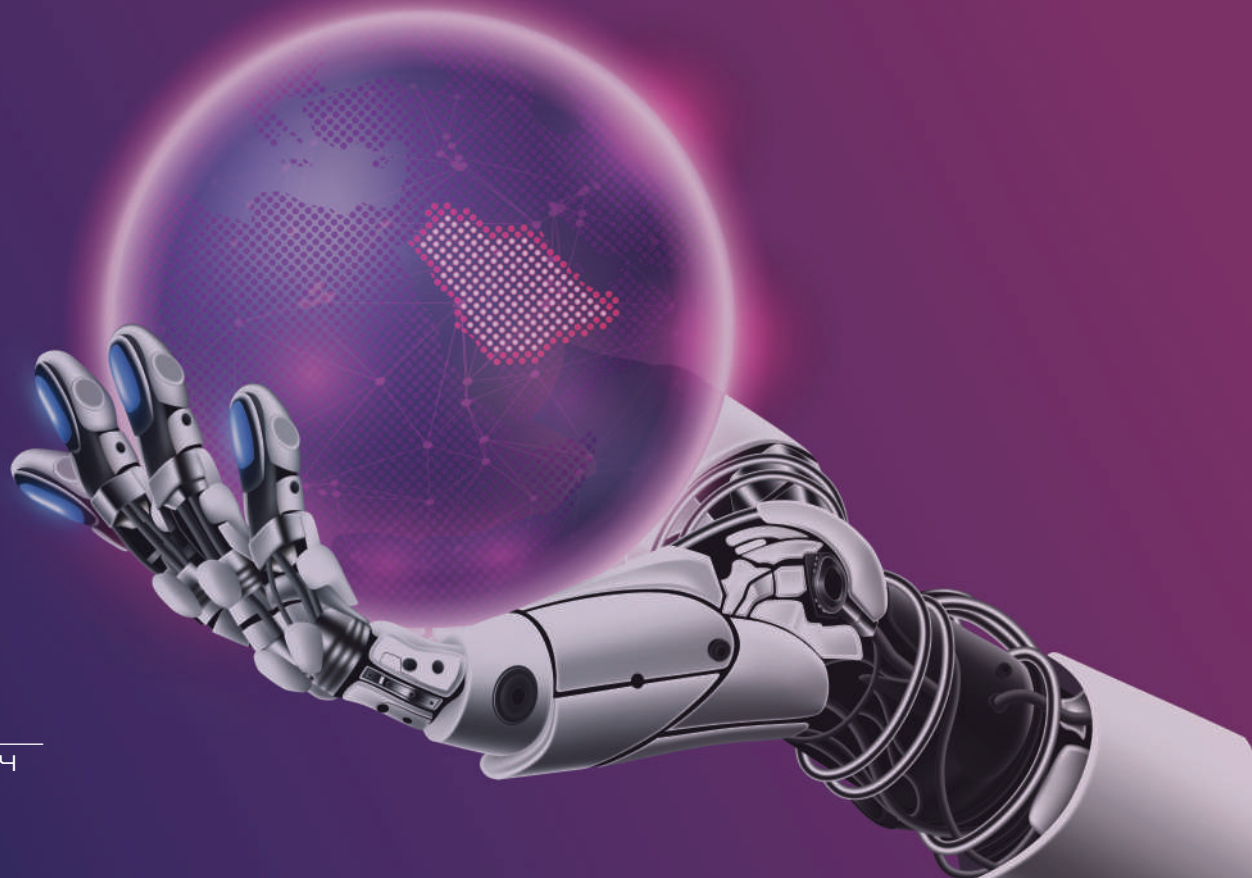
GAIN
SUMMIT

STATE OF AI
IN SAUDI ARABIA



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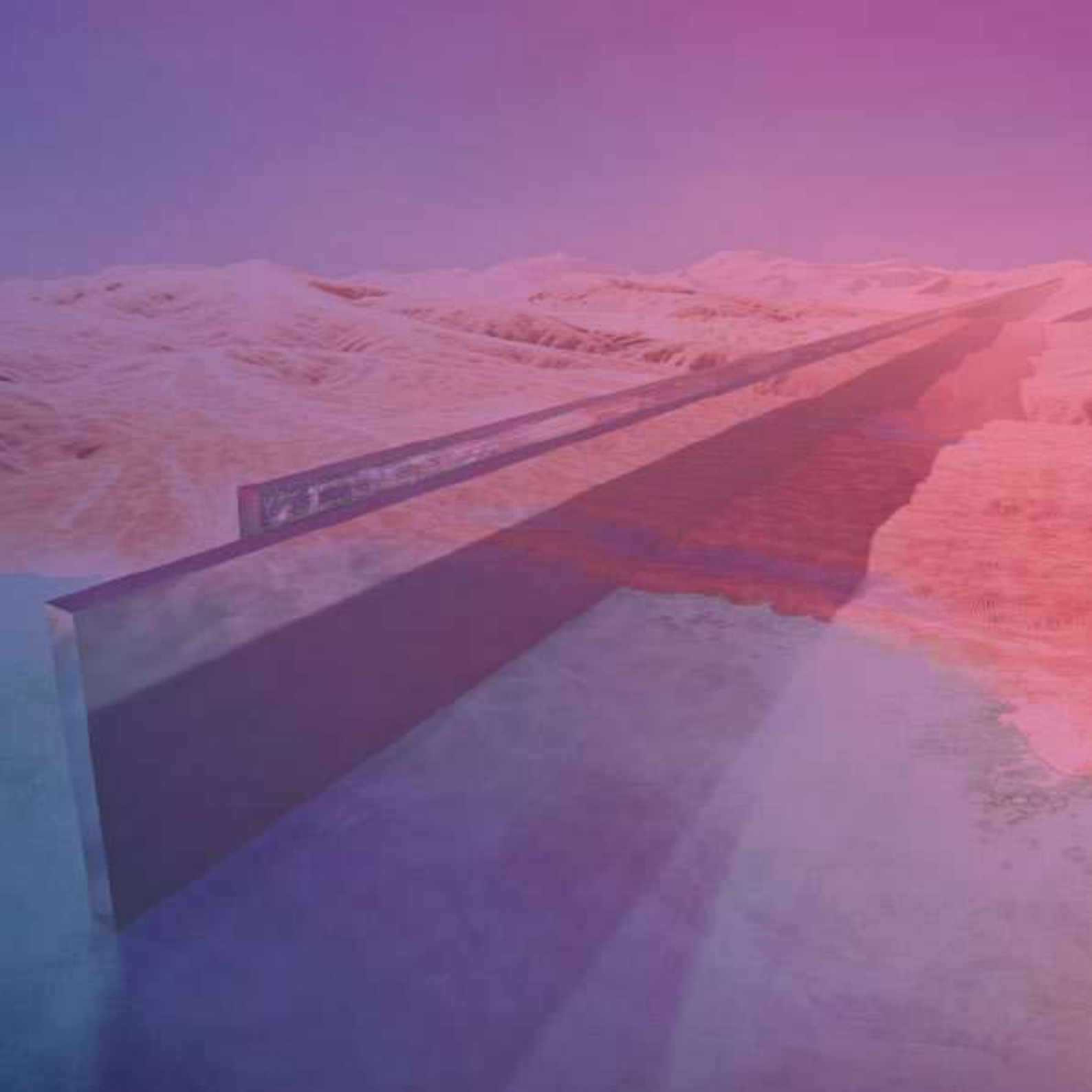


"We are living in a time of scientific innovation, unprecedented technology, and unlimited growth prospects. These new technologies, such as Artificial Intelligence and the Internet of Things, if used optimally, can spare the world many disadvantages and can bring enormous benefits to the world."

His Royal Highness
Prince Mohammed bin Salman bin Abdulaziz Al Saud,
Crown Prince, Prime Minister of the Kingdom of Saudi Arabia

EXECUTIVE SUMMARY

Saudi Arabia is rapidly positioning itself as a global leader in artificial intelligence (AI) as part of its transformative Vision 2030. At the heart of this transformation is the establishment of the Saudi Data & AI Authority (SDAIA) in 2019 to drive the national agenda for data and AI. Its mandate includes driving AI adoption across government entities, raising public awareness, and ensuring strategic use of data and AI technologies throughout the Kingdom. These efforts aim to leverage AI technologies to drive economic growth, improve public services, and enhance the quality of life for all citizens, guiding the nation toward a technically advanced and data-driven future.

This report provides a snapshot of AI progress in Saudi Arabia. It highlights its **global recognition** in AI and discusses **seven key pillars: regulations and policies, investment, infrastructure, data, talent development, research and innovation, and adoption.**

GLOBAL RECOGNITIONS

1ST

place globally in the pillar of government strategy for AI.
The Global AI Index - Tortoise, 2023

WSIS PRIZE 2024

for Estishraf platform and National Data Bank under the role of the government and all stakeholders in the promotion of ICTs for development.
ITU WSIS, 2024

EXCELLENCE CERTIFICATE

for the "Elevate" AI training program under the category of capabilities development.
ITU WSIS Forum, 2024

MEMBER OF THE UN AI ADVISORY BODY

with a vision of more governed, ethical, and responsible use of AI.
United Nations, 2023

POLICIES AND REGULATIONS

14

regulations and policies related to data and AI published by SDAIA.

245

The total number of established data management offices in the public sector until 2024.

INVESTMENT

59%

The CAGR of government spending on emerging technologies services, including AI, from 2019 to 2023.

$1.7 BILLION

The total attracted funds in AI Saudi companies in 2023.

INFRASTRUCTURE

2ND

largest country in the Middle East region in terms of the number of colocation data centers, with **22** active ones and **40** more under development.

30%

The total growth in Saudi Arabia's public cloud services market in 2023 compared to 2022.

10

supercomputers established in Saudi Arabia, **8** of which are ranked among the top 500 globally.

DATA

320+

government systems integrated in NDB National Data Lake, resulting in **100TB+** of total stored data volume provided by **60+** government entities.

8.7K+

datasets hosted in the NDB Open Data Platform from **249+** government and private entities.

TALENTS AND HUMAN CAPABILITIES

75%

of the Saudi population is knowledgeable about the concept of AI, and **64%** are knowledgeable about AI use cases and their applications.

86%

of Saudi universities offer bachelor's degree programs related to AI, with **42%** of offering AI-focused programs.

38K+

The total number of graduates with AI-related degrees, e.g., computer science, from 2019 to 2023.

51%

The annualized growth rate of workers with AI skills in the Saudi Arabia from 2018 to 2022.

RESEARCH AND INNOVATION

45%

The annualized growth rate in AI scientific publications from 2019 to 2023.

50%

The annualized growth rate in AI patents from 2019 to 2023.

ADOPTION

39%

of Saudi government entities are using or experimenting with AI.

81%

of Saudi government entities using or experimenting AI reported that AI has significantly enhanced their service delivery.

FUTURE PREDICTION

12%

The estimated AI contribution to Saudi Arabia's GDP from AI by 2030.

29%

The CAGR of the AI market in Saudi Arabia until 2030.

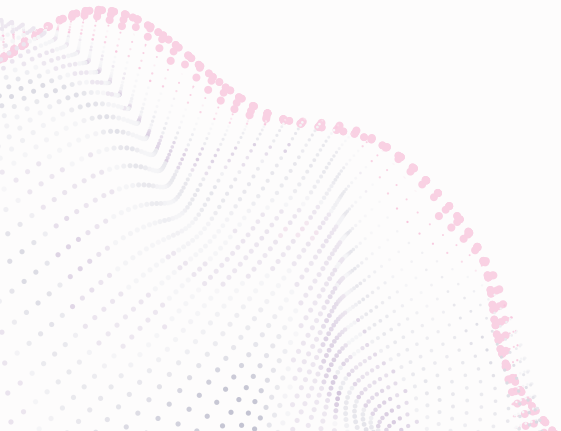


TABLE OF CONTENT

1. INTRODUCTION

In today's rapidly evolving technological landscape, Artificial Intelligence (AI) is not just a tool but a driving force behind global innovation and growth. **AI—which focuses on creating systems that perform tasks requiring human intelligence, such as learning, reasoning, and self-improvement—**has evolved significantly since its inception in the mid-20th century, making remarkable progress driven by advancements in computer capabilities and data availability. AI has continuously expanded the horizons of its capabilities and applications and has become an essential tool in most daily activities and business operations.

Accordingly, AI has captured global attention due to its potential contributions to enhancing economic performance, increasing productivity, reducing costs, and improving the efficiency of products and services across various sectors. As studies predict, AI is expected to add **$15.7 trillion** (about SAR 58.9 trillion) to the global economy by 2030[1]. On a sectoral level, AI applications could cut **5% to 10%** of healthcare sector expenses annually[2], while AI-powered smart cities could improve urban living through intelligent traffic management and optimized energy consumption.

Recognizing the massive potential of AI, Saudi Arabia, under its ambitious Vision 2030, aims to fully leverage AI capabilities to become a leader in data-driven economies. To achieve this, Saudi Arabia established the Saudi Data & AI Authority (SDAIA) in 2019 to achieve its National Strategy for Data & AI (NSDI) launched in 2020, driving the national AI transformation and ensuring the Kingdom's global leadership in this field.

[1] S. Rao, Dr. A., Verweij, G., Morrison, A. & Lix, B. Global Artificial Intelligence Study: Sizing the Prize. https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf. (2017).

[2] Sahni, N., Stein, G., Zemmel, R. & Cutler, D. M. The Potential Impact of Artificial Intelligence on Healthcare Spending. (National Bureau of Economic Research, Cambridge, Mass, 2023).

This report aims to provide an overview of the state of AI in Saudi Arabia, highlighting the progress made over the past five years, from 2019 to 2023. It examines **Saudi Arabia's global recognition** related to AI. Additionally, the report analyzes the progress across the following **seven key pillars** (Figure 1):

FIGURE 1: PILLARS OF SAUDI ARABIA STATE OF AI

POLICIES AND REGULATIONS

Legal and policy frameworks supporting AI development and use, covering personal data protection, data privacy and management, intellectual property, and AI ethics.

INFRASTRUCTURE

Technical resources required to support sustainable AI systems development and operation, including data centers, cloud computing, and high-performance computing.

TALENT AND HUMAN CAPABILITIES

Public AI awareness, AI-focused education opportunities, and a skilled workforce are crucial for driving AI innovation and adoption.

ADOPTION

The current level of AI usage across sectors nationwide, with an analysis of AI impact and implementation challenges.

INVESTMENT

Financial allocations from both the government and private sector to promote AI readiness, innovation, and adoption.

DATA

Availability, quality, and governance of data essential for AI, emphasizing practical management, standardization, and the development of national datasets.

RESEARCH AND INNOVATION

Activities and efforts related to research and technological innovation in AI, including scientific publications and patent acquisitions.

2.GLOBAL RECOGNITIONS

Saudi Arabia has made remarkable progress in AI thanks to its wise leadership and continuous support. This advancement results from dedicated efforts and ambitious strategies implemented to enhance the use of AI across various sectors. Key initiatives include enhancing digital infrastructure, supporting data readiness, promoting research and innovation, and raising public awareness of AI. As a result, Saudi Arabia has had several global recognitions related to AI, including **indices, certificates, awards,** and **acknowledgments**.

2.1 INTERNATIONAL INDICES

1ST

place globallyin the pillar of government strategy for AI.
The Global AI Index - Tortoise, 2023

2ND

place in MENA government readiness for AI implementation in public services delivery.
Oxford AI Readiness Index, 2023

FULL SCORE

in open government data along with **10** other countries—out of **193** countries—by United Nations.
OGDI, 2022

2ND

place globally in terms of positivity and optimism towards AI products and services.
Stanford AI Index, 2023

5

of Saudi Arabia's cities are among the top **100** smart cities around the world.
IMD Smart City Index - SCI, 2024

25TH	52ND	55TH
Riyadh	Makkah	Jeddah

74TH	99TH
Medina	Al-Khobar

2.2 CERTIFICATIONS

ISO 42001 CERTIFICATION

for excellence in AI management systems at SDAIA.

ISO, 2024

EXCELLENCE CERTIFICATION

for SDAIA's "AI Ethical Principals" project under the category of ethical dimensions of information and knowledge societies.

ITU WSIS Forum, 2024

EXCELLENCE CERTIFICATION

as a champion project for MOMRAH's "Balady – Digital City Platform"—an AI-powered platform for providing digital and analysis services to citizens—under the media category.

ITU WSIS Forum, 2023

EXCELLENCE CERTIFICATION

as a champion project for SDAIA's National Data Bank under the access to information and knowledge category.

ITU WSIS Forum, 2023

EXCELLENCE CERTIFICATION

for SDAIA's "Elevate" AI training program under the capabilities development category.

ITU WSIS Forum, 2024

EXCELLENCE CERTIFICATION

as a champion project[3] for MEWA's "Vegetation Intelligent Analysis System" under the e-agriculture category.

ITU WSIS Forum, 2023

TIER III INTERNATIONAL ACCREDITATION CERTIFICATE

for NIC-SDAIA's data centers due to applying best practices in the field of data centers and compliance with specified standards.

Uptime Institute, 2023

[3] Champion Project: Among Top five ranked Projects

2.3 AWARDS

WSIS PRIZE 2024

for Estishraf platform and National Data Bank under the role of the government and all stakeholders in the promotion of ICTs for development.
ITU WSIS, 2024

1ST PLACE

globally for winning the largest number of medals in AI global competition for youth.
WAICY, 2023

18

winning projects with **11** of them awarded gold medals, and others awarded silver and bronze ones.

EXCELLENCE AWARD AND GOLDEN SHIELD

in innovation in digital transformation for efforts to advance digital solutions and integrate AI and data analysis techniques in GOSI's customer service.
InsureTek, 2024

INNOVATIVE AWARD

for National Data Bank received in data privacy and governance in the Middle East.
Informatica, 2022

BEST PROJECT AWARD

for National Data Bank received from Project Management Institute in the technical projects category.
PMI, 2022

2.4 ACKNOWLEDGMENT

CATEGORY 2 STATUS

for the International Center for AI Research and Ethics (ICAIRE) headquartered in Riyadh.
UNESCO, 2023

MEMBER OF THE UN AI ADVISORY BODY

with a vision of more governed, ethical, and responsible use of AI.
United Nations, 2023

3. POLICIES AND REGULATIONS

Recognizing data as the fuel for AI, Saudi Arabia has established robust foundational data governance policies. The **Personal Data Protection Law**, issued by SDAIA, forms the cornerstone of these efforts, protecting personal data privacy and subjects' rights in data handling. SDAIA has also introduced the **National Data Index (NDI)** to measure data management maturity and operational excellence in government entities. To further support data governance, the **National Data Governance Platform** focuses on managing and governing data while protecting personal information. Additionally, SDAIA has established **data management offices** to enhance data quality, monitor compliance, and develop data management capabilities. Complementing these efforts, the National Cybersecurity Authority (NCA) has launched **Data Cybersecurity Controls,** which further strengthen data protection measures.

These efforts proactively set the stage for responsible and innovative AI integration in Saudi Arabia. In September 2023, SDAIA introduced **AI Ethics Principles** developed by analyzing global best practices and standards. These principles focus on governing data and AI models to mitigate potential risks and ensure responsible AI usage. Supporting AI responsible implementation, SDAIA launched the **AI Ethics Assessment tool** that helps entities evaluate their adherence to ethical standards in AI development and application. This tool identifies potential risks and assesses their impact and ethical commitment across various principles. In the context of Generative AI, SDAIA issued **Generative AI Guidelines** early in 2024, designed for both government entities and the general public. These guidelines provide a robust framework for the responsible use of generative AI systems, highlighting challenges, proposing ethical use principles, and recommending best practices.

The AI ecosystem in Saudi Arabia is further supported by existing legal frameworks such as the Saudi Authority for Intellectual Property's (SAIP) **intellectual property legislation** and the National E-Learning Center's (NELC) **National Framework for AI in Digital Learning.**

Collectively, these policies and guidelines ensure that AI advancements in the Kingdom align with principles of privacy, security, and ethical use, safeguarding people's rights while fostering innovation.

HIGHLIGHTS

245

The total number of established data management offices until 2024.

10

The total number of regulation documents issued, with **3** specifically for AI.

PERSONAL DATA PROTECTION LAW (PDPL)

aims to protect personal data privacy and the rights of data subjects, including regulating personal data transfer outside the Kingdom.

4

published data policies including classification, sharing, open data, and freedom of information.

NATIONAL DATA INDEX (NDI)

aims to measure data management maturity, standards, and operation excellence in governmental entities.

NATIONAL DATA GOVERNANCE PLATFORM

offers **3** services and **4** tools for guiding and assessing personal data protection compliance and evaluating AI ethics.

4. INVESTMENT

The global race for AI supremacy is accelerating, with many countries striving to meet ambitious goals. While some may lag, focused investments in AI in areas like research and innovation, talent development, and infrastructure can transition nearly any country to the forefront.

At LEAP 2023, Saudi Arabia exemplifies this potential transformation, with **$42+ billion** (approximately SAR 157 billion) active investment in digital[4]. This commitment was further underscored when Saudi Arabia's tech sector attracted an additional **$9.5 billion** (approximately SAR 35.66 billion) to support future technologies, digital entrepreneurship, and tech startups, marking a significant achievement for the industry. These investments solidify the country's position as the largest digital market in the MENA region.

In line with Saudi Arabia's Vision 2030, which aims to diversify the economy and foster innovation across various sectors, both **government and private** sectors are making significant strides in AI adoption and development. This progress is supported by strategic investments, targeted initiatives, and partnerships with local and global technical firms and research institutions. For instance, Zoho has invested **$100+ million** (approximately SAR 375.22 billion) to support the growth of the Small and Medium Enterprise (SME) sector, educate and train the workforce, and build partnerships with big entities such as the Ministry of Communications and Information Technology (MCIT) and Monsha'at[5].

[4] LEAP. Leap Forward Issue#1. https://shorturl.at/zjpF9 (2023).

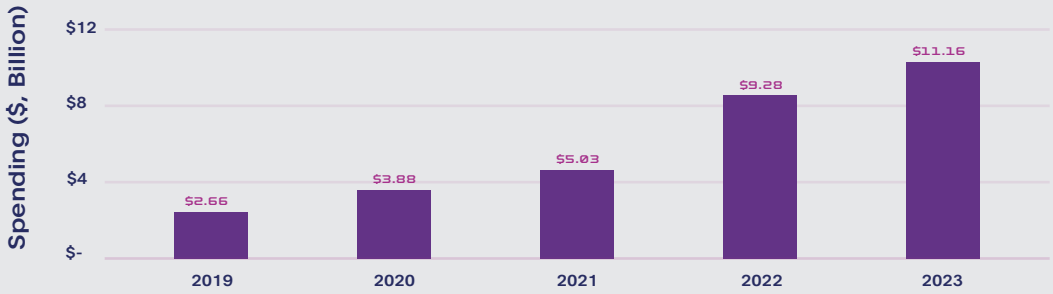
[5] LEAP. Leap Forward Issue#02. https://shorturl.at/bv7AR (2024).

4.1 GOVERNMENT

Government AI spending is crucial to driving innovation, economic growth, and improving public services. It also leads to building essential infrastructure, supporting education and research, and encouraging private sector involvement, ultimately positioning the nation for success in the global tech landscape.

The Saudi government has significantly increased its technology investments in recent years. AI spending is integrated within the broader ICT budget, reflecting its integral role in the overall technology investment strategy. From 2019 to 2023, ICT spending grew at a CAGR of **27%**, resulting in total cumulative spending of nearly **$32 billion** (SAR 120.2 billion)[6] (Figure 2). This continued with ICT's 2024 allocated budget of approximately **$10 billion** (SAR 38 billion) for infrastructure and transportation development, including AI advancements[7].

FIGURE 2: TOTAL ICT GOVERNMENT SPENDING 2019-2023



Source: Digital Government Authority (DGA) (Government ICT Spending 2023)

[6] DGA. Government ICT Spending Report in Saudi Arabia 2023 AD. https://shorturl.at/5Hn4E (2024).
[7] Budget Statement 2024. https://www.mof.gov.sa/en/budget/2024/Documents/Bud-E%202024%20F4.pdf (2024).

Saudi Arabia's commitment to building a robust AI ecosystem, led by the Public Investment Fund (PIF). PIF's portfolio and invested companies actively integrate AI-powered systems like Riyad Bank, Lean, and ACWA Power, as well as AI-focused companies such as SCAI. Additionally, it established Alat to create a national champion that positions the Kingdom as a global hub for sustainable technology manufacturing, focusing on advanced technologies and electronics.These efforts are complemented by Saudi Arabis' investments in AI infrastructure. The acquisition of 3K+ NVIDIA Graphical Processing Units (GPUs) by entities including SDAIA and KAUST, bolsters its AI computing capabilities.

Beyond infrastructure, Saudi Arabia diversified its AI investments through various government initiatives and programs. The NEOM project, for instance, has invested **$100 million** (approximately SAR 375 million)[8] in pony.ai for autonomous vehicle development. Also, at Leap 2024, Saudi Arabia announced its plan to invest **$6.4+ billion** (approximately SAR 24 billion) to boost next-generation technologies and entrepreneurship[9].

To encourage AI startups, the government has established multiple incubators and accelerator programs, including King Abdulaziz City for Science and Technology's (KACST) the Garage incubator, King Abdullah University of Science and Technology's (KAUST) Taqadam accelerator, SDAIA's ROWAD Package, and the GAIA accelerator by SDAIA and the National Technology Development Program (NTDP). GAIA—the world's first generative AI early-stage accelerator—committed **$200+ million** (approximately SAR 750.4 million) to transform innovative ideas in AI into successful businesses.

[8] NEOM Investment Fund Invests USD 100M in Pony.ai to Activate Autonomous Vehicles in NEOM and across the Middle East. https://www.neom.com/en-us/newsroom/neom-investment-fund-invests-in-pony-ai. (2023).
[9] LEAP, Leap Forward Issue#1. https://shorturl.at/zjpF9 (2023).

HIGHLIGHTS

$226.5 MILLION

The total government investment amount in emerging technologies services, including AI, with a CAGR of **59%** from 2019 to 2023[10].

$53.3 MILLION

The amount of the MCIT investment invested in the Technology Champions Program, which aims to boost Saudi tech companies, including AI companies[11].

$149.3 MILLION

The cumulative investment in cloud computing infrastructure for both services and custom-made cloud software reflects a CAGR of approximately **84%** from 2019 to 2023[10].

[10] DGA. Government ICT Spending Report in Saudi Arabia 2023 AD. https://shorturl.at/5Hn4E (2024)
[11] LEAP. Forward Issue#02. https://shorturl.at/bv7AR (2024)

4.2. PRIVATE

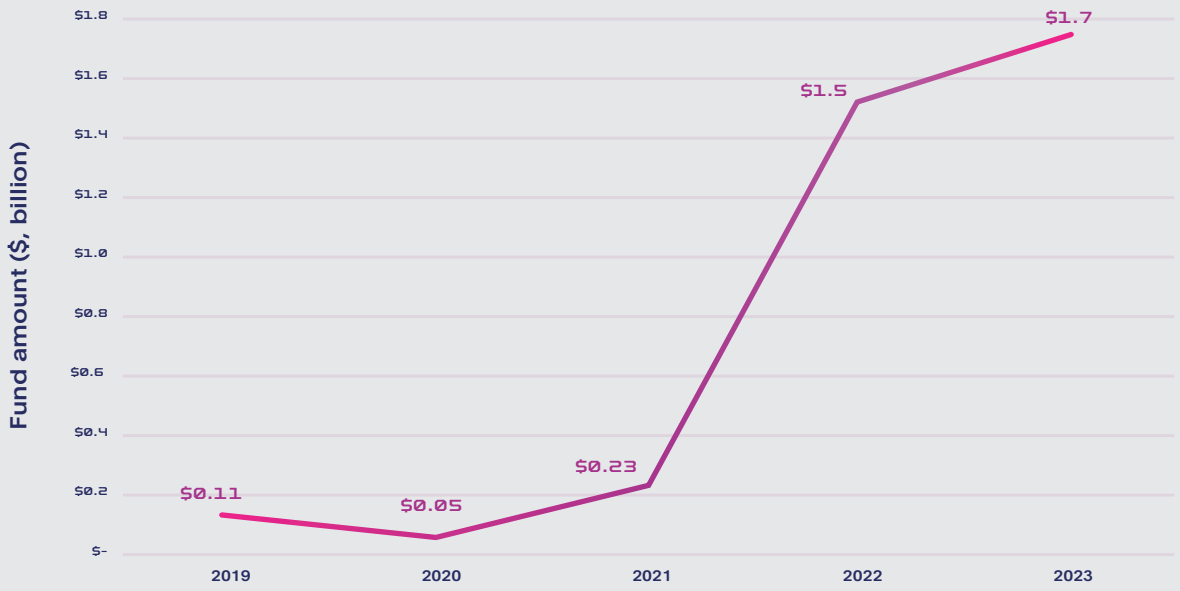
The private sector is crucial in advancing AI technology and driving innovation. By injecting capital into the AI ecosystem, it enables the growth of startups and accelerates product development. Recognizing the transformative potential of AI across industries, Saudi Arabia's venture capital (VC) firms have significantly increased their investments in recent years to support the development of AI solutions.

Saudi Arabia VC firms show a high interest in investing in emerging technologies, including AI. Key VC investors in the Kingdom include Saudi Aramco Entrepreneurship Venture (Wa'ed), Raed Venture, and Shorooq Partners, where collectively they made **42 deals** in AI companies both globally and locally by August 2024[12]. An example of these dealsis Wa'ed leading investment of **$9 million** (around SAR 33.8 million) in SpiderSilk[13], a cybersecurity threat detection and management platform utilizing AI, in 2023.

Saudi Arabia's AI companies ecosystem has shown remarkable growth, with the number of AI companies increasing from **177** in 2019 to **242+** in 2023[14]. Within 2023 only, AI Saudi companies attracted a total fund of **$1.7+ billion** (around SAR 6.3 billion) (Figure 3). This represents a **14%** increase compared to 2022, underscoring the growing confidence among investors in Saudi Arabia's AI ecosystem.

[12] Top 50 Artificial intelligence VC Funds in Saudi Arabia — Aug 2024. Shizune https://shizune.co/investors/artificial-intelligence-vc-funds-saudi-arabia (2024).
[13] LEAP. Leap Forward Issue#02. https://shorturl.at/bv7AR (2024).
[14] Crunchbase. Crunchbase, (Advanced Search | Companies). https://www.crunchbase.com/discover/organization.companies (2024).

FIGURE 3: TOTAL OF SAUDI AI COMPANIES' RECEIVED FUND 2019-2023



Source: Crunchbase (IPO Status= Private, and Delisted, Industry Group= AI)

Global tech giants have also shown keen interest in AI Saudi ecosystem. Companies like Oracle have invested **$1.5 billion** (around SAR 5.6 billion) in launching a public cloud region in Saudi Arabia[15]. In addition, SenseTime Group partnered with SCAI through a joint venture of nearly **$206.8 million** (SAR 776 million) to build an AI lab and create highly skilled jobs for Saudi talents[16]. On the other hand, Saudi Aramco invested **$108 million** (around SAR 405 million) in PASQAL—a quantum technology provider, and **$3.4 million** (around SAR 12.8 million) in the Egyptian AI startup Intella.

[15] Bhatnagar, G. Oracle Strengthens Saudi Arabia's AI Economy with Opening of Second Public Cloud Region. Oracle Middleeast https://www.oracle.com/news/announcement/oracle-strengthens-saudi-arabias-ai-economy-with-opening-of-second-public-cloud-region-2024-08-06/(2024).
[16] SCAI Invests in Joint Venture with SenseTime to Deliver Innovative AI-powered Solutions across MEA Region. https://spa.gov.sa/ (2023).

Saudi Arabia AI accelerators have also played a crucial role. GAIA, for example, funded **15 generative AI startups** from various industries, including education, business, food, and gaming[17]. On the other hand, Taqadam accelerator supported **22 AI startups**, **17** of which were local companies[18].

HIGHLIGHTS

$1.7 BILLION

The total attracted funds in AI Saudi companies in 2023[19].

37%

The growth rate in the number of AI Saudi companies between 2019 and 2023[19].

$20 BILLION

The total investment Saudi Arabia targets to attract in AI by 2030[20].

[17] GAIA. Cohort 3 Startups. https://gaia.newnative.ai/gaia-cohorts/cohort-3-startups (2024).
[18] Taqadam Startup Portfolio. https://taqadam.pory.app/taqadam-startup-portfolio (2024).
[19] Crunchbase (IPO Status= Private, and Delisted, Industry Group= AI).
[20] NSDAI, https://ai.sa/Brochure_NSDAI_Summit%20version_EN.pdf (2020).

5. INFRASTRUCTURE

Saudi Arabia recognizes that robust infrastructure is crucial for AI development, implementation, and deployment. To build such infrastructure, Saudi Arabia focuses on three key pillars: **Data center capacity, high-performance computing capabilities, and scalable cloud computing services.** These elements work in concert to create an ecosystem capable of supporting complex AI applications, from smart city initiatives to groundbreaking researh fields like healthcare and energy.

Various entities are leading efforts to develop robust infrastructure by collaborating with global tech providers such as NVIDIA and IBM. SDAIA and KAUST are leading the efforts in the public sector, while in the private sector, companies like Saudi Aramco and STC are making strides by investing heavily in AI infrastructure.

However, these efforts need further attention to create a more scalable AI infrastructure. According to SDAIA's survey, **28%** of government entities believe they have an AI infrastructure in place[21]. Similarly, Cisco's AI Readiness Index indicates that only **22%** of private sector businesses in Saudi Arabia own a highly scalable infrastructure[22].

[21] SDAIA Readiness & Adoption Survey, n=80. (July 2024)

[22] Cisco. Cisco AI Readiness Index - Saudi Arabia. https://www.cisco.com/c/dam/m/en_us/solutions/ai/readiness-index/documents/cisco-ai-readiness-index-saudi-arabia.pdf (2024).

5.1. DATA CENTERS

Acknowledging the importance of data for AI development, Saudi Arabia has significantly expanded its data center capabilities. MCIT has introduced various initiatives that directly or indirectly impact the Saudi data center market. These initiatives include increasing connectivity bandwidth, providing digital entrepreneurship support, and more. Moreover, related regulatory policies have been announced by multiple authorities since 2017 by entities like the Communications, Space & Technology Commission (CST), the Saudi Central Bank, MCIT, the National Cybersecurity Authority, and SDAIA.

As a result, Saudi Arabia currently hosts **22 active colocation data centers**[23]. The capacity of the kingdom's data centers increased to **204MW** in 2023 compared to **122.4MW** in 2022, with **45%** located in Riyadh[24] (Figure 4). Government entities like SDAIA, CST, the State Properties General Authority (SPGA), MOE, DGA, and Princess Nourah bint Abdulrahman University (PNU), along with data center investors such as STC and Tamasuk, have collaborated to achieve this increase. According to IDC, **15%** of the live data centers in the kingdom fall under hyperscale data centers, while **58%** of them are classified as large[25].

This capacity is expected to expand even more, specifically with the major expansions underway. For instance, STC's Center3 is expanding its capacities by **9.6MW**, while DAMAC data center plans to deliver a capacity of **55MW** by 2025[26], ensuring robust storage and processing capabilities for advanced AI applications.

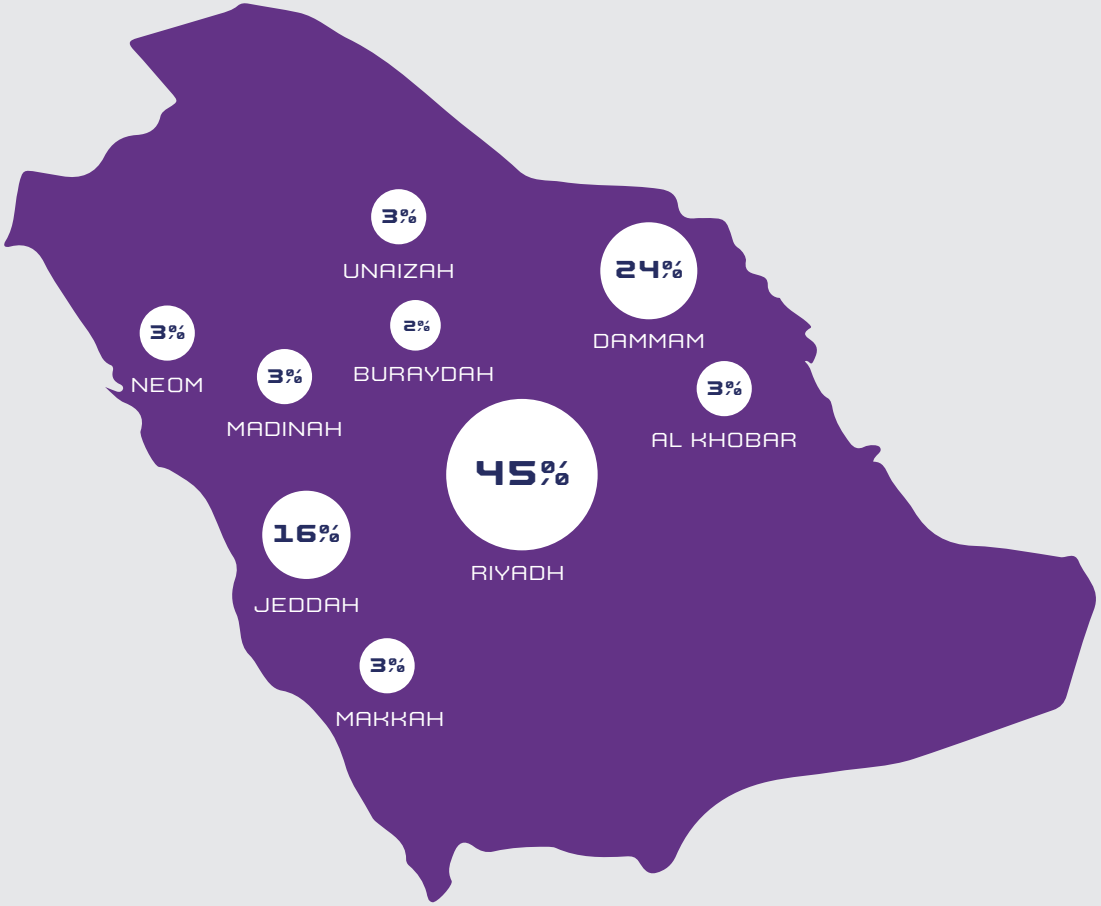
[23] Ahmed, F. & Al Saraeji, Z. Unleashing the Potential: The Future of Data Centres in The Middle East and Africa. https://argaamplus.s3.amazonaws.com/d96e6f66-ad76-45b8-8e4f-20fe746124b9.pdf (2023).

[24] Hashim, S. The State of Datacenters in Saudi Arabia: An Overview of the Current Landscape and Future Direction. (2024).

[25] Note: Hyperscale DCs = 6–199 MW; large DCs = 1–5.99 MW; midsize DCs = 15–999 KW

[26] DAMAC Group. DAMAC Group Accelerates Kingdom of Saudi Arabia Data Centre Roadmap and will Go Live with Facilities in Dammam and Riyadh in 2023. https://www.damacgroup.com/en/article/damac-group-accelerates-kingdom-of-saudi-arabia-data-centre-roadmap-and-will-go-live-with-facilities-in-dammam-and-riyadh-in-2023/ (2023).

FIGURE 4: DATACENTERS CAPACITY DISTRIBUTION IN SAUDI ARABIA



Source: IDC

HIGHLIGHTS

2ND

largest country in the Middle East region in terms of the number of colocation data centers, with **22** active ones and **40** more under development[27].

1300 MW

The targeted data center capacity by 2030[28].

28%

increase in data center capacity in 2023 compared to 2022[28].

[27] Ahmed, F. & Al Saraeji, Z. Unleashing the Potential: The Future of Data Centres in The Middle East and Africa. https://argaamplus.s3.amazonaws.com/d96e6f66-ad76-45b8-8e4f-20fe746124b9.pdf (2023).

[28] MCIT. Saudi Arabi: Leadership of Digital Economy in the Middle East. https://www.mcit.gov.sa/sites/default/files/2023-03/MCIT_DEC_23_En_V7.pdf (2023).

5.2. CLOUD COMPUTING

Saudi Arabia aims to become a regional leader in cloud computing as part of its digital economy strategy. The government, led by MCIT, has launched an **$18 billion** plan and introduced the **Cloud Computing Regulatory Framework (CCRF)** to encourage cloud investment and protect consumers. Additionally, led by CST, a **Cloud Computing Special Economic Zone** was launched in 2023 to support the growth of digital technologies in Saudi Arabia across sectors, including data and AI[29]. These efforts seek to accelerate cloud adoption, attract international investments, and develop local talent and innovation in the cloud sector.

As of 2023, the Kingdom has successfully increased the number of Cloud Service Providers (CSPs) registered in the CST to **29.** However, few of them provide AI services. Global tech giants such as Oracle, Google Cloud, Alibaba Cloud, and SAP are establishing cloud regions in the country through strategic joint ventures with local telcos, resellers, and partners. Simultaneously, local providers like STC, SITE, and Cloud4C are strengthening the domestic cloud ecosystem (Figure 5).

FIGURE 5: TOP CLOUD SERVICE PROVIDERS IN SAUDI ARABIA

GLOBAL	Alibaba Cloud, Google Cloud, HUAWEI, HUAWEI CLOUD, ORACLE, SAP
REGIONAL	kalaam, RAYA, زين zain, zain
LOCAL	CLOUD4C A CtrlS Company, السحابة الحكومية, موبايلي mobily, NOURNET Driving Digital Innovation, stc

Source: CST

[29] The Kingdom of Saudi Arabia: Investing in Saudi Arabia's Special Economic Zones. https://sez.ecza.gov.sa/pdf/ECZA%20Brochure%20ENGLISH.pdf (2023).

On the other hand, SDAIA launched a government cloud platform, DEEM, in 2018. It provides secure, reliable, and scalable cloud services for government and semi-government entities. DEEM notable achievements include merging **248+ data centers**, delivering services to **185 government entities**, providing **51 cloud services,** and generating a financial impact of savings of **$1.5 billion** (around SAR 5.6 billion) through its hosting services.

These initiatives are driving the adoption of cloud services and AI across various sectors, including healthcare, transportation, and finance. For instance, the Ministry of Health (MOH) leveraged cloud platforms to develop a chatbot hosted on Oracle Cloud Infrastructure during the COVID-19 pandemic[30], and the King Abdullah International Medical Research Center (KAIMRC) uses cloud-based high performance computing to power research into infectious disease treatments[30].

HIGHLIGHTS

30%

The total growth in Saudi Arabia's public cloud services market in 2023 compared to the previous year[31].

40%

yearly increase in the recorded number of issuances of cloud computing permits[32].

8

The total number of public cloud regions in Saudi Arabia established by global cloud service providers[33].

[30] CST. Cloud Computing: Technology Overview and Market Outlook. https://www.cst.gov.sa/ar/mediacenter/researchsandstudies/Documents/Cloud_Computing_Technology_Overview_and_Market_Outlook.pdf (2023).

[31] Mujtaba, U., Shiekh, A. S. & Ranjan, M. Saudi Arabia Public Cloud Services Market Shares. https://www.idc.com/getdoc.jsp?containerId=META51755624&pageType=PRINTFRIENDLY (2024).

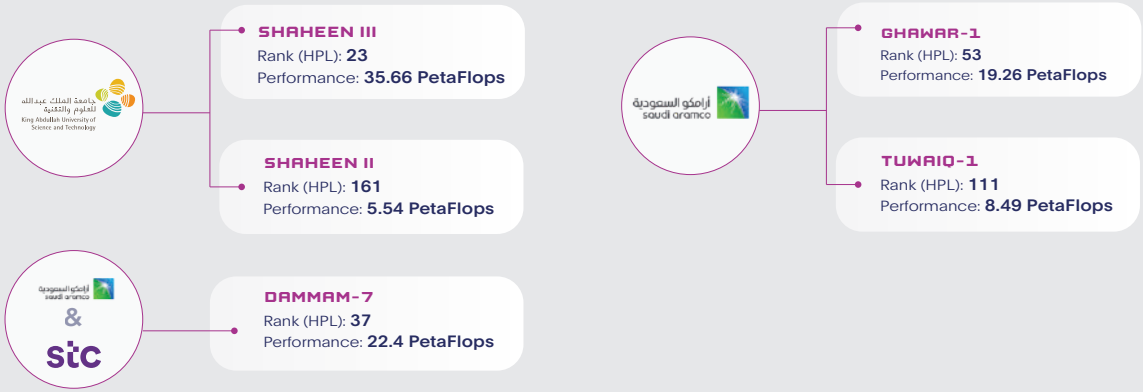
[32] The rise and rise of cloud computing in Saudi Arabia. MIT Sloan Management Review Middle East https://www.mitsloanme.com/article/the-rise-and-rise-of-cloud-computing-in-saudi-arabia/ (2024).

[33] Xalam. Xalam Public Dashboard - Public Cloud Tracker. Xalam Analytics https://xalamanalytics.com/xalamdashboards/xalam-public-cloud-tracker/ (2024).

5.3. HIGH PERFORMANCE COMPUING

Saudi Arabia is rapidly expanding its supercomputing infrastructure, which is crucial for AI development and research. The Kingdom established **ten supercomputers** around the country, **eight** of which are ranked among the top 500 globally[34]. For example, **Shaheen III**, operated at KAUST, is ranked **23rd** among the worldwide supercomputer in 2024, making it the most powerful supercomputer in the Middle East. Indeed, Shaheen III has an upgraded performance **6x faster** than KAUST's existing Shaheen II. On the other hand, Aramco is leading the Kingdom's organizations in acquiring **six different supercomputers**, with **Dammam-7** as the **2nd** most powerful supercomputer in Saudi Arabia (Figure 6).

FIGURE 6: TOP RANKED SUPERCOMPUTERS IN SAUDI ARABIA



Source: Top500, June 2024

[34] June 2024 | TOP500. https://top500.org/lists/top500/2024/06/. (2024).

Additionally, the Kingdom is investing heavily in GPUs, with KAUST ordering **2.8K GH200 Nvidia GPUs** in 2022 and **500+ H100 Nvidia GPUs** acquired by SDAIA to bolster AI computing power. All these supercomputing resources aim to support driving research, innovation, and industrial applications, aligning with Vision 2030's goals for technological advancement.

HIGHLIGHTS

10

supercomputers established in Saudi Arabia, **8** of which are ranked among the top 500 globally.

SHAHEEN III IS THE 1ST

top-ranked supercomputer in GCC countries.

DAMMAM-7 IS THE 2ND

top-ranked supercomputer in GCC countries.

500+ GPUS

acquired by SDAIA to build "ALLaM Data Center".

6. DATA

Data is the foundation for the development, operation, and success of AI systems. Recognizing this, Saudi Arabia has strongly emphasized data collection and management efforts, making it a key part of its AI plan. Several initiatives have been launched to organize data collection, provision, and management within the country, ensuring it meets quality and privacy standards. SDAIA has played an essential role in these efforts, particularly through its National Data Bank (NDB), which groups several national data platforms to improve data quality and simplify data sharing between entities, e.g., the National Data Lake, the National Data Catalog, and a Collaborative Data Lab.

As part of the NDB, the Open Data Platform hosts **8.7K+ datasets** from **249+ government and private entities**, demonstrating the scale of data collection efforts. The National Data Lake, on the other hand, integrates **320+ government systems**, resulting in **100TB+** of total stored data volume provided by **60+ government entities**. Together, these platforms support AI analytics and decision-making by SDAIA's Estishraf platform.

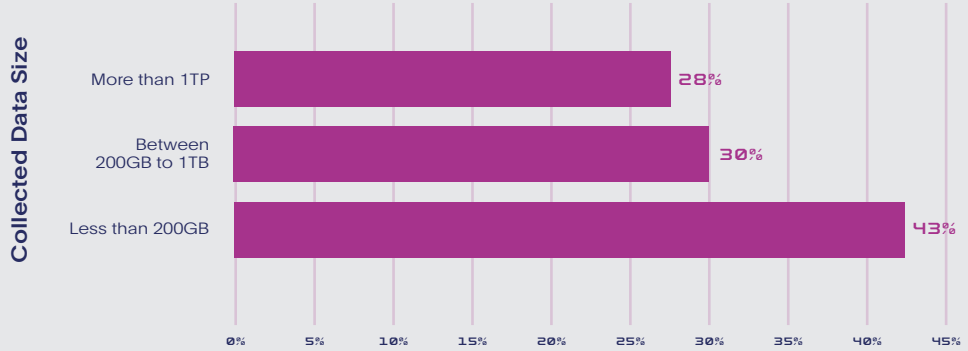
In addition to the above, SDAIA collected a dataset with **500+ billion Arabic tokens** to support Arabic Large Language Models (LLMs) training. Other key contributors to the Saudi data ecosystem include the Ministry of Media's Saudipedia, KAUST, King Abdulaziz Foundation for Research and Archives (DARAH), King Salman Global Academy for Arabic Language (KSAA), and General Authority for Statistics (GaStat).

A recent SDAIA survey provides insights into data collection efforts across government entities. The survey reveals that while most entities are engaged in data collection, only **27.5%** have collected datasets exceeding one terabyte in size[36] (Figure 7). In the private sector, the Cisco AI Readiness Index reveals that **53%** of Saudi respondents positively rated their analytics tools' ability to handle complex AI-related datasets, but only **31%** are at the forefront of progressing well with data readiness[37].

[36] SDAIA Readiness & Adoption Survey, n= 80. (July 2024)

[37] Cisco. Cisco AI Readiness Index - Saudi Arabia. https://www.cisco.com/c/dam/m/en_us/solutions/ai/readiness-index/documents/cisco-ai-readiness-index-saudi-arabia.pdf (2024).

FIGURE 7: SIZE OF DATA COLLECTED FOR AI APPLICATIONS IN GOVERNMENT ENTITIES



Source: SDAIA Readiness & Adoption Survey, n=80

To further enhance data quality and compliance, Saudi Arabia, led by SDAIA, has introduced several data governance guidelines and the NDI—as mentioned in Policies and Regulations, which assesses government entities' data management practices, protection standards, and operational excellence. These initiatives aim to optimize data utilization across sectors, ensuring that data continues to fuel AI advancements effectively.

HIGHLIGHTS

320+

government systems integrated in NDB National Data Lake, resulting in **100TB+** of total stored data volume provided by **60+** government entities.

530+

critical business systems cataloged, and **2.2k+** data standards developed and published within NDB National Data Catalog.

80+

insight reports generated through NDB Collaborative Data Labs that provide a digital environment equipped with state-of-the-art data analysis and AI tools.

420+

subscribable APIs published in NDB Data Marketplace with **10** API patterns to accommodate all data types consumption.

5

guideline documents for effective data governance in NDB Reference Data Platform.

1.2+ MILLION

The total number of visitors to NDB Open Data Platform to date, exploring **8.7K+** published datasets provided by **249+** government and private entities.

7. TALENTS AND HUMAN CAPABILITIES

Saudi Arabia places great importance on developing national talent and enhancing AI skills. Driven by Vision 2030, the Kingdom continues to invest in education and training, equipping its citizens with the skills and knowledge needed for future jobs. Notably, it intends to educate and establish a reservoir of **20K AI and data experts**, including **5K highly qualified AI scientists**, by 2030[38].

To achieve these goals, Saudi Arabia developed a comprehensive approach to build AI capabilities by **raising the public awareness about AI**, providing **AI-specialized education opportunities**, and an **AI workforce in the Saudi market**. Consequently, several initiatives and programs have been launched aimed at inspiring and developing national talent and making them globally competitive in the areas of data and AI.

[38] NSDAI, https://ai.sa/Brochure_NSDAI_Summit%20version_EN.pdf (2020)

7.1. AWARENESS

Recognizing that public understanding of AI is crucial to widespread use in society, Saudi Arabia has launched various initiatives to increase AI awareness among its population. These initiatives include technological publications, AI-focused events, and government initiatives.

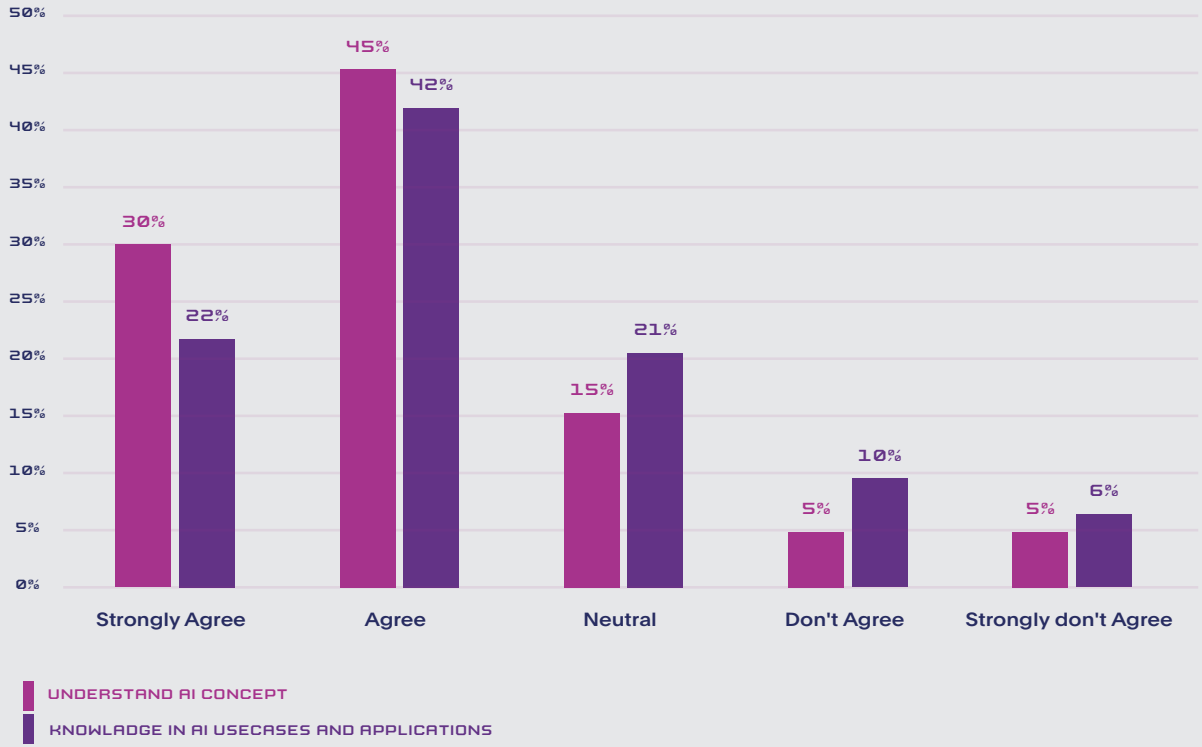
Entities such as SDAIA, CST, DGA, and MCIT are actively publishing AI-related reports and guidelines to educate and raise knowledge about AI. Examples of these diverse publications include the DGA's Generative AI brief, SDAIA's 100+ AI productivity tools, and other AI series guidelines for executive managers.

Several national and international events have been organized in Saudi Arabia, led by SDAIA, such as the **Global AI Summit**, **Global Smart City Forum, AI Artathon, and NEOM Challenge**. The Ministry of Education has also been proactive, organizing and participating in various events to raise awareness for students, teachers, and the community.

In a move to nurture young talent, SDAIA, in collaboration with MOE and Mawhibah, launched ATHKA program—the National Olympiad for Programming and AI. This initiative has engaged **260K+** Saudi middle and secondary school students from **10K+** schools across the Kingdom. Additionally, Saudi Arabia launched under the auspices of UNESCO and the International Center for AI Research and Ethics (ICAIRE), the International AI Olympiad (IAIO), which will be held in September 2024, to discover and nurture global young talent, specifically, high school students, in the AI field.

To estimate the effectiveness of these efforts, SDAIA conducted a comprehensive awareness survey in 2024. Results show that **75%** of the Saudi population is knowledgeable about the concept of AI, and **64%** know about AI use cases and its applications (Figure 8).

FIGURE 8: PUBLIC AWARENESS ABOUT AI AND ITS APPLICATIONS



Source: SDAIA Public Awareness Survey, n=10065, 2024.

HIGHLIGHTS

75%

of the Saudi population is knowledgeable about the concept of AI, and **64%** are knowledgeable about AI use cases and their applications[38].

81%

of the public believe that AI will have a positive impact on both scientific and professional levels[38].

42%

of the public used Generative AI for scientific or professional purposes[38].

621K+

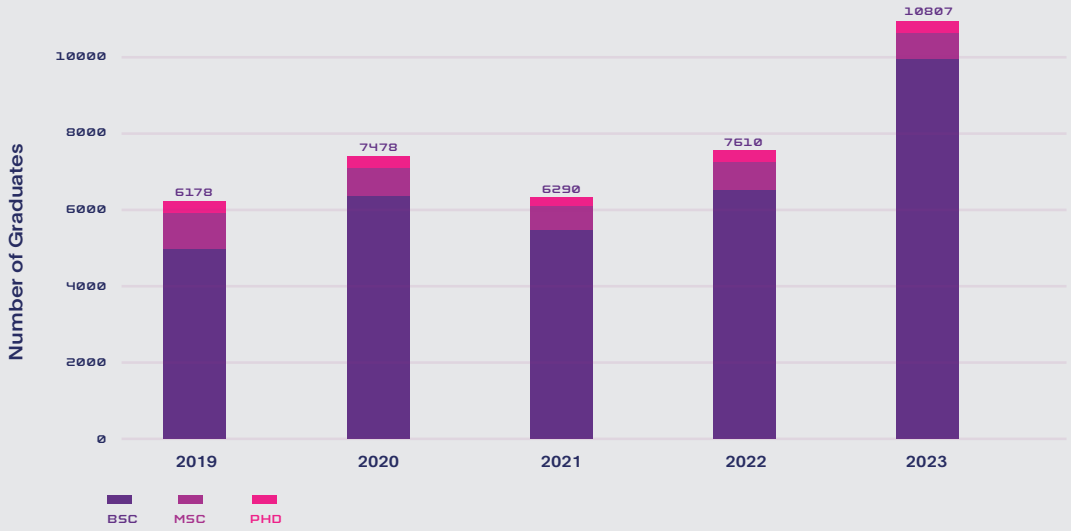
The total number of participants in AI awareness programs launched by SDAIA.

[38] SDAIA Public Awareness Survey, n=10065, 2024.

7.2. EDUCATION

Saudi Arabia has made significant progress in expanding and providing many specialized AI education opportunities across both academic and non-academic grounds. In the realm of academic education, **86%** of Saudi universities offer undergraduate degree programs related to AI, **56%** offer master's degree programs, and only **9%** offer AI-related PhD degrees. These programs include Computer Science, Information Technology, and others, with AI courses integrated within their core curricula. Of these universities, **42%** offer AI-specific degree programs—majors and tracks—at undergraduate and about **44%** at graduate levels. From 2019 to 2023, the number of graduates with degrees related to AI like computer science and computer engineering reached **38K+** graduates, with **6.5K+** of them being abroad graduates (Figure 9). Notably, there was a significant increase of **42%** in graduates between 2022 and 2023, underscoring the growing interest in these fields.

FIGURE 9: NUMBER OF GRADUATES IN AI-RELATED DEGREES 2019-2023



Source: MOE through Estishraf platform, 2023

Beyond academic programs, the Kingdom has launched several specialized academies to foster continuous AI learning and skill development. These include SDAIA Academy, KAUST Academy, TUWAIQ Academy by the Saudi Federation for Cybersecurity, Programming and Drones (SAFCSP), 32 Academy by KACST, MCIT's Future Skills initiative, and MiSK Academy. Together, these institutions are significantly impacting AI education in the Kingdom. SDAIA Academy, in particular, has made notable progress, training **170+ highly qualified AI professionals** and **6.4K+ AI and data experts** by the first quarter of 2024[39].

Complementing these academy-led initiatives, Saudi Arabia has developed strategic partnerships with local and international institutions and tech giants to enhance its AI education offerings further. For example, SDAIA has collaborated with the MOE to launch the Future Intelligence Programmers Program for both students and teachers while partnering with Google for the Elevate program, which aims to train **25K women globally**. Similarly, MCIT has joined forces with Coursera and various government entities, including the Research, Development, and Innovation Authority (RDIA) and NELC, to introduce the Fuel program that aims to train **100K citizens** on digital skills, including AI. These partnerships demonstrate the Kingdom's commitment to leveraging global expertise to build a robust AI talent pool.

[39] AI Experts: Advanced AI skills with ability to develop models, professionals: advanced in AI mechanisms with ability to design innovative AI models

HIGHLIGHTS

38K+

The total number of graduates with AI-related degrees, e.g., computer science, from 2019 to 2023.

40%

The total growth in the number of AI-related bachelor graduates between 2019 and 2023.

86%

of Saudi universities offer bachelor's degrees related to AI.

56%

of Saudi universities offer master's degrees related to AI, and only **9%** of them are offering AI-related PhD degrees.

42%

of Saudi universities offer AI-specific degree programs at the bachelor's level and about **44%** at the master's level.

1 MILLION SAUDI

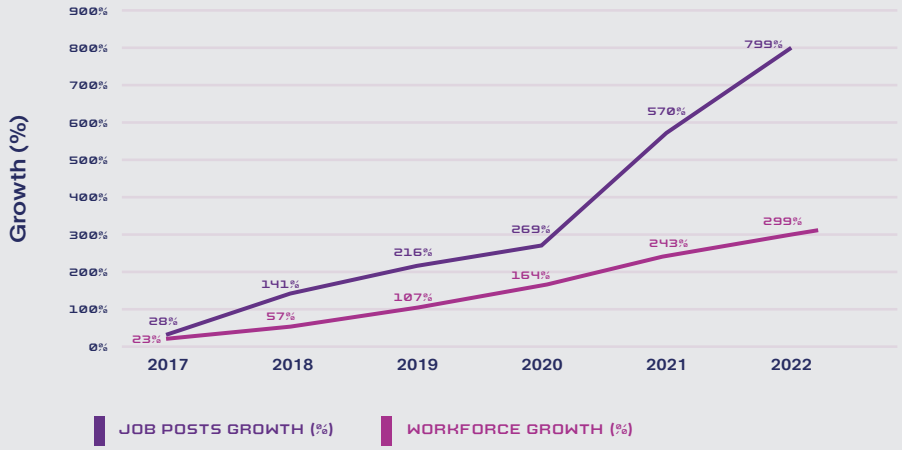
The targeted number of AI skills trainees by 2030 through SDAIA's One Million Saudi initiative launched in 2024.

7.3. WORKFORCE

Over recent years, Saudi Arabia's AI workforce has expanded rapidly, reflecting the rising demand for AI skills across various sectors. As of 2022, the number of AI specialists in Saudi Arabia has reached **1.4K+** based on their job title[40], with a broader pool of **165K+ workers** having at least two AI skills.

The demand for AI talent in the Saudi Market has increased, with job posts for AI-related positions growing nearly by **54%** each year from 2018 to 2022. During this period, the number of workers in the market with AI skills has also increased by almost **51% annually** (Figure 10).

FIGURE 10: GROWTH IN JOB POSTS AND AI WORKFORCE IN SAUDI ARABIA 2018-2022



Source: LinkedIn, 2022

[40] LinkedIn Insights tool, 2022.

Within the Saudi market, AI-skilled specialists are primarily found in several key industries, with retail, healthcare, and corporate services as the primary sectors leveraging AI talent[41]. Data scientists, data engineers, and AI engineers are ranking among the top five roles in the AI job market in Saudi Arabia. Prominent organizations like Aramco, STC, and SDAIA are leading in terms of employing the highest number of AI-skilled specialists, demonstrating their commitment to integrating AI into their operations and driving innovation in their respective fields. The skill set of these AI specialists is diverse, encompassing areas such as data analysis, machine learning, SQL, data visualization, and others.

HIGHLIGHTS[41]

51%

The annualized growth rate of workers with AI skills in the Saudi Arabia from 2018 to 2022.

60%

of AI specialists in Saudi Arabia have bachelor's degrees, while **25%** of them have master's degrees.

93%

of AI specialists in the Saudi Arabia have technology backgrounds such as computer science and information technology.

[41] LinkedIn Insights tool, 2022.

8. RESEARCH AND INNOVATION

Saudi Arabia's commitment to becoming a global leader in AI extends to include research and innovation. The Kingdom is fostering an ecosystem of academic institutions, research centers, and innovative companies to push the boundaries of AI technology. Most public and private universities in Saudi Arabia have established AI specialization centers to support academic faculty and students in their AI research projects. Additionally, led by SDAIA, the Kingdom established **11 Centers of Excellence (CoEs) specialized in AI and Generative AI** in partnership with local and global entities to foster research across different industries, such as the AI CoE in Media with the Ministry of Media (MOM), the GenAI CoE with Nvidia, the SDAIA-KFUPM Joint Research Center for AI, and the SDAIA-KAUST CoE in Data Science and AI.

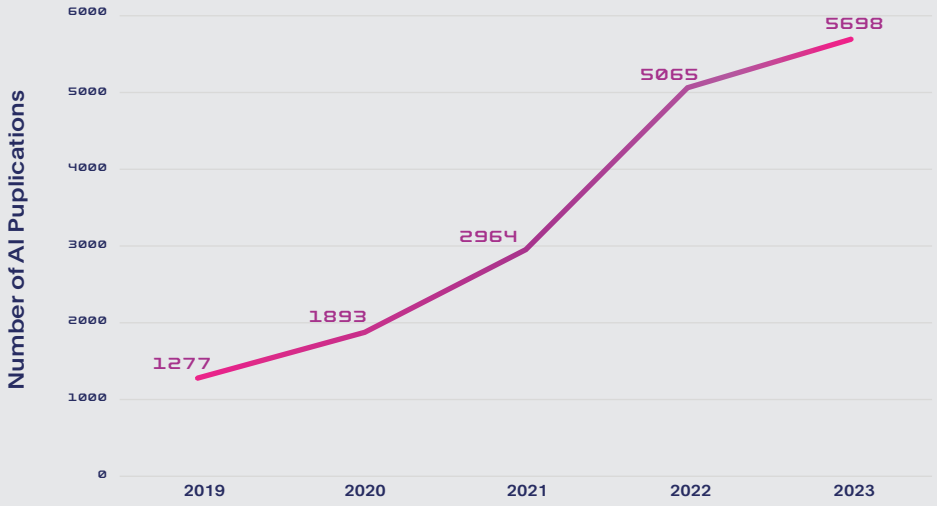
To facilitate collaboration and resource sharing, RDIA has created an Open Access Portal Platform to connect researchers and innovators with the available infrastructure in universities and research centers across the Kingdom. It contains **12 AI-specialized research labs** from 11 universities and two research centers.

Furthermore, strategic partnerships between academia and industry leaders are accelerating the practical application of AI research in various sectors, bridging the gap between theoretical advancements and real-world implementation. These collaborative efforts not only enhance **AI-related publications** but also increase **patent filings**, playing a crucial role in strengthening the Kingdom's position in the global AI landscape.

8.1. PUBLICATIONS

Saudi Arabia has witnessed a remarkable surge in AI-related research over the past five years. Scientific publications in AI have more than doubled[42], rising from **1.3K** in 2019 to **5.7K** in 2023. This represents a robust growth at an annualized rate of approximately **45%**, reflecting the rapid expansion of AI research activities in the Kingdom (Figure 11).

FIGURE 11: AI PUBLICATIONS IN SAUDI ARABIA 2019-2023



Source: OECD, access date 7-7-2024

[42] OECD. Live data from OECD.AI. https://oecd.ai/en/data (2024).

These publications encompass diverse formats, including scientific articles, reviews, conference papers, and book chapters. The AI research covers a broad spectrum of AI topics, ranging from Machine Learning to NLP and Simulation[43]. As a result of these research efforts, more than **eight generative AI models** have been developed through academic, governmental, and private sectors, including SDAIA's ALLaM—trained on **500+ billion tokens**, showcasing the practical outcomes of AI research initiatives.

HIGHLIGHTS[44]

45%

The annualized growth rate in AI scientific publications from 2019 to 2023.

73%

of AI research publications are categorized as journal articles, **21%** as conference papers, and **2%** as book chapters.

16.9K+

The total number of Saudi Arabia's scientific publications in the field of AI from 2019 to 2023.

[43] Emerging Technology Observery. Country Activity Tracker: Artificial Intelligence. https://cat.eto.tech/?expanded=Summary-metrics%2CCountry-co-authorship%2CChanges-over-time%2CTop-ten-organizations&countries=Saudi+Arabia&countryGroups= (2024)

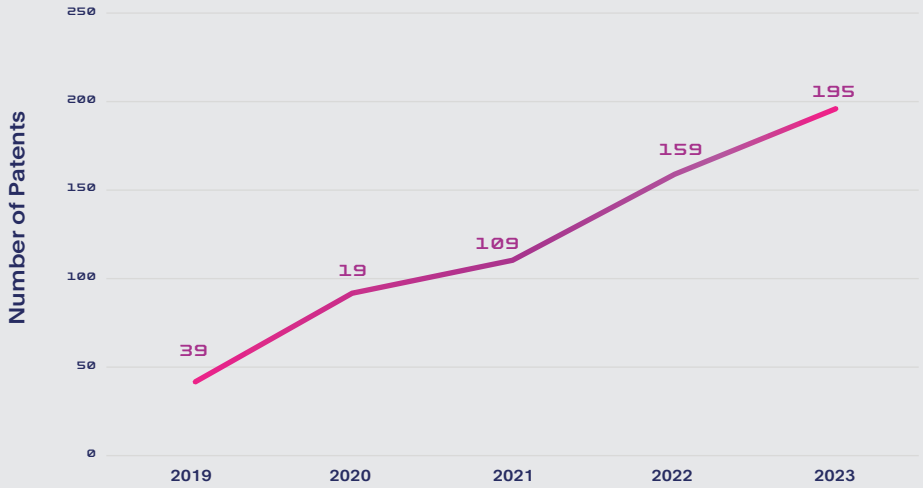
[44] OECD. Live data from OECD.AI. https://oecd.ai/en/data (2024).

8.2. PATENTS

Saudi Arabia has seen a significant increase in AI-related patent activity between 2019 and 2023. The number of granted patents in AI domains has risen dramatically from **39** in 2019 to **195** in 2023, representing an annualized growth rate of approximately **50%** (Figure 12).

This five-fold increase in AI patents over the last five years highlights the rapid pace of innovation in the Kingdom's AI sector. The granted patents cover various AI sub-domains, such as NLP and machine learning.

FIGURE 12: AI PATENTS IN SAUDI ARABIA 2019-2023



Source: SAIP

HIGHLIGHTS

50%

The annualized growth rate in AI patents from 2019 to 2023.

23%

The increase in the number of AI patents from 2022 to 2023 alone.

590+

The total number of AI patents in Saudi Arabia from 2019 to 2023.

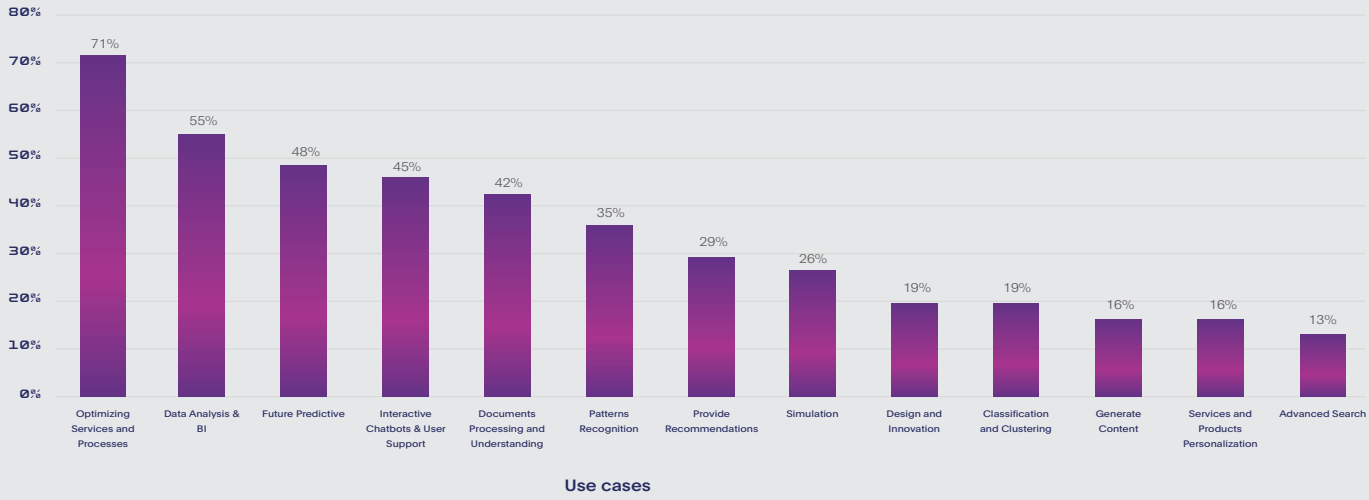
9. ADOPTION

Saudi Arabia is actively fostering the adoption of AI across various sectors, recognizing its potential to drive innovation, productivity, and economic growth. These efforts have increased AI adoption in many sectors, such as healthcare, finance, and agriculture.

In order to gain a comprehensive understanding of the state of AI adoption within government entities, SDAIA conducted a survey. The survey aimed to uncover the nature of AI adoption in these entities, its impact, and the associated challenges.

Results indicate that approximately **39%** of the participating government entities currently use AI or actively experiment with it within their organizations, while about **56%** of these entities plan to adopt AI in the future. Among these entities, the most common AI applications include service and operational optimization, data analysis and business intelligence, and predictive analytics (Figure 13).

FIGURE 13: GOVERNMENT ENTITIES TOP AI USE CASES



Source: SDAIA Readiness & Adoption Survey, n=80, 2024

Examples of AI applications include SDAIA's Estishraf platform, which offers AI-powered data analytics and decision-making services to **+100 government entities,** as well as Sawaher national platform that uses AI to analyze streams from **+15K cameras,** providing real-time insights and alerts for critical locations. In the justice sector, led by The Ministry of Justice, Optical Character Recognition (OCR) technology simplifies and accelerates real estate document processes with **98%** accuracy[45]. Meanwhile, CST has employed AI to detect illegal signal boosters, improving communication by **49%**[45].

The survey reveals that AI has significantly enhanced service delivery for **81%** of the entities, while **61%** reported improved decision-making processes due to AI integration[46]. However, despite these benefits, organizations face common challenges in AI adoption, including high implementation costs, a shortage of AI skills and expertise, and data privacy concerns.

[45] Emerging Technologies Adoption Readiness in Government Agencies. https://dga.gov.sa/sites/default/files/2024-07/Emerging%20Technologies%20Adoption%20Readiness%20in%20Government%20Agencies%202024.V2.1.pdf (2024).
[46] SDAIA Readiness & Adoption Survey, n=80, 2024

HIGHLIGHTS [47]

39%

of Saudi government entities are using or experimenting with AI.

74%

of government entities using or experimenting with AI focus on operational processes areas, while **65%** focus on IT-related processes.

43%

of government entities allocate a budget for AI projects this year or plan to allocate one next year.

70%

Developing AI solutions.

38%

Buying commercial AI solutions.

55%

Integrating AI in current applications and operations.

81%

of Saudi government entities using or experimenting AI reported that AI has significantly enhanced their service delivery.

[47] SDAIA Readiness & Adoption Survey, n=80, 2024.

10. FUTURE PREDICTIONS

12%

The AI estimated contribution to Saudi Arabia's GDP by 2030[48].

29%

The expected CAGR of the AI market in Saudi Arabia, resulting in a market volume of **$9.2 billion** by 2023[49].

23%

The projected CAGR to the annual spending on public cloud services up to 2029[50].

$15 BILLION

The expected amount of attracted investment in Saudi Arabia in data centers by 2030 to increase the capacity to **1300MW**[51].

[48] S. Rao, Dr. A., Verweij, G., Morrison, A. & Lix, B. Global Artificial Intelligence Study: Sizing the Prize. https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf. (2017).
[49] Artificial Intelligence - Saudi Arabia | Market Forecast. Statista https://www.statista.com/outlook/tmo/artificial-intelligence/saudi-arabia (2024).
[50] Shaikh, J. Unlocking the Data Center opportunity in KSA. Roland Berger https://www.rolandberger.com/en/Insights/Publications/Unlocking-the-Data-Center-opportunity-in-KSA.html (2024).
[51] Sheila. The Middle East & Africa Will See the World's Fastest AI Spending Growth Through 2026, According to Latest Forecast from IDC. IDC: The premier global market intelligence company https://www.idc.com/getdoc.jsp?containerId=prMETA50566523.

APPENDIX: TABLE OF ABBREVIATIONS

AI	Artificial Intelligence
CAGR	Compound Annual Growth Rate
CCRF	Cloud Computing Regulatory Framework
CoE	Centers of Excellence
CSPs	Cloud Service Providers
CST	Communications, Space & Technology Commission
DARAH	King Abdulaziz Foundation for Research and Archives
DGA	Digital Government Authority
GaStat	General Authority for Statistics
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GOSI	The General Organization for Social Insurance
GPU	Graphical Processing Unit

APPENDIX: TABLE OF ABBREVIATIONS

HPC	High Performance Computing
ICAIRE	International Center for AI Research and Ethics
ICT	Information and Communication Technology
InsureTek	International Insurance Conference
IoT	Internet of Things
IP	Intellectual Property
ITU	International Telecommunication Union
JRC-AI	Joint Research Center for AI
KACST	King Abdulaziz City for Science and Technology
KAIMRC	King Abdullah International Medical Research Center
KAUST	King Abdullah University of Science and Technology
KSAA	King Salman Global Academy for Arabic Language
LLMs	Large Language Models

APPENDIX: TABLE OF ABBREVIATIONS

MCIT	Ministry of Communications and Information Technology
MENA	Middle East and North Africa
MEWA	Ministry of Environment Water and Agriculture
MOE	Ministry of Education
MOH	Ministry of Health
MOMRAH	Ministry of Municipalities and Housing
MW	Megawatts
NCA	National Cybersecurity Authority
NDB	National Data Bank
NDI	National Data Index
NELC	National E-Learning Center
NIC	National Information Center
NLP	Natural Language Processing

APPENDIX: TABLE OF ABBREVIATIONS

NTDP	National Technology Development Program
OCR	Optical Character Recognition
OGDI	Open Government Data Index
PDPL	Personal Data Protection Law
PIF	Public Investment Fund
PNU	Princess Nourah bint Abdulrahman University
RDIA	Research, Development, and Innovation Authority
SAFCSP	Saudi Federation for Cybersecurity, Programming, and Drones
SAIP	Saudi Authority for Intellectual Property
SDAIA	Saudi Data & AI Authority
SME	Small and Medium Enterprise
SPGA	State Properties General Authority
VC	Venture Capital

APPENDIX: TABLE OF ABBREVIATIONS

WAICY	World Artificial Intelligence Competition for Youth
WSIS	World Summit on the Information Society


SDAIA
الهيئة السعودية للبيانات
والذكاء الاصطناعي
Saudi Data & AI Authority
VISION رؤية
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA