



► Policy Brief

October 2025

India is a major player in the digital services market *How did they get there and what does it mean for jobs?*

Key points

- ▶ India has become a major global player in digital trade. It is currently ranked fifth in the world in the export value of digitally delivered services (DDS). For much of the past two decades, the growth rates in exports of digital services have surpassed that of the global leader, the United States.
- ▶ With the expansion of digital trade comes the increase in jobs in the sectors linked to DDS. The share of total employment in DDS-relevant sectors has been increasing over time in India, especially in the states that lead in their receipt of foreign direct investment.
- ▶ Such jobs offer opportunities for India's young university graduates and are of higher quality than jobs in many other sectors. Nine in ten workers in the computer programming and consultancy sector, for instance, had a university or post-graduate degree compared to the all-sector India average of 14 per cent; their formal employment rate was 88 per cent compared to 12 per cent for all workers, 96 per cent worked in high-skilled occupations (compared to 12 per cent) and 90 per cent had some form of social protection (compared to less than 10 per cent).
- ▶ On the less positive side, many workers in DDS relevant jobs worked an excessive number of hours putting them at risk of burnout. Almost all workers in the sector put in more than 49 hours per week. Such jobs are also highly male-dominated; fewer than one in four workers in the DDS-relevant sectors were women.
- ▶ Factors behind the recent investment growth in India and its increasing prominence in provision of DDS include i) the country's large and highly-skilled workforce; ii) an increasingly vast digital and physical infrastructure; iii) strong investment incentives offered at both national and the states levels; iv) the government-supported culture of entrepreneurship and innovation; and iv) the appeal of service offers – primarily in DDS – made through the country's unique institutions of global capability centers (GCCs). GCCs have become technology and innovation hubs for the world's global technology and manufacturing powerhouses like Microsoft, Google and Samsung.
- ▶ There are many lessons to be gained through the assessment of the Indian pathway to become a top global competitor in digital trade. This Policy Brief examines these with a particular focus on what can be learnt from industrial planning as an important element of employment policy.

► 1. Introduction

The economy of India is increasingly benefiting from its success in the export of digitally delivered services (DDS). It is an area that attracts a growing share of the national inflow of Foreign Direct Investment (FDI) in recent years, including from big names in the tech world like Microsoft, Google and Amazon, and one that serves as an increasing source of employment for the country's large-scale skilled workforce, especially in states like Karnataka, Maharashtra and Tamil Nadu.

As of 2024, the value of India's exports in digitally delivered services, according to the World Trade Organization (WTO), was USD 269 billion, the fifth highest in the world, behind only the United States, the United Kingdom, Ireland and Germany.¹ Although the annual growth rate of DDS exports declined between 2022 and 2024, for most of the past two decades, growth rates in India have been

higher than those of both China and the United States.

This Policy Brief asks how India got to its current position as a top deliverer of digital services and what has this brought to the country in terms of both quantity and quality of job growth. Specifically, it explores:

- What are the current trends in digital trade, and specifically DDS, in India, and what does this mean for employment;
- What were the building blocks of the country's growth of DDS and related jobs, specifically Global Capability Centers (GCCs);
- What does employment in DDS look like in terms of quantity and quality, and what are the associated employment challenges; and
- What lessons can be drawn for other countries striving to get their foot in the door of the digital economy?

► 2. What are digitally delivered services?

Digitally delivered services (DDS) are the fastest-growing component of international trade, showing a fourfold increase in value since 2005.² It is defined according to the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD), and the World Trade Organization (WTO) *Handbook on Measuring Digital Trade* (hereafter "the Handbook") as "all international trade transactions that are delivered remotely over computer networks".³

Digital trade is a broader concept that combines both DDS and "digitally ordered trade" which refers to the international sale or purchase of a good or service using a computer network for the purpose of

receiving or placing orders. While both goods and services can be digitally ordered – for example, an order placed for a good advertised on an e-commerce platform like Amazon or Alibaba – goods cannot be digitally delivered. *This means that the digitally delivered realm of digital trade applies only to the services sector.*

Cloud networks have incrementally expanded the realm of DDS, but other delivery mechanisms exist, such as phones, emails, and faxes. To generate a statistical measure, the *Handbook* outlined the services that can be digitally delivered across borders. These are further categorized by the WTO for the purpose of producing statistics and are summarized in Table 1.

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¹ WTO, [Digitally delivered services trade dataset](#), webpage accessed 29/05/2025.

² IMF, OECD, UN, The World Bank and the WTO, [Digital Trade for Development](#), 2023.

³ IMF, OECD, UNCTAD and WTO, [Handbook on Measuring Digital Trade](#), Second edition, 2023.

► Table 1. Digitally delivered services by category

Service sector	Sub-sectors
IT and computer services	Software development, web design, cloud computing, data processing
Financial services	Online banking, investment management, insurance and pension services
Business and professional services	Management consulting (including HR), accounting, legal, architectural, engineering
Telecommunication services	Audiovisual, postal, courier, telecommunications (voice and video calls, emails, instant messaging)
Personal, cultural and recreational services	Streaming, online gaming, online media, e-learning

Note: Other variations of the categorization may exist.

Source: Based on the IMF, OECD, UNCTAD and WTO, *Handbook*, 2023 and WTO, Digitally delivered services trade dataset.

► 3. India and the growth of digitally delivered service

As of 2024, the value of India's exports in DDS was USD 269 billion, making it the fifth-largest provider of DDS exports in the world, behind only the United States, the United Kingdom, Ireland, and Germany (in descending order). By comparison, the value of DDS exports was USD 221 billion in China and USD 707 billion in the United States in 2024 (Figure 1, Panel A). At the same time, India imported nearly USD 117 billion worth of DDS (11th highest among countries), leaving it with a trade surplus in DDS of USD 152 billion (the third highest, behind the United States and the United Kingdom).

In total, over the past two decades (2005 to 2024), the value of India's DDS exports increased a thousandfold. The annual growth rate of DDS export

values in India was especially strong in the past five years (Figure 1, Panel B). Only in Ireland (among the six countries) was the average annual growth rate for the 2020–24 period above the 17 per cent seen in India (Figure 1, Panel B).

Over 90 per cent of India's DDS exports in 2024 were concentrated in two sectors: other business services (53 per cent) and computer services (40 per cent) (Figure 1, Panel C). While computer services remain an important part of India's digital trade profile, it is the provision of other business services that has shown the strongest growth in recent years.⁴ Ten years prior, in 2014, other business services were 42 per cent of India's total DDS exports and computer services were 46 per cent.

► The building blocks of DDS export growth in India

4.1. Investment on the rise

Foreign direct investment (FDI) in India has shown a steady upward trend in the past two decades. In 2024, India attracted approximately USD 27.6 billion, reflecting a modest 1.9 per cent decline from the previous year. Despite this slight decline, India's standing improved, climbing from 16th to 15th

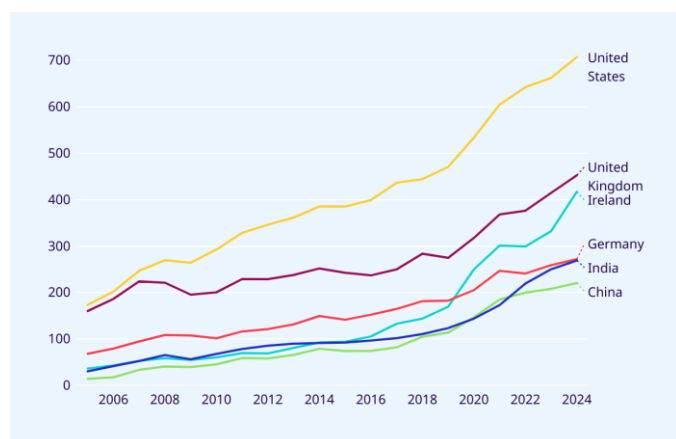
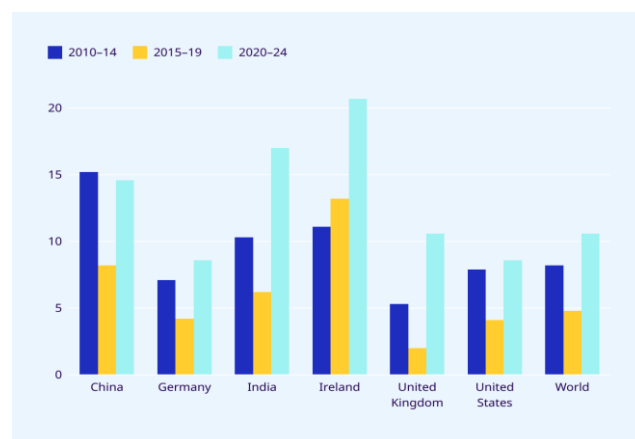
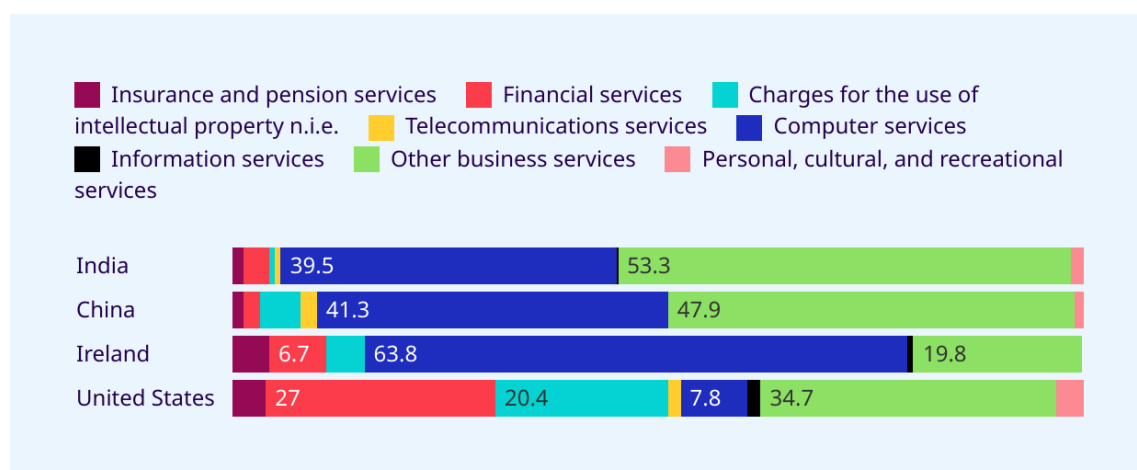
position globally in terms of FDI inflows.⁵

In 1990, India received USD 237 million in FDI, rising to USD 7.6 billion in 2005 and then increased to amounts ranging between USD 24 billion (in 2012) to USD 64 billion (in 2020) before falling again from 2020 (Figure 2). In 2023, FDI inflows stood at USD 28 billion.

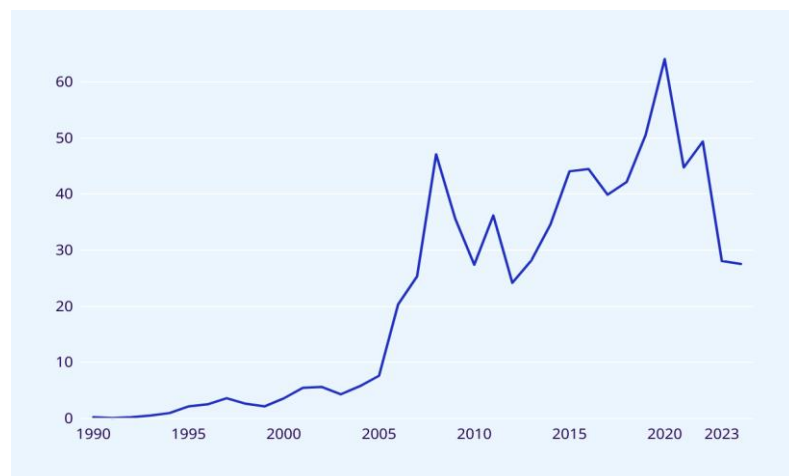
⁴ According to *the Handbook*, "Other business services" includes research and development services; professional and management consulting services; and technical, trade-related,

and other business services (such as architectural, engineering, scientific, and operational leasing services).

⁵ "FDI Inflows: India up at 15th spot in UNCTAD ranking", The Economic Times, 20 June 2021.

► **Figure 1. Trends in digitally delivered services exports in the top six countries****Panel A. Value of exports in DDS, 2005–24 (in billion USD)****Panel B. Annual growth rate in value of DDS exports, 2010–14, 2015–19 and 2020–24 (%)****Panel C. Share of DDS exports by sector as share of total, 2024, selected countries (%)**

Source: World Trade Organization, dataset on digitally delivered services (accessed 29 April 2025).

► **Figure 2. FDI inflow in India, 1990–2023 (USD billions, current prices)**

Source: United Nation Trade and Development, dataset on foreign direct investment (accessed 27 May 2025).

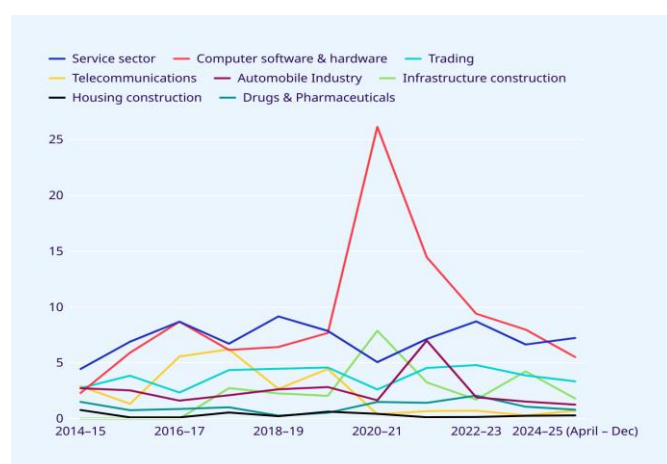
The peak of inflow to date was in 2020, when India emerged as the fifth-largest FDI recipient globally. The 27 per cent increase from 2019 was reportedly driven by mergers and acquisitions in the information and communication technology (ICT) sector,⁶ reflecting India's growing role in the global digital economy.

The sectoral distribution of FDI inflows highlights the dominance of the computer software and hardware sectors, along with the services sector (Figure 3, Panel A). In this area, the data center industry seems to be especially important for attracting new investment.⁷ The other key sectors attracting investment in recent years were the trading sector and the construction sector (infrastructure), and to a smaller degree, the telecommunications and the automobile industry.

By state, FDI inflows from 2019 through 2025 have been especially strong in Maharashtra and Karnataka, followed by Delhi, Tamil Nadu, and Gujarat (Figure 3, Panel B). Some of the multinational corporations that are increasing their presence in India include Airbus, Microsoft, Apple, Foxconn, Amazon, Samsung, and NTT Data.⁸

► **Figure 3. FDI inflows in India, 2014–25 (USD billion, current prices)**

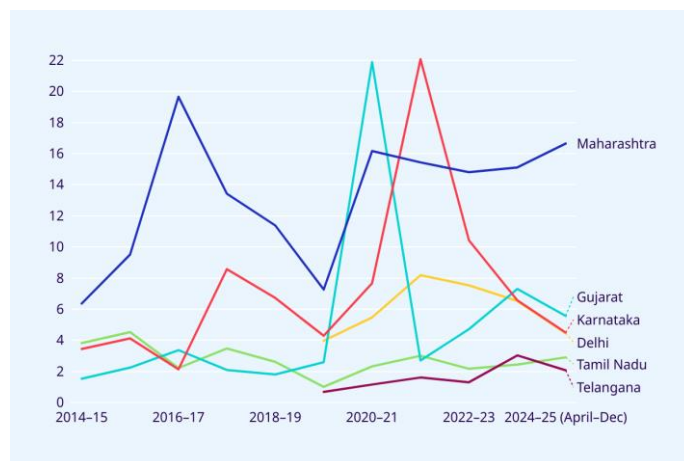
Panel A. By highest receiving sector



⁶ UNCTAD, [World Investment Report 2021: Investing in Sustainable Recovery](#), June 2021.

⁷ Sobia Khan, "[India's data centre capacity set to surpass 4,500 MW by 2030, backed by \\$25 bn investments](#)", The Economic Times, 29 May 2025.

Panel B. By highest receiving state



Note: Data for 2014–15 to 2018–19 were reported by the Reserve Bank of India (RBI) regional offices. From 2019–20 onwards, data were reported by states receiving FDI, creating a break in the series. Figures for 2024–25 cover April–December only.

Source: Based on data from the Department for Promotion of Industry and Internal Trade ([FDI Statistics](#) | [Department for Promotion of Industry and Internal Trade](#) | [MoCI](#) | [GoI](#))

4.2. What is behind investment growth in India?

The literature on investment trends finds that incoming investors cite the country's large available workforce at all skill levels, the large consumer base, the favorable investment climate and viable infrastructure.⁹ Those and other elements that serve to attract investment are covered here in turn.

Digital infrastructure

Digital India has played an important role in the current state of digital infrastructure in the country. The initiative was launched by the Government in July 2015 with the goal of ensuring that government services are made available digitally to citizens, especially in rural areas.¹⁰ To achieve this, the government has pushed three main areas of development: the extension of secure and safe digital infrastructure, digitizing government

⁸ "[10 global corporations expanding operations in India in 2025](#)", Invest India blog, 7 July 2025.

⁹ Invest India, "[10 reasons why India is the next global investment hub](#)", 24 April 2025.

¹⁰ The website for Digital India is [here](#).

services, and promoting digital literacy among all citizens.

Results have been positive, thanks in part to the country's favorable demographics. India is the world's most populous country, surpassing China in 2022 and reaching 1.45 billion in 2025. The population is youthful, with a median age of 29 years in 2025 and has a growing middle class and an increasing appetite for digital products.

There were a reported 806 million internet users in the country in early 2025, and 491 million social media users.¹¹ Only China has more people connected to the web. Digital payments are also seeing exponential growth with the diffusion of supportive technologies, including cloud-based systems, and an increase in consumer awareness.¹² The Indian market for cloud-based technology is expected to reach USD 13.5 billion by 2026, growing annually at 24 per cent from 2021.¹³

The country's expansion of physical infrastructure has also played a role in digital trade, as expanded networks of highways, airports, and train services improve the connectivity of the various economic hubs.¹⁴ The national budget for FY 2023–24 increased capital expenditure on infrastructure to 3 per cent of GDP, triple the investment of five years prior. The National Industrial Corridor Development Programme aims to develop new industrial "smart" cities to catalyze further economic growth and employment in the country.¹⁵ National funding dedicated to the programme was expanded by 60 per cent in the latest Union Budget 2025-26.¹⁶

Skilled workforce

India had slightly more than 25 million young adults aged 25 to 29 years with a completed advanced level (university degree or higher) of education, and another 1.4 million still in school at the higher level.¹⁷ No other country, among the 159 countries with available data in ILOSTAT, had a larger pool of educated young adults.¹⁸ The volume of advanced educated young adults in India was more than double that of the United States, the country with the second highest number at only 11 million.

There is no denying that the sheer bulk of high-skilled young adults in India serves as an important draw for FDI and has been an important factor in the country's expansion of DDS. And there is still plenty of room to grow for India to reach the more than 50 per cent share of young adults with advanced degrees that is seen in many high-income countries. For the moment, the share of young adults in India with a university or higher degree was 26 per cent in 2024, a significant increase from the 9 per cent share in 2005.¹⁹

Since independence, India has made considerable efforts to expand and improve its education system, aiming to develop a skilled workforce to support economic growth.²⁰ To develop the technical skills of its workforce, premier academic institutions such as the Indian Institution of Technology (IIT), modelled after MIT, were established from the 1950s. These institutions became symbols of excellence, producing graduates to contribute to technological development, research, and business management. The focus on elite education, however, can be said

¹¹ Simon Kemp, "[Digital 2025: India](#)", DataReportal, 25 February 2025.

¹² Indian Council for Research on International Economic Relations, *The State of India's Digital Economy (SIDE) Report, 2025*, 2025; PwC India, *The India Payments Handbook – 2024-2029*, August 2024. Cloud-based technologies include big data analytics, Artificial Intelligence (AI), machine learning models, the Internet of Things (IoT) and advanced business intelligence.

¹³ "[90+Cloud Computing Statistics: A 2025 Market Snapshot](#)", Cloudzero, 12 May 2025.

¹⁴ According to one report, Bengaluru led a surge in the residential market, representing one quarter of new housing development launches and sales in early 2025. Anushree Pratap, "[Bengaluru realty bags 25% of India's new launches, sales in Q1](#)

[2025](#)", Deccan Herald, 5 May 2025. The housing bubble, though, has reportedly slowed in recent months.

¹⁵ BRICS Today, "[India's Infrastructure Boom Driving Growth](#)", 28 February 2025. The website of the National Industrial Corridor Development Programme is [here](#).

¹⁶ India Union Budget 2025-26, [Budget at a glance](#).

¹⁷ Own calculations based on the Periodic Labour Force Survey 2024.

¹⁸ Data for China are not available.

¹⁹ Own calculations based on the Periodic Labour Force Survey 2024.

²⁰ Taylor C. Sherman, "[Education in early postcolonial India: Expansion, experimentation and planned self-help](#)", *History of Education*, 47(4), 2018.

to have come at the cost of lost investment in the expansion of a broader-based, quality system of primary and secondary education, resulting in a system of inequity.²¹ More recently, complementary policies like the National Education Policy (2020) have since aimed to bridge the gaps and improve equal access to quality education.

Investment incentives and the rise of Global Capability Centers

India has an increasing number of special economic zones (SEZs) with special regulatory frameworks that provide tax incentives, simplified customs procedures, and infrastructure support to attract businesses and promote exports, including in IT services. More specifically, benefits within SEZs include:²²

- **Income tax incentives** like a 100 per cent income tax exemption on export profits for the first five years, a 50 per cent exemption for the next five years, and an additional 50 per cent exemption on reinvested export profits for another five years;
- **Customs and service tax breaks** including the elimination of customs duties on imported equipment, software, and raw materials, and GST and service tax exemptions.

Table 2 shows the growth of SEZs by state. Tamil Nadu had the highest number of SEZs (at 51) in 2023, and also the largest increase, with five SEZs added since 2020.

Many multinational tech firms are clustering their investment in **global capability centers (GCCs)** that are now flourishing within many of the country's SEZs and benefiting from additional incentives provided through the Software Technology Parks (STP) Scheme and the Production-Linked Incentive (PLI) Scheme.²³ The Government's liberalization of

FDI now allows 100 per cent foreign investment in various sectors like IT, banking, financial services, and healthcare.

The GCCs are evolving into technology and innovation hubs, a business model whereby multinational corporations (both foreign and Indian-owned, though largely the former) set up offshore facilities to manage a variety of specialized IT and business functions, including research and development (for instance, for the automobile sector), customer support, finance, and data analytics for their parent organizations.²⁴

► **Table 2. Number of special economic zones by state**

State	2020	2021	2022	2023
Tamil Nadu	46	50	50	51
Maharashtra	37	37	37	38
Telangana	34	35	36	38
Karnataka	34	34	34	37
Andhra Pradesh	24	24	25	25
Gujarat	21	21	21	21
Kerala	20	20	20	20
Uttar Pradesh	13	14	14	14
Haryana	7	7	7	8
West Bengal	7	7	7	7
Madhya Pradesh	5	5	5	6
Odisha	5	5	5	5
Punjab	3	3	3	3
Rajasthan	3	3	3	3
Chandigarh	2	2	2	2
Chhattisgarh	1	1	1	1
Jharkhand	0	0	0	1

Note: States with no SEZs as of 2023 are not shown. States are sorted in descending order by number of SEZs in 2023.

Source: Department of Commerce – Annual report, State-wise distribution of approved special economic zones.

India expects to host 2,550 GCCs by 2030, up from

²¹ Sabil Francis, "The IITs in India: Symbols of an emerging nation", *Südasiens-Chronik - South Asia Chronicle*, 1, 2011.

²² Mayank Pratap Singh, "Government support and incentives for GCCs in India", Supersourcing, undated.

²³ The STP Scheme provides additional regulatory and financial benefits in technology-driven GCCs that include exemptions on import duties for IT infrastructure, duty free imports, and simplified compliance systems including single-window clearance for approvals. The PLI Scheme encourages investment in AI, machine learning and digital transformation projects, and

provides cash incentives on sales of high-tech services. Source: Mayank Pratap Singh, op cit.

²⁴ For a comprehensive background on GCCs, see Zinnov, "How 6 Indian cities made India 'the GCC capital'", 17 January 2025; and India Brand Equity Foundation (IBEF), "Global Capability Centres are transforming India's corporate landscape", 18 October 2024. For a clear explanation of GCCs as a business model, see HSBC, "What are Global Capability Centres (GCCs) in India?", 13 May 2025.

around 1,700 in 2024. The leading states for GCC growth are currently Tamil Nadu (especially Chennai), Gujarat, and Karnataka (especially Bengaluru). According to one source, India hosted 24 GCCs that surpassed USD 1 billion in their export revenues during fiscal year 2023, generating a total export value greater than USD 40 billion.²⁵ In terms of functional clustering, AI activities dominate in Hyderabad (Telangana state), while Bengaluru (Karnataka state) hosts primarily firms in research and development and innovation, for instance.²⁶

Further growth in GCCs is expected across the country. The Union Budget of India 2025–26 includes a National Framework for GCCs, which lays the groundwork to promote the growth of GCCs in tier-2 cities as well. The Budget projects that GCCs will employ 3.3 million men and women by 2030 and contribute 3.5 per cent to the country's GDP.²⁷

Moreover, **Centers of Excellence** (CoEs) in India began gaining prominence in the early 2000s, supported by government initiatives and industry collaboration to drive technological and economic growth. Recently, many GCCs have started to establish in-house CoEs to strengthen expertise in areas like data science, AI, and cybersecurity, enabling them to deliver high-value services to global operations.²⁸ GCCs have also been partnering with academic and public CoEs to foster innovation and build future-ready talent.²⁹

Talent pipelines

GCCs benefit from “talent pipelines” with renowned scientific, management, and other specialized institutions. This means that GCCs and leading technology companies work together with academic and technical institutions to hone curricula, produce

graduates with sector-specific skills, and organize apprenticeships and on-site recruitment.³⁰ Examples include the connections made with the Indian Institute of Science in Bengaluru, the Symbiosis Institute of Business Management (SIBM) in Pune, and the Jamnalal Bajaj Institute of Management Studies (JBIM) in Mumbai.

Innovation and start-up ecosystems

GCCs thrive in part due to their capacity to innovate, particularly in advanced digital domains, through their local ecosystem. Such ecosystems are fostered both by design and organically. On the former, the Government's budget of 2025 has increased its allocation to the Ministry of Science and Technology and the Ministry of Electronics and Information Technology as part of its continuing commitment to strengthening the country's technology and innovation ecosystem.³¹

More organically, GCCs strive to innovate through strategic hiring (their talent pool); continually honing the adaptations of technologies in realms of IT, research and development, finance, and logistics; fostering collaboration with Indian start-ups, research institutes, and among other enterprises; and promoting effective leadership.

The startup culture has increased significantly in India as young people increasingly turn to entrepreneurship and benefit from government support through initiatives like **Startup India** and the **Fund of Funds for Startups**.³² The states showing the largest growth in startups between 2022 and 2023 were Gujarat, Tamil Nadu, and Maharashtra, the same states that are strong in DDS.

²⁵ The estimate includes Indian operations of IT services along with the GCCs. Shillpa Phadnis, “[India's billion-\\$ revenue GCCs double in 5 years](#)”, The Times of India, February 24, 2025.

²⁶ Impact and Policy Research Institute, “[The 1985 National Framework for GCC – Budget 2025](#)”, March 17, 2025.

²⁷ While it may seem an impressive number, the figure represents less than 1 per cent of overall employment in the country, and approximately 4.8 per cent of the current workforce holding an education level at the highest (tertiary) level.

²⁸ Wipro, “[Wipro Launches GitHub Center of Excellence to Accelerate AI Innovation](#)”, 24 April 2025.

²⁹ Sun Life, “[Sun Life Global Solutions Partners With IIT Indore to Foster Innovation](#)”, 29 November 2024.

³⁰ Tech companies are reportedly reviving their campus recruitment systems after a pause. See “[Big revival of campus hiring! Infoys invites senior employees on panels for interviews in colleges](#)”, The Time of India, 10 September 2025.

³¹ BDO India, “[India Union Budget 2025 Key Updates – It/ITeS and GCC Sector](#)”, 5 February 2025.

³² Team Tice, “[Indian Startup Success Report 2024: Data-driven insights](#)”, 7 September 2024.

State-level GCC policies and other industrial policies

In addition to national efforts, several Indian states are developing their own GCC-specific policies to attract investments.³³ For instance:

- **Karnataka:** The Karnataka GCC Policy: 2024-2029 was released in November 2024 with the aim of attracting 500 new GCCs to the state by the end of the period through incentives that include rental reimbursements, funding for innovation labs. and skilling expense reimbursements.
- **Uttar Pradesh:** The state launched its GCC Policy 2024 with a target of more than 1,000 GCCs and 500,000 jobs, offering fiscal incentives such as 100 percent stamp duty exemptions and payroll subsidies.
- **Telangana:** The state policy on GCC focuses on tax breaks and digital infrastructure growth, with specific benefits including rental and operational cost subsidies for new GCCs lasting up to five years, updated state university curricula to meet GCC hiring needs, and a boost in office spaces with seamless connectivity.
- **Gujarat:** The state seeks to position itself as a global finance and fintech hub. It established the Gujarat International Finance Tec-City (GIFT City)

to this end, providing a ten-year tax holiday on profits from financial services operations to GIFT City-based enterprises, a 100 per cent GST exemption to GCCs serving overseas clients, and simplified business regulations.

- **Tamil Nadu:** The state offers standard supports like tax incentives and development of business parks, but there are also innovations; first, in financial support that is based on workforce size, intended to help GCCs in the state to create new jobs (an employment subsidy of sorts), and second, in the government subsidy of power sources for GCC facilities using renewable energy sources.

Beyond policies for GCCs specifically, most Indian states also manage their own (non-GCC-specific) industrial policies. In Maharashtra, for instance, the Maharashtra Industrial Development Corporation is responsible for the approval of public and private IT parks, garnering investments accordingly. It also signed Memorandums of Understanding with multinational firms to manage their incoming investments. In Karnataka, the Industrial Policy 2020-25 put forth simplified procedures for investment and aimed to “create as much direct employment as possible”.

► 5. The increase of digital service jobs in India

In this section, we investigate the growth of DDS-linked jobs and generate an employment profile of DDS jobs in some of the states known to be most prolific in this area. The states of focus here are Maharashtra, Karnataka, and Tamil Nadu.³⁴

5.1. How are DDS jobs identified?

In the realm of labour market statistics, there does not yet exist a classification of employment linked to digital trade or, more specifically, to digitally delivered services. Regardless, based on the guidance provided in the *Handbook*, we can make some assumptions about the sectors that overlap

³³ The state summaries here are based on Mayank Pratap Singh, “Government support and incentives for GCCs in India”, Supersourcing, undated. See also Melissa Cyrill, “India Working on New GCC Policy to Tap Sector Growth with Fresh Incentives”, India Briefing of Dezan Shira & Associates, 11 December 2024; Invest UP, [Uttar Pradesh Global Capability Centres Policy 2024](#), draft. See also, Nascom Community, “Uttar Pradesh Global Capability Center Policy: A Vision for 2024 and Beyond”, October 7, 2024; and Melissa Cyrill, “Karnataka’s New Industrial Policy for

[2020-25: What Should India-bound foreign investors expect”, India Briefing of Dezan Shira & Associates, 15 January 2021.](#)

³⁴ These are not the only states of importance to India’s digital trade mapping but are those with labour force survey data samples of sufficient size to permit estimation of employment at the sectoral level. The other states with growing numbers of GCCs and incoming FDI linked to digital trade like Gujarat, Telangana and the National Capital Area (NCR).

with DDS and use available official labour market statistics to look at the employment trends and profiles of workers within those sectors. Specifically, we have selected the sectors from the International Standard Industrial Classification (ISIC), Revision 4,³⁵ coded at the 2-digit level as categories 61 through 74, as those where digital delivery of services, akin to what is described in Table 1, is likely to happen, at least in part. Table 3 shows the selected “DDS-relevant” sectors.

► **Table 3. Summary of DDS-relevant sectors, by ISIC 2-digit code**

ISIC 2-digit level
61 – Telecommunications
62 – Computer programming, consultancy and related activities
63 – Information service activities
64 – Financial service activities, except insurance and pension funding
65 – Insurance, reinsurance and pension funding, except compulsory social security
66 – Activities auxiliary to financial service and insurance activities
68 – Real estate activities
69 – Legal and accounting activities
70 – Activities of head offices; management consultancy activities
71 – Architectural and engineering activities; technical testing and analysis
72 – Scientific research and development
73 – Advertising and market research
74 – Other professional, scientific and technical activities

Source: International Standard Industrial Classification of all Economic Activities (ISIC), Revision 4.

Let us acknowledge up front that there are faults with this proxy approach and that other methodologies exist. The sectoral focus cannot serve as a definitive estimation of employment in DDS or digital trade because, first, not all work within the selected sectors will fit within the realm of

digital services, and second, there are likely to be non-selected sectors where some digital services are provided. As for other methodologies that might more accurately measure “digital employment”, there are some that could be worth pursuing in a future effort. In fact, the sectoral proxy approach used here is a shortcut to the “output-based” methodology described in the recent ILO *Digital Employment Diagnostic Guidelines*.³⁶ That approach was not possible here because we did not have access to employment by sector data at the 4-digit level of disaggregation.

In the absence of an official statistical classification, we proceed with the focus on the DDS-relevant sectors, listed in Table 3, as a stop-gap approach to investigating the storyline of employment trends in digital services in India. Annex Table 1 pulls out some job titles and descriptions from real-time job postings in India using the platform Naukri.com, with the aim of demonstrating more clearly the digitally-delivery aspect of some jobs within the designated sectors.

Data challenges

The National Statistics Office of India has been running a quarterly Periodic Labour Force Survey (PLFS).³⁷ At the national level, population weights utilized in the PLFS are applied to the sample survey based on population projections from the Ministry of Health and Family Welfare. Given the time gap since the population census of 2011 (the most recent), there is a call for caution in the interpretation of the employment estimates generated on the basis of population projections.³⁸ The population sampling issues are exacerbated when it comes to state-level disaggregation. For this

³⁵ The [International Standard Industrial Classification of All Economic Activities \(ISIC\)](#) is a standard classification of economic activities arranged so that entities can be classified according to the activity they carry out. In this study, we focus on employment statistics categorized according to industrial categorization of the respondent’s main job as collected in the Periodic Labour Force Survey, conducted on a quarterly basis by the Ministry of Statistics and Programme Implementation (MoSPI).

³⁶ ILO, [Digital Employment Diagnostic Guidelines](#), 2023.

³⁷ The quarterly PLFS were carried out in urban areas only until 2025. However, annual estimates provided by the National Statistics Office are national in coverage. The ILO Department of Statistics extracts the quarterly data by filtering for quarters from the annual microdata. This means that also the quarterly estimates in ILOSTAT – the basis of the analysis made in this Brief – cover both urban and rural areas.

³⁸ The caution is repeated in the reports of the PLFS, available at <https://www.mospi.gov.in/>.

reason, this section does not present nominal figures on employment at the state level.³⁹

5.2. Are jobs in DDS-relevant sectors growing?

India is still a largely agricultural economy. Employment in the agricultural sector still dominates the overall employment landscape, followed by employment in traditional non-agricultural sectors that generate livelihood opportunities for the country's large lower-skilled work base. Still, 42 per cent of total employment was in the agricultural sector in India in 2024, and 12 per cent and 10 per cent, were in construction and retail trade, respectively.

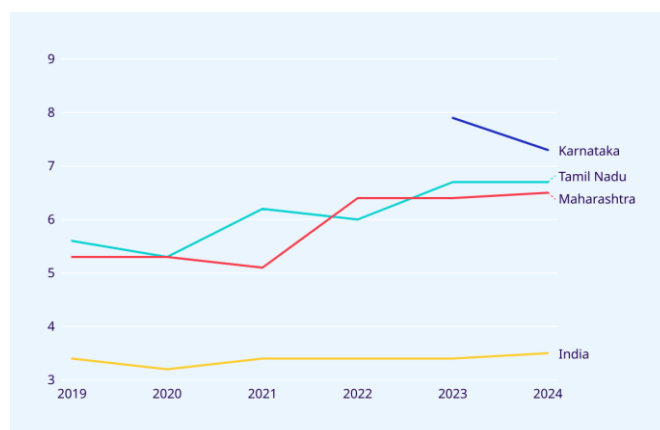
Even in Maharashtra, the state with the highest gross state domestic product in 2025–26, 41 per cent of total employment was in agriculture. Tamil Nadu, the state with the second-highest state share of national GDP, was the only one among the selected states with an agricultural employment share below one third. Reflecting its strong industrial foundation, “only” around 26 per cent of employment in the state was in agriculture in 2024.

These points are made to help explain why shares of employment in DDS-relevant sectors (ISIC 61–74) are relatively low when taken as a percentage of total employment in India, or even as a percentage of non-agricultural employment. The shares of employment in the DDS-relevant sectors in total employment in 2024 were 7.3 per cent in Karnataka, 6.5 per cent in Maharashtra, and 6.7 per cent in Tamil Nadu. Such state shares surpassed the national average (all India) of 3.5 per cent by nearly twofold.

To answer the question in the section header – are jobs in DDS-relevant sectors growing – we can answer with a “yes” that is supported by the primary

employment data. First, the data show the increased importance that DDS-relevant sectors have assumed as a source of jobs in the states with increasing numbers of SEZ and GCCs (Figure 4). In Maharashtra, 5.3 per cent of total employment was in the DDS-relevant sectors in 2019, increasing to 6.5 per cent in 2024. In Tamil Nadu, the share increased from 5.6 per cent in 2019 to 6.7 per cent in 2024. A similar time series could not be generated for Karnataka, the state (among the three) with the highest employment share in DDS-relevant sectors in 2024 (though with a decline from the 2023 share).

► **Figure 4. Employment in DDS-relevant sectors as % of total employment, selected states, 2019–24**



Note: DDS-relevant sectors are those that fall within ISIC 61–74. See table 3. Data for Karnataka is shown only from 2023 as smaller sample sizes in earlier years leave doubts on the reliability of the estimates.

Source: Estimates based on the Periodic Labour Force Survey (microdata).

Second, we can look at the aggregate sectoral employment size for the country as a whole. Employment in the DDS-relevant sectors increased by 35 per cent between 2019 and 2024, marking a faster growth rate than that of other sectors. The employment growth rate for all sectors excluding ISIC 61–74 was 27 per cent for the 2019–24 period.

The job growth in the DDS-relevant sectors over

³⁹ The selected states of this section are those with urban sample sizes considered to be sufficiently large to generate reliable disaggregation of sectoral-level indicators. To demonstrate, in the last quarter survey of 2024 (Q4 2024), the household sample sizes based on the urban frame survey blocks were as follows: Karnataka, 2,303 households covering 6,192 persons of working age (15 years and over); Maharashtra, 4,330 households and 12,852 persons; and Tamil Nadu, 3,480 households and 9,431

persons. Sample sizes were similar in the other quarters of 2024. The Bulletins of the quarterly PLFS present core statistics at the disaggregate level for 22 Indian states in total. As of January 2025, the sampling methodology of the PLFS was revised to allow for monthly estimates and disaggregation of a fuller set of indicators by rural/urban distinction.

time has benefited men more than women. While jobs for both men and women in the sectors increased over the 2019–24 period, it remains a male-dominated area. *Nearly eight in ten of the jobs added in the DDS-relevant sectors over the five-year period were jobs held by men.* The female share of jobs in the aggregate sector remained static at 20 per cent in both 2019 and 2024.

Among the three states, only in Maharashtra was slightly more than one in four workers in the aggregate sectors female in 2024 (27 per cent). In the other states, the women's share was just below one quarter (23 per cent in both Karnataka and Tamil Nadu). These female shares of employment were below the all-sector averages, another demonstration of how DDS jobs in India are firmly segregated towards men.

The remainder of the subsection provides a more detailed employment profile of the three focus states.

Karnataka

Employment numbers overall in Karnataka grew by 16 per cent between 2019 and 2024. The employment-to-population ratio (EPR) for the state

increased by 5 percentage points, from 50 per cent to 55 per cent, with the larger increase in the female EPR over the male EPR.⁴⁰ In 2024, the state's EPR of women was 35 per cent compared to 75 per cent for men.

In 2024, employment in the DDS-relevant sectors represented 7 per cent of total employment, 11 per cent of non-agricultural employment, and 17 per cent of service sector employment. Within the DDS-relevant sectors, nearly half of workers (48 per cent) were in the sector of "computer programming, consultancy and related activities", followed by "financial service activities" (19 per cent) and "legal and accounting activities" (8 per cent) as the next largest subsectors in employment share (Table 4).

Maharashtra

Employment in the state of Maharashtra increased by nearly 24 per cent between 2019 and 2024. The EPR in 2024 was 55 per cent, up from 50 per cent in 2019.⁴¹ The EPR of women increased more than that of men, rising by 5 percentage points (to 36 per cent) compared to 2 percentage points for men (to 74 per cent).

► **Table 4. Distribution of employment in DDS-relevant sectors (ISIC 61-74), selected states, 2024 (%)**

ISIC 2-digit	Karnataka	Maharashtra	Tamil Nadu	All India
61 – Telecommunications	1.1	3.5	2.9	3.8
62 – Computer programming, consultancy and related activities	47.5	23.4	39.6	24.3
63 – Information service activities	5.6	5.3	6.1	5.3
64 – Financial service activities, except insurance and pension funding	19.0	26.6	28.6	27.0
65 – Insurance, reinsurance and pension funding, except compulsory social security	2.4	3.4	1.1	3.4
66 – Activities auxiliary to financial service and insurance activities	1.5	5.9	2.0	4.7
68 – Real estate activities	7.1	8.0	5.8	8.0
69 – Legal and accounting activities	7.6	10.3	6.6	12.3
70 – Activities of head offices; management consultancy activities	0.2	2.1	0.0	1.1
71 – Architectural and engineering activities; technical testing and analysis	1.5	1.0	0.6	1.7
72 – Scientific research and development	0.9	0.7	0.3	0.6
73 – Advertising and market research	0.2	2.3	0.2	1.2
74 – Other professional, scientific and technical activities	5.4	7.6	6.1	6.8

Source: Estimates based on the Periodic Labour Force Survey (microdata).

⁴⁰ The 4-percentage point increase in the EPR was surpassed in 27 states.

⁴¹ The 5-percentage point increase in the EPR was surpassed in 24 states.

In 2024, employment in the DDS-relevant sectors represented 7 per cent of total employment, 11 per cent of non-agricultural employment, and 17 per cent of service sector employment (up from 9 per cent of non-agricultural employment and 13 per cent of employment in services in 2019). Unlike in Karnataka, the largest subsector in employment size within the aggregate grouping was financial service activities, followed by computer programming and legal and accounting activities (Table 4).

Tamil Nadu

Tamil Nadu saw employment growth of 14 per cent between 2019 and 2024. The EPR of men in 2024 was 73 per cent and that of women was 39 per cent. The overall EPR of 55 per cent represented a 4-percentage-point increase over 2019.

Among the DDS-relevant sectors, more than two-thirds of workers were in the subsectors of computer programming and financial service activities (Table 4). In 2024, employment in the DDS-relevant sectors represented 7 per cent of total employment, 9 per cent of non-agricultural employment, and 16 per cent of service sector employment (up from 6 per cent, 8 per cent, and 14 per cent, respectively, in 2019).

5.3. DDS jobs are formal, highly skilled and well paid

To give a snapshot of both the characteristics of workers in DDS and the conditions of their work, this subsection looks at the two subsectors that take the highest share among workers in the aggregate DDS-relevant sectors: computer programming (ISIC 62) and financial service activities (ISIC 64).

The following are some highlights of the characteristics of workers within the two DDS-relevant subsectors in India as a whole. The same statistics are available for the states of Karnataka, Maharashtra, and Tamil Nadu in Annex Table A2.

- **DDS offers an outlet for educated workers.** The share of tertiary-educated (with university level or higher) workers was 92 per cent in the computer

programming sector in 2024, and 75 per cent in the financial service activities sector. These educational attainment rates were higher than the aggregate of all DDS-relevant sectors (at 76 per cent), and were more than six times higher than the average among workers in all sectors (14 per cent among all workers).

- **DDS attracts young workers.** The share of young workers (aged 15–29) in both computer programming and financial services exceeded that of the average across all sectors. Nearly half (49 per cent) of the workforce in computer programming was “young”, compared to 34 per cent of workers in financial services and 24 per cent of all workers in the country.

As for the characteristics of employment:

- **DDS jobs are primarily formal in nature.** While for all workers (all sectors) in India, the share in formal employment was only 12 per cent in 2024, the formal employment share for workers in computer programming was 88 per cent. In the financial services sector, the formal sector employment rate for India was 75 per cent.
- **Almost all DDS workers are classified as paid employees.** Paid employment (employees) is the common status in the two sectors. Nearly 96 per cent of workers in computer programming were paid employees. Shares were lower among workers in financial services, at 91 per cent, but still substantially higher than for all workers in the country. Self-employment was much more prevalent in other sectors; only 24 per cent of all workers in India were in paid employment in 2024.
- **DDS jobs are highly skilled.** Not surprisingly, given the education level of workers, nearly 96 per cent of workers in computer programming were classified in an occupation deemed “high-skilled”.⁴² In financial services, workers were more evenly split between high-skilled occupations and medium-skilled occupations, with the latter falling mainly in the category of clerical support. Overall, the share of workers in financial service activities who were in high-skilled occupations was 46 per

⁴² See the “[glossary of skills levels](#)” on the website of the International Standard Classification of Occupations (ISCO).

cent. For India, as a whole, 12 per cent of workers were in a high-skilled occupation in 2024.

- **Workers in DDS have access to social protection entitlements.** Most workers in India do not have access to social protection benefits, including paid sick and annual leave or pension entitlements. This is not true, however, for the largely formal sector workers in computer programming and financial services. Nearly 90 per cent of workers in computer programming had some form of social protection entitlement, while the same was true for three in four workers in financial service activities.
- **Workers in DDS put in long hours.** Nearly all workers in computer programming worked more than the legal limit of 48 hours per week⁴³ in 2024, compared to 50 per cent of all workers across all sectors. One-third of workers in computer programming reported working 60 or more hours per week, compared to 18 per cent of workers in financial services and 15 per cent of workers in India overall. The average weekly hours worked per person were 58.6 in the computer programming sector, 56.4 in the financial services sector and 45.7 for all workers across all sectors. For further comparison, workers in the agricultural sector put in 37.9 hours per week.

5.4. Challenges in the DDS-relevant sectors

Labour shortages and high turnover

One of the oft-repeated challenges of work within the DDS-relevant sectors of India has to do with high staff turnover and the difficulty of retaining talent. This is a common phenomenon in competitive, fast-growth sectors when demand for persons with particular expertise – computer programming, for example – exceeds supply. Therefore, when enterprises requesting similar expertise are closely

clustered, workers can easily jump between enterprises, perhaps in search of optimal conditions of work, better wages or non-wage entitlements.

Worker burnout

Linked to the previous challenge as a cause of labour turnover is worker burnout. Burnout is defined by the World Health Organization as a “syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed” and leaves a person feeling depleted of energy, negative or cynical about one’s job with reduced professional efficacy.⁴⁴

Success within GCCs is based on the depth of their innovation ecosystem, specialized talent, and flexible work models. The pressure to maintain and even grow the competitive edge can strain human capacities and create atmospheres ripe for workplace burnout.

One study of young knowledge workers in the IT field found the following reasons for burnout in the early career years: poor integration into the job and organization, underemployment, and fear and insecurity of being replaced or downsized.⁴⁵ Other studies discuss the circumstances of long work hours and pressures for high performance.⁴⁶

The male dominance of DDS jobs

The male dominance of jobs in DDS-relevant sectors in India is worrisome. As stated earlier, in the states analyzed, fewer than one in four workers in the DDS sectors were women. There has been, however, some important growth in employment for women in other sectors that could qualify as a secondary effect of the economic boom happening in the investment-rich states studied. In Maharashtra, for example, women’s employment in retail grew by 53 per cent in the 2019–24 period, in accommodation

⁴³ Legislated in the Factories Act, 1948, and the Shops and Establishment Act (by state).

⁴⁴ World Health Organization, “[Burn-out an ‘occupational phenomenon’: International Classification of Diseases](#)”, 28 May 2019.

⁴⁵ Premalatha Packirisamy, Manju Meenakshy and Srinath Jagannathan, “[Burnout during early career: lived experiences of](#)

[the knowledge workers in India](#)”, *Journal of Enterprise Information Management*, Vol. 30 No. 1, 2017.

⁴⁶ Alex Han, “[Burnout epidemic in India’s IT sector: One in four clock 70+ hours a week](#)”, 30 March 2025; “[20% IT employees in India uncertain about job stability, 29% facing burnout: Report](#)”, *The Economic Times*, 28 November 2024.

and food service activities by 53 per cent, and in public administration by 94 per cent.

AI jobs crowding out lower-level tech jobs

Like everywhere, there is concern in India that the rapid advancement of AI will replace many lower-level tech jobs, such as those in coding, debugging, and software testing. At least for the moment, such AI substitution does not seem to be happening at scale. Some news of job cuts in the IT sector emerged from mid-2025 but without pointing to AI as the cause.⁴⁷ And, in the meantime, other technology firms reported job growth.⁴⁸

An ILO study found that about one in four jobs (24 per cent) globally has a degree of exposure to AI.⁴⁹ It emphasizes that such exposure could imply a shifting of tasks for the impacted worker rather than a full replacement of the occupation. While the verity of any AI-job replacement prediction remains to be seen, the threat is real, especially for entry-level jobseekers. Enterprises, workers, and jobseekers in India and elsewhere will be forced to strategically adapt to the advancement of AI.

► Policy implications

This section seeks to pull out possible lessons from India's current status as a leader in DDS exports and its pathway to getting there. There is so much in the Indian context that is not transferable – no other country can replicate the country's volume of annual young graduates in the fields of science, technology, and engineering, for example. Nonetheless, there are some elements of the government's approach to digitalization/industrialization that could be drawn upon by other countries seeking to expand their own capacity in "knowledge process outsourcing" as

Vulnerabilities in global trade markets

Trade conflicts are an uncomfortable reality of 2025. India is one of the countries facing the worst of the tariff hikes imposed by the United States. The new 50 per cent tariffs on Indian exports to the United States are expected to hit hard the manufacturing sector and result in a reduction in the country's GDP.⁵⁰

More recently, the United States Government has threatened to also impose restrictions that would impact India's digital trade. Media reports state that the U.S. administration is considering "blocking US IT companies from outsourcing their work to India".⁵¹ A proposed "Halting International Relocation of Employment Act" (HIRE Act) would put a 25 per cent tax on outsourced services and, in doing so, erode the cost advantage of outsourcing to India. Such reports add to the realm of economic uncertainty in India and, although still rumours, add another layer of risk to the future of India's GCCs and overall record on trade in digital services.

an engine of national growth. The following policy implications are offered here:

1. Promote the growth of industrial clusters.

Industrial clusters are collections of geographically concentrated enterprises that share resources and knowledge and tend to produce positive spillover effects on regional development and economic growth. They leverage economies of scale, reduce logistical inefficiencies, and create synergies that

⁴⁷ Tata Consultancy Services, the country's largest private sector employer announced a cut of 12,000 jobs due to "limited deployment opportunities and skill-mismatch". ["TCS layoffs: Job cuts due to skill mismatch, not AI automation, says CEO K Krithivansan"](#), The Economic Times, 28 July 2025.

⁴⁸ For example, ["Infosys to hire 20,000 freshers in 2025 as part of AI-driven growth strategy"](#), Storyboard 18, 30 July 2025; ["US-India trade tensions: Amazon, Apple, Netflix, Google and Meta make big hirings in India"](#), The Indian Express, 1 September 2025.

⁴⁹ Pawel Gmyrek, Janine Berg, Karol Kaminski et al., ["Generative AI and Jobs: A Refined Global Index of Occupational Exposure"](#), ILO Working Paper 140, May 2025.

⁵⁰ ["India's chief economic advisor says Trump's tariffs could shave 0.5% off GDP, Bloomberg News reports"](#), Reuters, 8 September 2025.

⁵¹ ["Big blow for Indian IT soon? Trump administration's HIRE Act sends jitters; likely 25% tax on jobs sent overseas sparks concern"](#), The Times of India, 9 September 2025.

can enhance productivity. High-tech clusters can flourish in settings that encourage cooperation between academic institutions, research centers, start-ups, and established businesses in a model akin to that of Silicon Valley in the United States. India's industrial clusters, like the Bengaluru IT cluster with its nickname of the "Silicon Valley of India", may have started organically but certainly benefited from the encouragement of government policies and infrastructure development. The range of government policies that are important for the promotion of industrial clusters in India and elsewhere includes innovation and research and development policies, skills development and education policies, and regulatory and fiscal policies (see descriptions in section 4.2).⁵²

2. Strive to move up the digital service value-added chain.

Many multinational corporations began their investments in India to cut costs for their back-office activities. They were lured by India's comparatively low-cost workforce and affordable real estate to set up centers that focused on IT support and business process outsourcing (BPO), including data processing, document management, and customer service. As the technological and innovation ecosystem took hold in the various industrial clusters, and GCCs took root, investment evolved to focus on the provision of higher value-added knowledge process outsourcing and DDS. While costs remain a consideration for investment, the inflow of FDI is now even more attracted by the high-skilled talent pool and the innovation-friendly ecosystems fostered within the GCCs.

3. Coherence around macroeconomic policies can boost job creation.

There seems to have been an all-of-government approach to making India a serious global competitor in the realm of digital trade, and specifically DDS. Strategic planning came from the highest political level through initiatives like Digital

India, Make in India, Startup India, the Digital Communication Policy of 2018, and more recently, the Digital Personal Protection Act of 2023. The various digitalization policies were complemented by existing education policies, infrastructure development policies, tax and business regulation policies, and investment strategies.

4. Foster productivity and limit worker attrition by building a workplace culture that values social dialogue, lifelong learning, well-being, and security.

India's success in DDS owes a great deal to its large skilled workforce. To keep the competitive edge and maintain productivity in a high-demand environment, enterprises need to implement human-resource management systems that foster well-being and continuous learning. Maintaining talent is possible when trust is built between employees and the enterprise, when labour laws are respected, career growth is prioritized, and strong workplace culture/workplace values are cultivated through collaboration and social dialogue.

5. Do not cut corners in investments in digital infrastructure and quality education.

The national development of digital infrastructure requires a strong push from top levels of government with associated budgetary expenditure. In India, the push has been strong since at least the promotion of Digital India and more recently with the National Industrial Corridor Development Programme and its promotion of "smart" cities. Overcoming digital gaps also requires the outlay of sufficient funds. In India, the budgetary expenditure on "IT and Telecom" has been 2 per cent of the total national expenditure since 2023. This is complemented by national expenditure on "scientific departments" at an expected 1 per cent of the national budget in 2025–26, which feeds the national vision of becoming a global leader in

⁵² The economic literature on cluster based economic development is large and growing. A selection of literature on India's industrial clusters and their impact include: C.B. Ragothaman, S. Mamatha, Utkal Suresh Patil, M.A. Nayeem, Roop Raj, Sherin Sasi, "The Research and Influence of Industrial Clusters on Economic Development in Indian Context", *European*

Economic Letters, Vol. 14, Issue 3, 2024; Meghamrita Chakraborty, "Industrial clustering and location in India: Sectoral patterns of investment and employment", *Regional Science Policy & Practice*, Vol. 16, Issue 6, June 2024.

Artificial Intelligence and new technologies.⁵³

6. GCCs as a business model bring positive spillovers, but benefits need careful legal oversight and management.

That investment by MNCs in GCCs in India is boosting the country's exports in digital trade is undeniable, as is the boost to innovation that such investments are bringing to parent firms. The business model is such that the revenue generated through the services provided within GCCs remains with the parent company at their place of origin (largely outside of India). The power dynamics can potentially lead to clashes if Indian resources are treated as mere "back office" than part and parcel of the corporate mission. Normally, the parent company pays the GCC for its operating costs plus an agreed mark-up through the system of transfer pricing, and it is on the mark-up costing that

countries compete to attract investment.⁵⁴

For the moment, MNCs are still investing in India and setting up GCCs as the benefits of the ready workforce, infrastructure, etc. outweigh any inconvenience of negotiated mark-ups or perceived regulatory overheads. But it is a precarious balance, and the realm of DDS is becoming an increasingly competitive marketplace. Mark-up fees and what services they cover have also become the subject of tax audits and court cases in the country. Should an MNC pay mark-up costs on services provided by a third-party subcontractor used at a GCC?

The point is, the MNC-GCC model is a complex one that will function well only when a strong institutional base exists at the national level to manage taxation, labour inspection and audits, registration, and more.

⁵³ National budgets and their expenditure profiles are available at the Government of India, Ministry of Finance website: <https://www.indiabudget.gov.in/>.

⁵⁴ Rishi Harlalka, Priyam Singhania, Prachi Bhawrani and Jessie Coleman, "Indian Global Capacity Centers—What is the Cost of Delivery", Bloomberg Tax Management International Journal, 28 May 2025.

► Annex

► Table A1. Real-time job postings in India that match to the DDS-relevant sectors

ISIC 2-digit	Example of possible job from real postings
61 - Telecommunications	Network Engineer, Bengaluru - Lead the deployment, maintenance, and global operations of private data network worldwide
62 - Computer programming, consultancy and related activities	Research Development Engineer, remote - Research, design and implement Argentic AI systems, LLM pipelines, and hybrid AI workloads
63 - Information service activities	Graphic Designer, Mumbai - Design compelling graphics for social media, websites, etc - Work in alignment with UK time zones for real-time collaboration
64 - Financial service activities, except insurance and pension funding	Virtual Relationship Manager, Chennai - Manage and nurture client relationships through virtual engagement - Provide clients with personalized financial advice and solutions
65 - Insurance, reinsurance and pension funding, except compulsory social security	Business Analyst (UK pensions and retirements), Pune - Analyze key insurance business processes, designing and developing digital processes and customer journeys
66 - Activities auxiliary to financial service and insurance activities	Subject Matter Expert (SME) – Foreign Exchange Operations, Hyderabad - Experience in regulatory reporting such as Dodd-Frank - Reconciling and monitoring incoming USD settlements
68 - Real estate activities	Global Digital Asset Management Lead, Bengaluru - Lead the development of the Digital Asset Management system (DAM) - Run the adoption of the DAM in GBUs, central functions, and countries
69 - Legal and accounting activities	Legal Specialist Analyst, Mumbai - Review and analyze third-party subpoenas, court orders, and other legal documents
70 - Activities of head offices; management consultancy activities	Corporate Secretarial Officer, Mumbai - Assist with corporate secretarial work for legal entities in Middle East regions
71 - Architectural and engineering activities; technical testing and analysis	Mechanical Design Engineer, Bengaluru - Develop electrical schematics for the company's energy management offer in North America
72 - Scientific research and development	Economic Analyst, Gurugram - Conduct data analytics and economic research for U.S. and Canada
73 - Advertising and market research	Digital Marketing Specialist, Kolkata - Develop audience targeting strategies for B2B and B2C segments across different countries
74 - Other professional, scientific and technical activities	Design Engineer, Bengaluru - Analyze and solve software engineering problems

Note: The job title, place and a few key words from the description are included here.

Source: The job postings were listed on India's most used job platform, Naukri.com; accessed from 8-9 September 2025.

► **Table A2. Selected quality of work indicators for workers in the computer programming and consultancy sector (ISIC 62), financial activities sector (ISIC 64), aggregate DDS-relevant sectors (ISIC 61-74 and all sectors, for selected states and all India, 2024**

	Karnataka	Maharashtra	Tamil Nadu	India, DDS-relevant sectors	India, all sectors
Share with completed university-level or post-graduate education (%)					
Computer programming and consulting (ISIC 62)	91.5	90.7	88.1	92.3	14.0
Financial service activities (ISIC 64)	72.6	71.5	77.6	74.9	
DDS-relevant sectors (ISIC 61-74)	78.9	77.2	78.4	75.7	
Share of young workers (aged 15–29) (%)					
Computer programming and consulting (ISIC 62)	46.6	62.5	44.9	49.4	23.8
Financial service activities (ISIC 64)	29.0	37.1	42.1	34.1	
DDS-relevant sectors (ISIC 61-74)	38.4	42.5	39.7	36.4	
Share in formal employment (%)					
Computer programming and consulting (ISIC 62)	95.7	85.3	94.4	88.2	11.6
Financial service activities (ISIC 64)	86.4	74.8	74.9	75.3	
DDS-relevant sectors (ISIC 61-74)	76.8	62.4	69.5	59.3	
Share in paid employment (%)					
Computer programming and consulting (ISIC 62)	99.6	93.9	98.0	95.5	24.2
Financial service activities (ISIC 64)	95.1	91.4	88.9	90.5	
DDS-relevant sectors (ISIC 61-74)	84.8	79.1	79.3	73.7	
Share in high-skilled occupations (%)					
Computer programming and consulting (ISIC 62)	91.4	86.6	84.6	90.3	11.6
Financial service activities (ISIC 64)	41.1	50.6	49.4	46.4	
DDS-relevant sectors (ISIC 61-74)	80.2	74.4	73.6	73.2	
Share covered by social protection (%)					
Computer programming and consulting (ISIC 62)	96.1	85.1	95.4	88.8	10.4**
Financial service activities (ISIC 64)	85.6	74.5	74.3	74.9	
DDS-relevant sectors (ISIC 61-74)*	76.7	61.2	69.3	58.8	
Average hours actually worked per week (hours)					
Computer programming and consulting (ISIC 62)				58.6	45.7
Financial service activities (ISIC 64)				54.4	
DDS-relevant sectors (ISIC 61-74)				56.4	
Share working more than 48 hours per week (%)					
Computer programming and consulting (ISIC 62)	100	99.3	98.7	98.9	50.1
Financial service activities (ISIC 64)	96.9	92.6	94.3	94.8	
DDS-relevant sectors (ISIC 61-74)	95.1	93.6	91.5	91.1	
Share working more than 60 hours per week (%)					
Computer programming and consulting (ISIC 62)				33.4	15.2
Financial service activities (ISIC 64)				17.6	
DDS-relevant sectors (ISIC 61-74)				25.2	

Note: *For the DDS-relevant aggregate in this indicator, the incidence of responses given as "not stated" was 15 per cent for Karnataka, 22 per cent for Maharashtra, 21 per cent for Tamil Nadu, and 27 per cent for all India. Incidences of "not stated" were negligible for the specific sectoral results. ** The share of "not stated" for India, all sectors was 59 per cent.

Source: Estimates based on the Periodic Labour Force Survey (microdata).

► **ILO Policy Brief:** India is a major player in the digital services market

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