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Khazanah Nasional

CAPSTONE PROJECT PRESENTATION

# BRIDGING THE DIGITAL DIVIDE:

A 2023 ANALYSIS OF **AI READINESS** IN ASEAN  
COMPARED TO GLOBAL LEADERS

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# PROJECT BACKGROUND

Artificial Intelligence (AI) is rapidly shaping the future of economies, industries, and societies worldwide. However, not all countries are equally prepared to adopt and integrate AI technologies. ASEAN nations, in particular, face varying levels of digital infrastructure, investment, and policy readiness. As global leaders continue to advance, the digital divide between regions may widen further. This project aims to evaluate how prepared ASEAN countries are for AI adoption in 2023, and how they compare to top-performing nations. By identifying the key enablers and barriers to AI readiness, this study supports efforts to bridge the digital gap and accelerate inclusive digital transformation.



# PURPOSE

To assess how prepared ASEAN countries are for AI adoption compared to global leaders, and to understand the key digital factors driving this readiness.



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# OBJECTIVE

- 1 Compare AI Preparedness Index of ASEAN countries with top global performers.
- 2 Analyze the relationship between digital investment and AI readiness.
- 3 Assess how cybersecurity and digital infrastructure affect AI adoption.
- 4 Group countries based on key indicators to determine readiness countries classification



# DATASET SOURCE

1

**AI Preparedness Index** – Measures countries' readiness to adopt AI (includes digital infrastructure, ethics, human capital, etc.)

2

**Global Internet & Digital Growth Data** – Provides data on internet penetration, broadband speed, digital investment.

3

**Cybersecurity Index** – Evaluates national cyber-readiness and exposure.

4

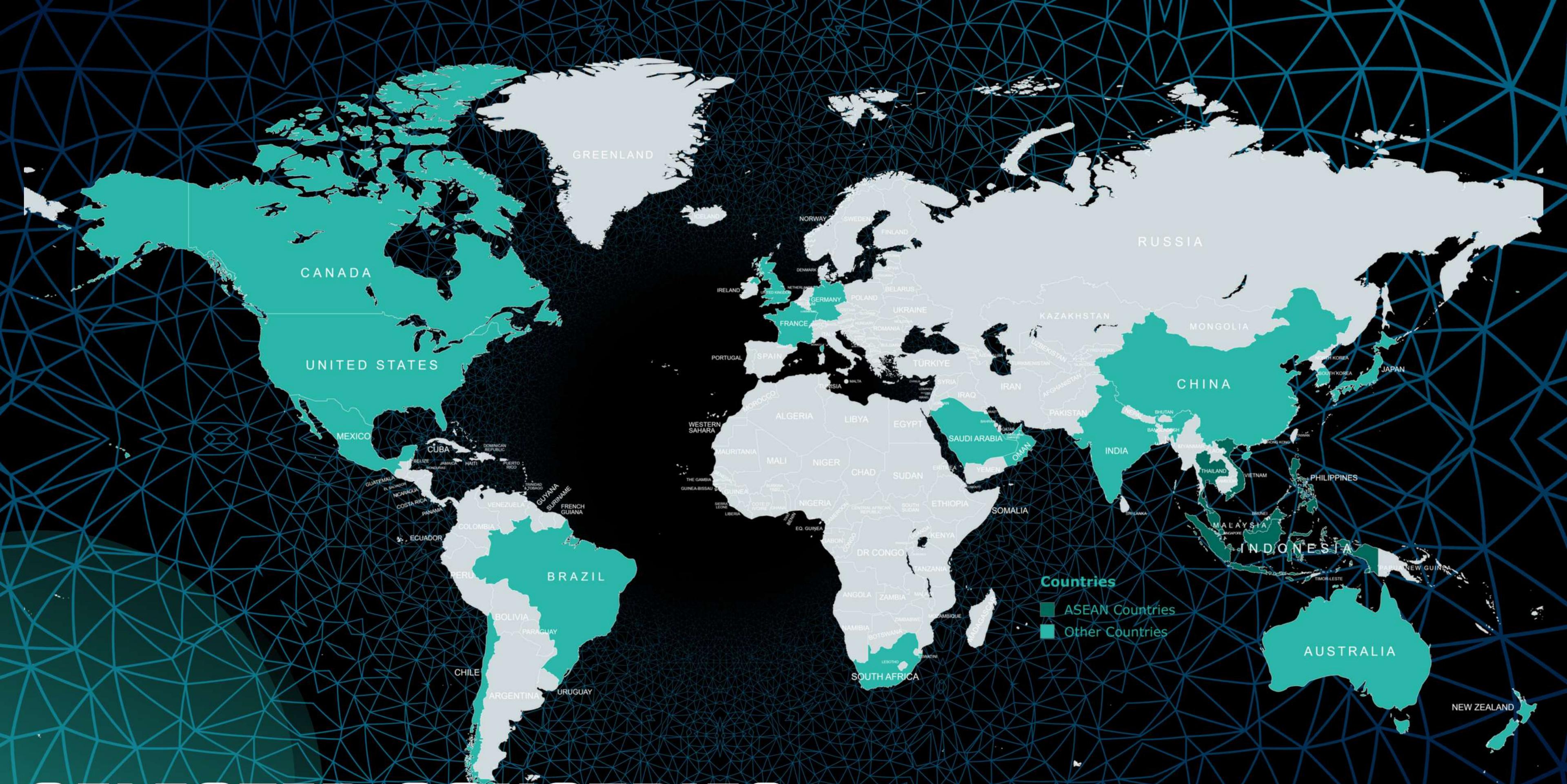
**SDG Goal Report** – Focuses on SDG Goal 9 (Industry, Innovation, Infrastructure) which captures innovation-related development levels.

Source : <https://www.kaggle.com/datasets>



# SELECTED COUNTRIES

Create with mapchart.net



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# AI PREPAREDNESS INDEX BY COUNTRY

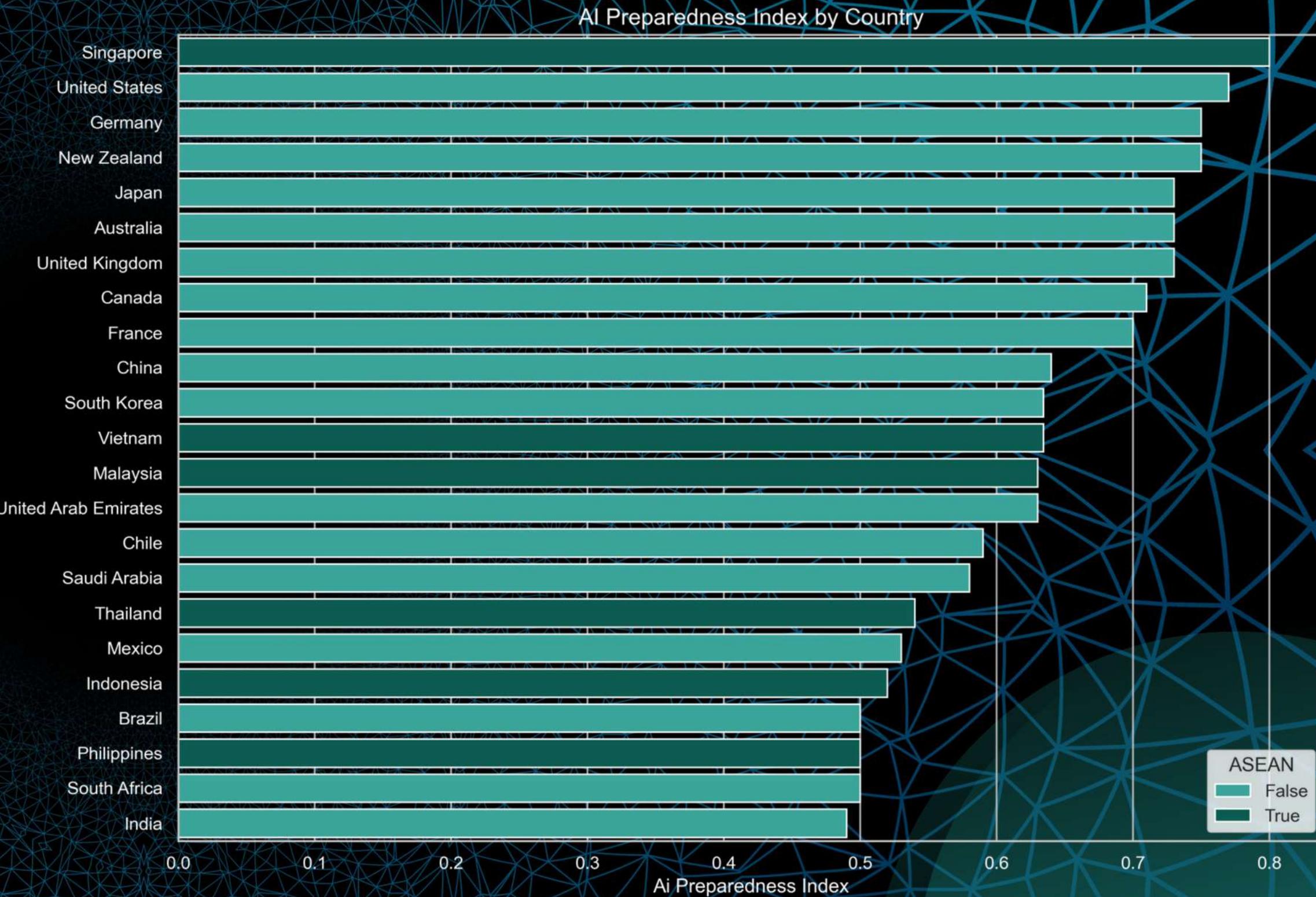
The AI preparedness index is designed to assess the level of readiness for artificial intelligence adoption across different countries. It evaluates countries based on four key dimensions: digital infrastructure, human capital and labor market policies, innovation and economic integration, and regulation and ethics.

## KEY INSIGHT

Singapore ranks highest among ASEAN countries and competes strongly with global tech leaders. Its robust digital infrastructure, progressive government policies, and thriving innovation ecosystem make it the regional leader in AI adoption.

There is a significant disparity within ASEAN while Singapore is highly prepared, countries like the Philippines and Indonesia score much lower, reflecting challenges in infrastructure, investment, and digital talent.

Global leaders maintain consistent high readiness. Countries like the United States, Germany, and the United Kingdom consistently perform well, backed by mature AI ecosystems, stable funding, and strong regulatory environments.



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# DIGITAL INVESTMENT BY COUNTRY

How much each country invested in digital technologies or infrastructure in 2023.

## KEY INSIGHT

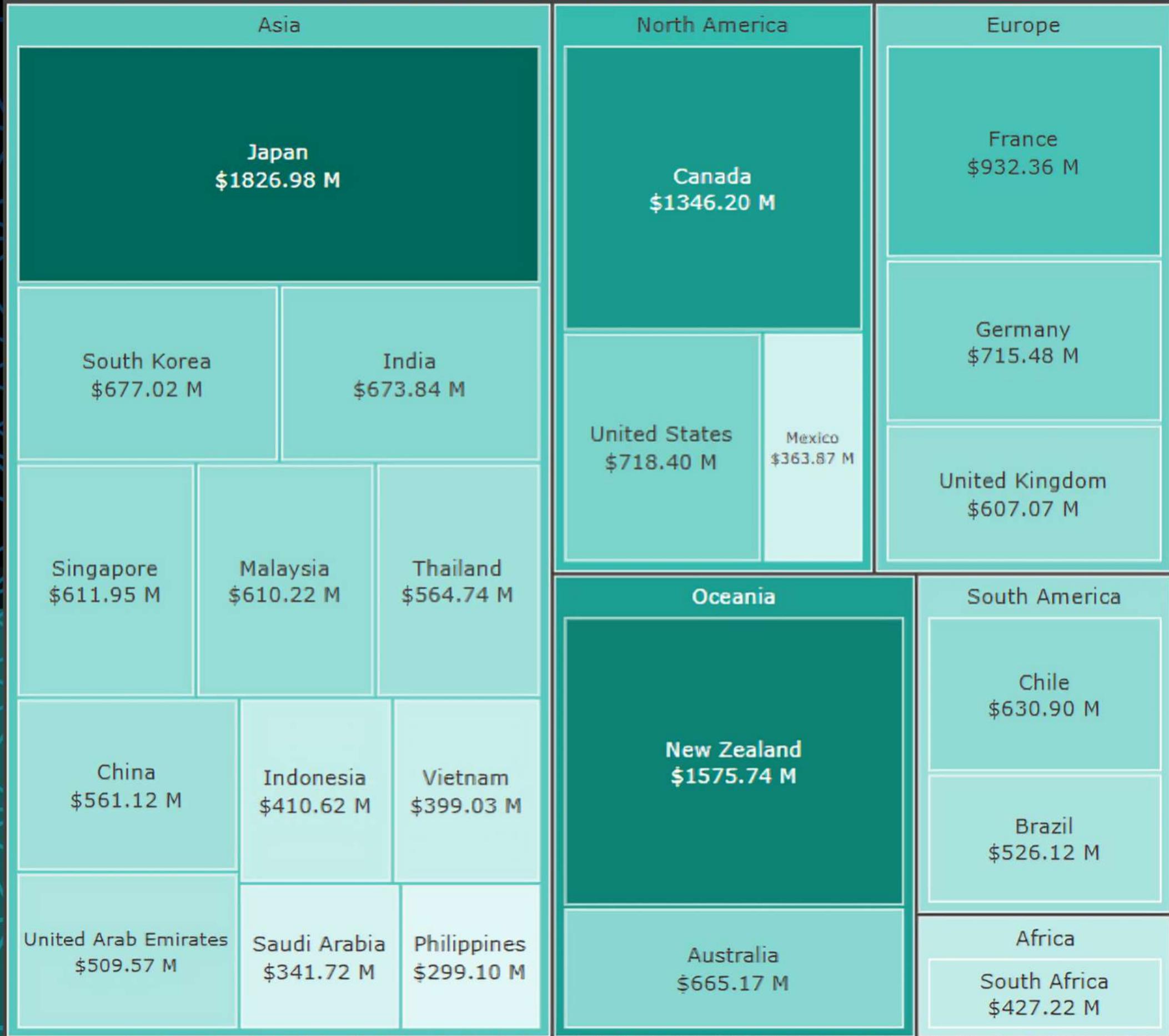
Japan is a major driver of digital investment across Asia, backed by its mature technology sector and strong innovation ecosystem.

Japan continues to maintain strong digital footprints in Asia through sustained investment, supported by mature tech industries, robust innovation ecosystems, and international collaborations.

Compared to global leaders, ASEAN countries (excluding Singapore and Malaysia) generally lag in digital investment due to limited infrastructure, regulatory readiness, and access to capital.

While digital investment levels in Malaysia are still growing, national initiatives such as the Malaysia Digital Economy Blueprint (MyDIGITAL) and 5G rollout are attracting increasing attention from global tech players.

With current efforts to build AI talent pipelines, expand digital infrastructure, and offer investor-friendly policies, Malaysia is positioning itself as the next digital hub in Southeast Asia.



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# CYBERSECURITY

The National Cyber Security Index (NCSI) is a Global index that assesses and measures a country's preparedness to prevent cyber threats and manage cyber incidents.

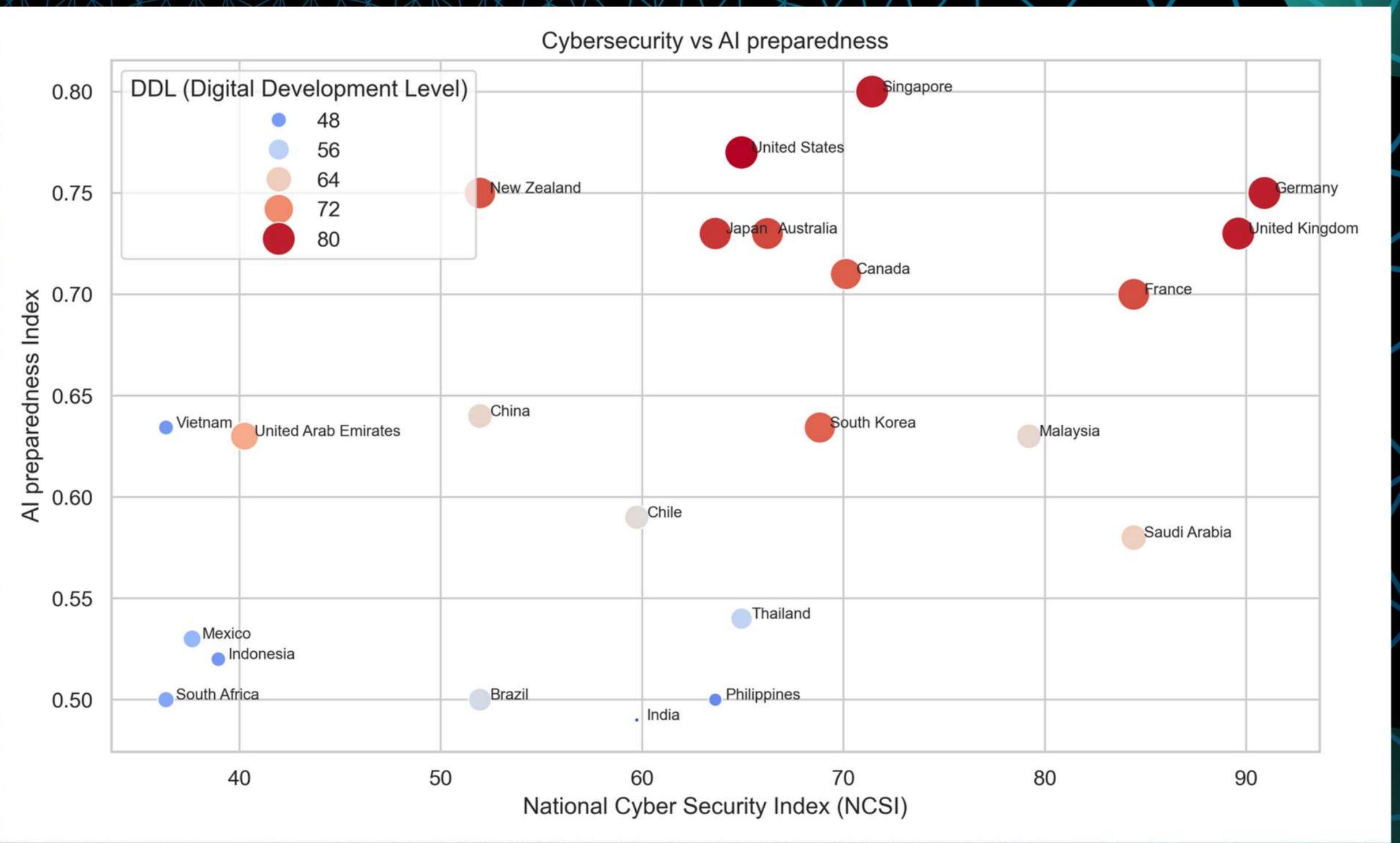
Digital Development Level (DDL) generally refers to the extent to which a country, region, or organization has adopted and integrated digital technologies and infrastructure into various aspects of life, including the economy, government, and society.

## KEY INSIGHT

ASEAN countries show strong progress in cybersecurity, with Singapore and Malaysia leading due to well-established policies and capabilities. Vietnam and Indonesia need to improve their cybersecurity readiness, especially in governance, infrastructure, and incident response.]

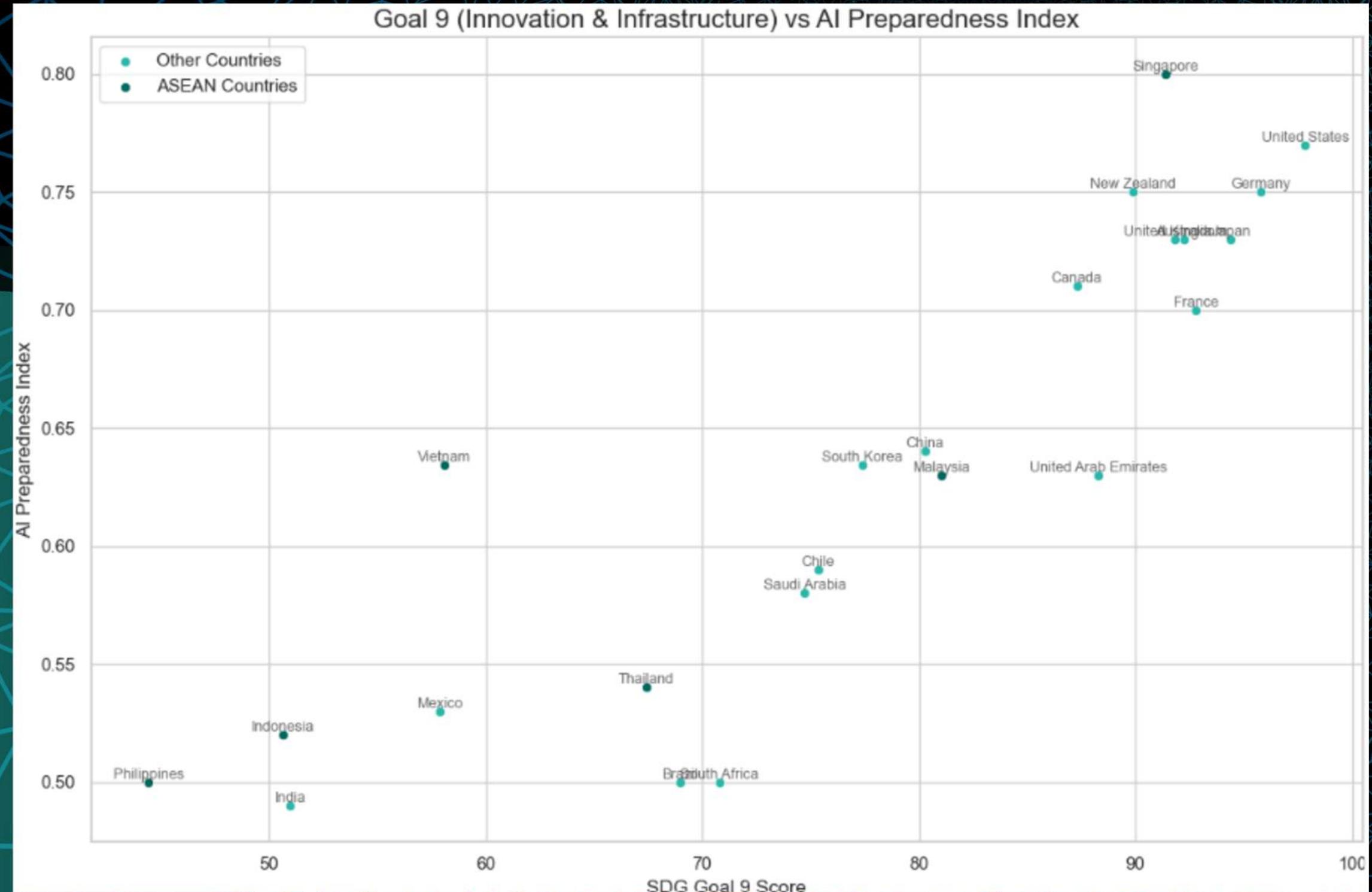
Germany and the United Kingdom demonstrate high cybersecurity resilience, backed by mature national strategies and proactive threat management.

The United States, despite high AI preparedness and digital development levels, still faces cybersecurity challenges, highlighting that even tech leaders are vulnerable to evolving cyber threats.



# SUSTAINABLE DEVELOPMENT GOAL

**SDG 9** focuses on building resilient infrastructure, promoting sustainable industrialization, and fostering innovation. It emphasizes the importance of upgrading industries and infrastructure to become more sustainable, while also promoting technological advancements and equal access to information and financial markets.



## KEY INSIGHT

Singapore leads ASEAN in SDG 9, reflecting strong performance in innovation, infrastructure development, and sustainable industrialization.

Malaysia ranks second but still shows a significant gap compared to Singapore, indicating room for improvement in innovation ecosystems and industrial capacity.

The Philippines ranks lowest among ASEAN countries, highlighting the urgent need for investment and strategic focus on infrastructure and innovation.

Most countries analyzed score above 60 in SDG 9, signaling moderate to strong progress except for India and Mexico, which continue to face notable challenges in advancing sustainable and inclusive industrial development.



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# DIGITAL INFRASTRUCTURE SCORE BY COUNTRY

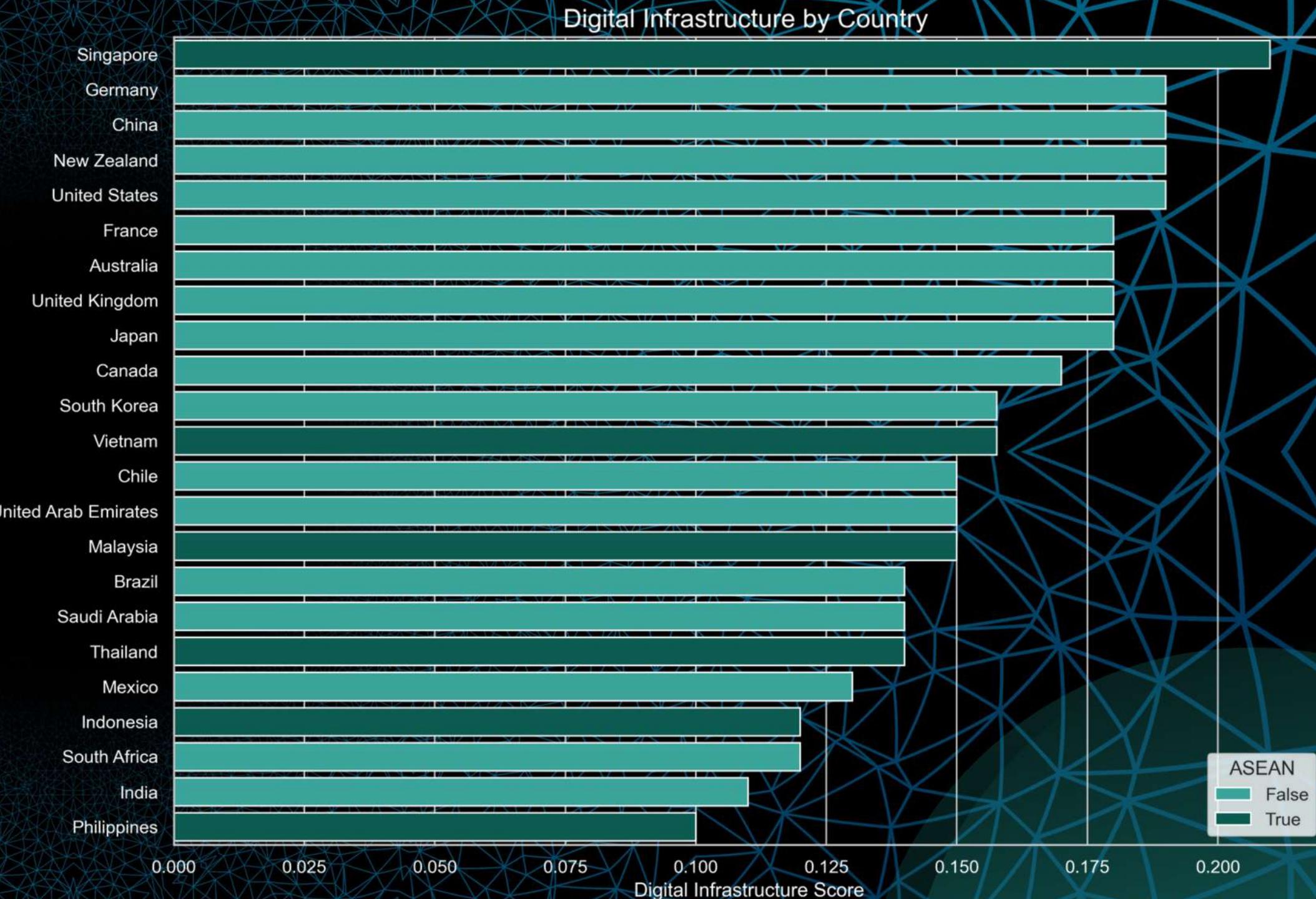
A country's digital infrastructure score reflects the availability and quality of its digital technologies and infrastructure.

## KEY INSIGHT

Singapore remains the digital infrastructure leader in ASEAN, demonstrating top-tier connectivity, server capacity, and broadband access.

Vietnam and Malaysia follow, showing significant progress, while Thailand, Indonesia, and the Philippines still lag behind and require stronger investments in digital infrastructure.

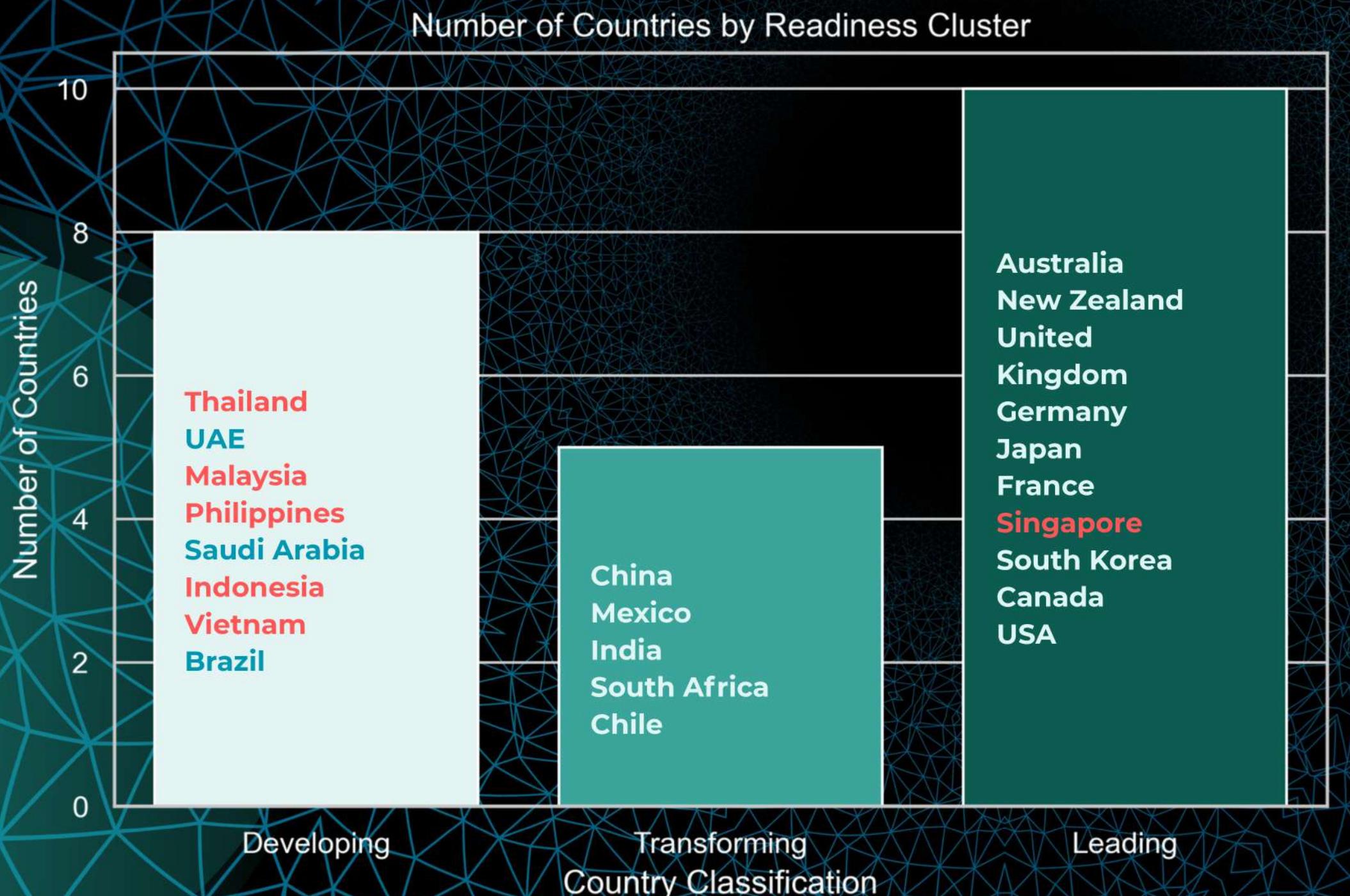
Germany, China, New Zealand, and the United States all perform closely behind Singapore, indicating a highly competitive digital ecosystem among global tech leaders.



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# COUNTRY CLASSIFICATION

A normalization method was used to calculate the Digital Readiness Score, which was based on key indicators. Countries were then classified according to their readiness levels.



## KEY INDICATORS

- Internet Penetration (%)
- Education Attainment Index (%)
- Digital Literacy Score (%)
- Internet Access Cost (USD per Mbps)
- Device Penetration (%)
- AI Adoption Index (%)
- Cloud Service Adoption (%)
- E-Commerce Penetration (%)
- Government Digital Policy Index (%)
- Data Privacy Regulation Strength (%)

## KEY INSIGHT

Most Asian countries are still in the developing stage of digital readiness. Greater efforts are needed to enhance infrastructure, accessibility, and adoption. To ensure meaningful digital transformation, countries must focus on extending digital access to all users while aligning economic and socio-economic strategies for inclusive progress.

Singapore stands out as the only ASEAN country capable of competing with global tech leaders in AI preparedness backed by strong infrastructure, high accessibility, and progressive digital policies.



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# RECOMMENDATIONS

1

Expand to Time-Series Analysis: Include trends from 2015–2023 to track AI readiness growth over time.

2

Explore AI Adoption at Sector Level: Education, healthcare, public service.

3

Deeper Statistical Modeling: Use regression, clustering, or machine learning for predictive insights.

# THANK YOU

## AU REVOIR



This study highlights the urgent need for ASEAN countries to strengthen their digital infrastructure, investment, and policy frameworks to remain competitive in the AI-driven future. By addressing these gaps, the region can bridge the digital divide and unlock inclusive, sustainable growth through responsible AI adoption.

