dans-le-monde/#/resources
AI Strategy	Degree of enforcement of national measures related to AI implementation - whether the country is developing or has already released an AI strategy on its territory	Our World in Data Countries with national intelligence strategies https://ourworldindata.org/grapher/national-strategies-on-artificial-intelligence?tab=table&time=2020..2023	The Stanford AI Index 2024 Annual Report : https://aiindex.stanford.edu/report/
The Economic Complexity Index	Ranking of countries based on the diversity and complexity of their export baskets. It reflects a country's capacity to produce complex products and, consequently, its level of sophisticated and specialized capabilities and know-how.	Growth Lab - Harvard's Atlas for Economic Complexity https://atlas.hks.harvard.edu/rankings	
The Complexity Outlook Index	Measure of the number of complex products near a country's current set of productive capabilities. It reflects the ease of potential diversification for a country based on the availability of nearby complex products that rely on similar capabilities and know-how.	Growth Lab - Harvard's Atlas for Economic Complexity https://atlas.hks.harvard.edu/rankings	

Annex 3. Mathematical Framework of the Random Forest Model

Model Structure

The Random Forest model, an ensemble learning approach, aggregates predictions from multiple decision trees to improve predictive accuracy and generalization. For regression tasks, Random Forest predicts a continuous target variable y, which, in this study, represents incoming investment values. The model is trained on a dataset consisting of predictors X and their corresponding target values.

Let:
- $y \in \mathbb{R}$: Target variable (*Incoming AI investment count per country*)
- $X = \{x_1, x_2, \ldots, x_p\}$: Set of p predictors
- $T_b(x)$: Prediction of the b-th decision tree for input x
- B: Total number of decision trees in the ensemble

The Random Forest prediction for an observation x is expressed as the average prediction of all B trees:

$$\hat{y} = f(x) = (1 / B) \sum T_b(x)$$

Feature importance quantifies the contribution of each predictor to the model's predictive performance. It is computed by assessing the reduction in impurity (e.g., Gini index or Mean Squared Error) attributable to a given feature across all decision trees.

The **importance score** for a feature x$_k$ is given by:

$I_k = (1 / B) \sum R_{kb}$, where R_{kb} is the reduction in impurity for feature k in tree b.

The **normalized importance weights** w$_k$ are calculated as:

$$w_k = I_k / \sum I_j$$

The **composite index CI** provides a synthesized measure of the predictors, weighted by their importance in the Random Forest model. For each observation i, the composite index is calculated as:

$$CI_i = \sum w_k \cdot x_{ik}$$

This approach ensures that predictors with higher relevance in the Random Forest model have a proportionally greater impact on the composite index.

The Random Forest hyperparameters were tuned to achieve optimal performance. The key hyperparameter, $mtry$, which determines the number of predictors considered at each split, was optimized at $\boldsymbol{mtry = 19}$. The **default number of trees (B)** was maintained at 500 to balance computational efficiency and predictive stability.

To assess the model's performance, the following evaluation metrics were employed:

Root Mean Square Error (RMSE): Measures the average magnitude of prediction errors, defined as:

$$RMSE = \sqrt{(1 / n) \sum (\hat{y}_i - y_i)^2}$$

Coefficient of Determination (R^2): Indicates the proportion of variance explained by the model:

$$R^2 = 1 - (\sum (y_i - \hat{y}_i)^2 / \sum (y_i - \bar{y})^2)$$

The optimal Random Forest model achieved an RMSE of 0.359 and an R^2 value of 0.867, demonstrating its robustness and predictive accuracy.

Table 3: Table of Weights (Random Forest)

VARIABLE	WEIGHT
Number of Articles	0.3069
Government Effectiveness	0.1107
Data Privacy and Protection Score	0.068
GSMA Connectivity Index	0.064
Population	0.0598
Log GDP per Capita (PPP)	0.0485
Human Capital Index	0.0484
Data Sources	0.0402
Voice and Accountability	0.0366
Political Stability	0.036
Telecommunication Infrastructure Index	0.0355
Economic Complexity Index	0.0337
Data Infrastructure	0.0242
Complexity Outlook Index	0.023
AI Strategy	0.0226
Data Services	0.0214
Data Use	0.0143
Data Products	0.0061
Access to Electricity Data	0

Figure 16: Density Plot of AIIPI 2025

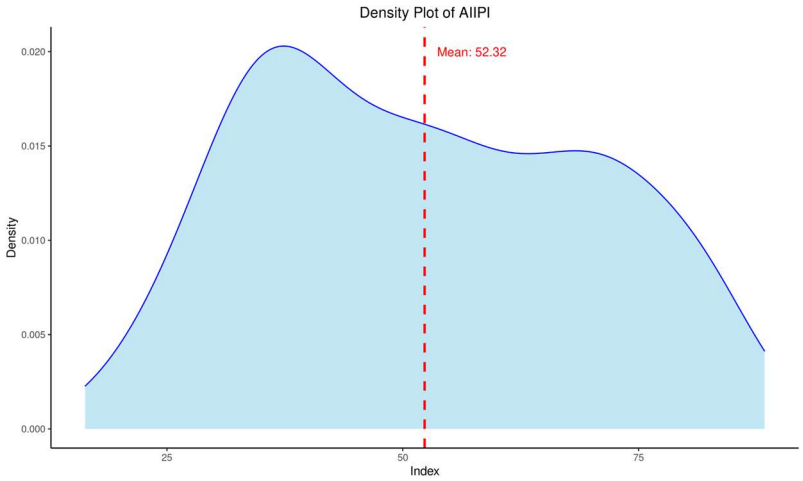
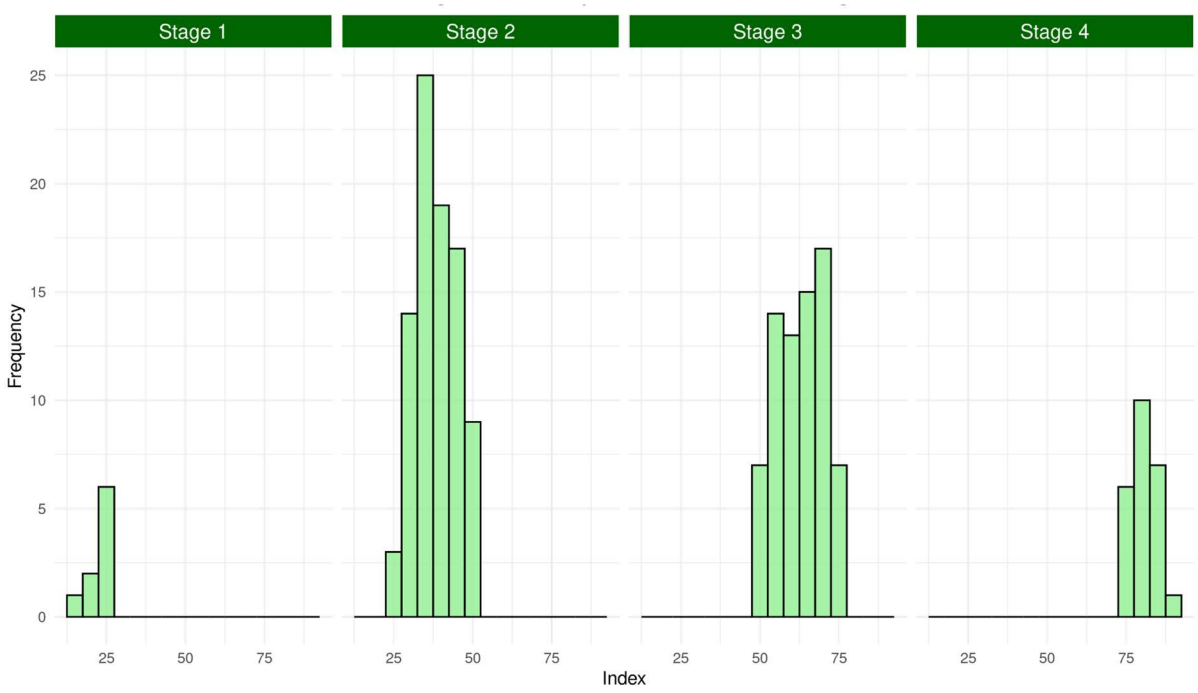


Figure 17: Histogram of AIIPI 2025 by Potential Stage



The analysis of AIIPI scores reveals distinct trends across investment potential stages (See Figure 16). The stages are defined as follows: Stage 1 (AIIPI < 26), Stage 2 (AIIPI between 26 and 50), Stage 3 (AIIPI between 51 and 75), and Stage 4 (AIIPI >= 76).

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