ORF OBSERVER RESEARCH FOUNDATION

INDIA EMPLOYMENT OUTLOOK 2030

Navigating Sectoral Trends and Competencies

Arya Roy Bardhan | Debosmita Sarkar
Soumya Bhowmick | Nilanjan Ghosh

INDIA EMPLOYMENT OUTLOOK 2030

Navigating Sectoral Trends and Competencies

Attribution: Arya Roy Bardhan, Debosmita Sarkar, Soumya Bhowmick and Nilanjan Ghosh, *India Employment Outlook 2030: Navigating Sectoral Trends and Competencies,* April 2024, Observer Research Foundation.

Observer Research Foundation
20 Rouse Avenue, Institutional Area
New Delhi 110002
India
contactus@orfonline.org
www.orfonline.org

Design & Layout: Rahil Miya Shaikh

All images used in this report are from Getty Images.
15 - Jelina Preethi; 21 - hadynyah;
29 - mantosh; 41 - Dinodia Photo;
65 - Noah Seelam; 73 - Mayur Kakade;
79 - R.M. Nunes

Contents

Executive Summary

India's job market is experiencing a transformation as the country has become the world's fastest growing large economy in the aftermath of the COVID-19 pandemic. The country's young population, whose median age is 28.4 years, holds a key to fuelling economic expansion. With a GDP growth rate of 7.8 percent, India could potentially achieve its target of becoming a US$5-trillion economy by 2026-27, with such growth being underpinned by strong private consumption and public investment.

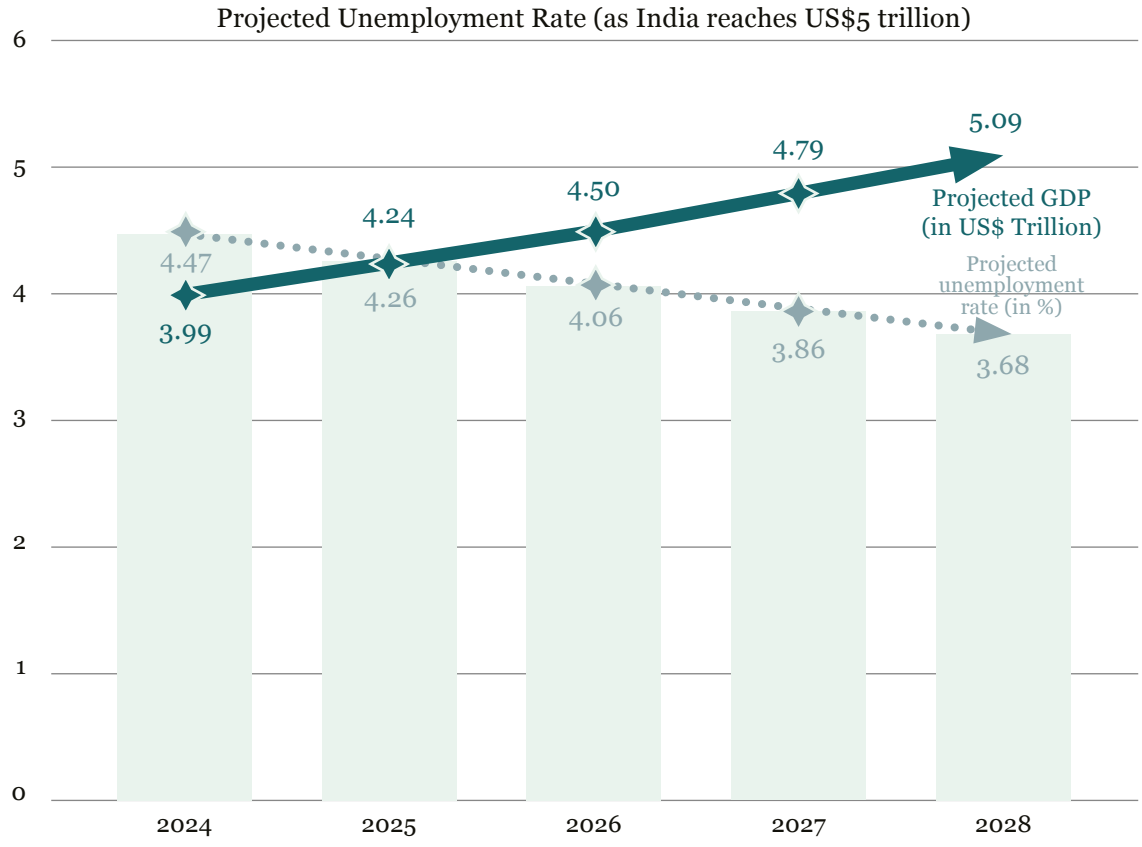
These goals are set against the ongoing shifts in the global landscape and dynamics of manufacturing, brought about by the pandemic, geopolitical

tensions, and supply disruptions. Notably, the import demand of the United States (US) has pivoted away from China towards India due to the latter's competitive cost structure, abundant labour resources, and burgeoning domestic market. In India, manufacturing is a vital sector that has consistently contributed 17-19 percent to the Gross Value Added (GVA). The Indian government has prioritised manufacturing through initiatives such as Make in India, Production Linked Incentive Schemes, and SAMARTH Udyog. The service sector also contributes a significant share to the GVA, exhibiting potential for generating employment and boosting economic growth.

Despite its contributions to the economy, employment in the manufacturing sector has stagnated and even declined, especially in the urban sector, over the last decade. Technological advancements have led to a declining capital-to-output ratio and an increasing capital-to-labour ratio, which raise questions about the manufacturing sector's capacity to continue absorbing India's expanding workforce. The employment outlook for India's manufacturing sector suggests that overall employment in the sector will continue to decline.

Which job markets should India's youth look to in the next decade?

Fig. 1: Projected Unemployment Rate in India



Source: Authors' own, using data from IMF[1] and ILO[2]

With the highest employment elasticity to economic growth, India's service sector presents a promising outlook. This report illuminates ten opportunity sub-sectors within the service sector that have the greatest potential for growth and employment generation for the Indian economy by 2030. These opportunity sectors are: digital services (Fourth Industrial Revolution or 4IR, content economy); financial services (banking and insurance); health services; hospitality services; consumer retail services; global capability centres; renewable energy; e-commerce; MSMEs; and the startup ecosystem. Together, these sectors have the potential to create more than 100 million new jobs by 2030.

This report undertakes an estimation exercise to calculate India's employment elasticity. Sectoral employment elasticities are computed over short- and long-run periods and are segregated by region and gender. The authors then explore the policy implications of the inferences from the estimates.

The projected decline in unemployment with the achievement of the US$5-trillion economy goal is as follows:

Additional Employment Generation Capacity of US$5-trillion Economy	22%
	97 basis points decline in unemployment rate

The service sector has been identified as having the highest employment elasticity.

Table 1: Sectoral Long-Run Employment Elasticity

Employment Elasticity	Urban	Rural
Primary Sector	-1.28	-0.44
Secondary Sector	(0.01)	0.81
Tertiary Sector	0.12	0.53

The service sector also has the potential to generate sustainable jobs and boost female labour force participation rates.

Table 2: Sectoral Employment Elasticity, by Gender

Employment Elasticity	Male	Female
Primary Sector	-0.63	-0.48
Secondary Sector	0.34	0.13
Tertiary Sector	0.10	0.31

The report identifies key sectors and outlines policies that can catalyse inclusive growth with job creation.

To support India's expanding employment outlook over the next decade, the following key recommendations are made:

1. Policymakers should collaborate with educational institutions, private sector employers, and civil society organisations to identify employability gaps. Curriculum adjustments and programme designs should align with evolving labour market needs to enhance the youth's employability and productivity.

2. Skill sets must be diversified, and cutting-edge technology skills and technology-proof job skills should be nurtured. Formal mentorship programs and bridge courses are required for continuous human capital development.

3. Governments and other key stakeholders across economic sectors must facilitate natural transitions in employment sectors, emphasising domains with high employment elasticity, such as tourism, hospitality, financial services, and healthcare. Growth in these service industries must be prioritised to absorb the surplus labour released due to technological advancements in Indian manufacturing.

4 It is crucial to create an enabling environment for entrepreneurship to stimulate job creation and support the expansion of the startup ecosystem to encourage innovation and promote youth participation. This can also empower female workforce participation through the provision of small-business support and by fostering gender-sensitive workplace environments.

5 Public-private collaboration is critical for developing job-ready, semi-skilled, and skilled workforces and establishing or strengthening R&D departments within businesses to grow innovation and create employment opportunities.

6 Public policies and initiatives such as Digital India, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Startup India, Production Linked Incentive (PLI) Schemes, and PM Vishwakarma Yojana must be leveraged to stimulate employment. The government must negotiate mutually beneficial trade agreements, particularly for labour-intensive export sectors, to attract investments and create jobs in these sectors.

India's employment outlook for 2030 presents a landscape of both challenges and opportunities; harnessing these opportunities necessitates coordinated and targeted action by relevant stakeholders, including individuals, the private sector, civil society, and the government. The aim is to make India's vision of a digitally empowered, skilled, innovative, and self-reliant economy a reality.

I.

Introduction

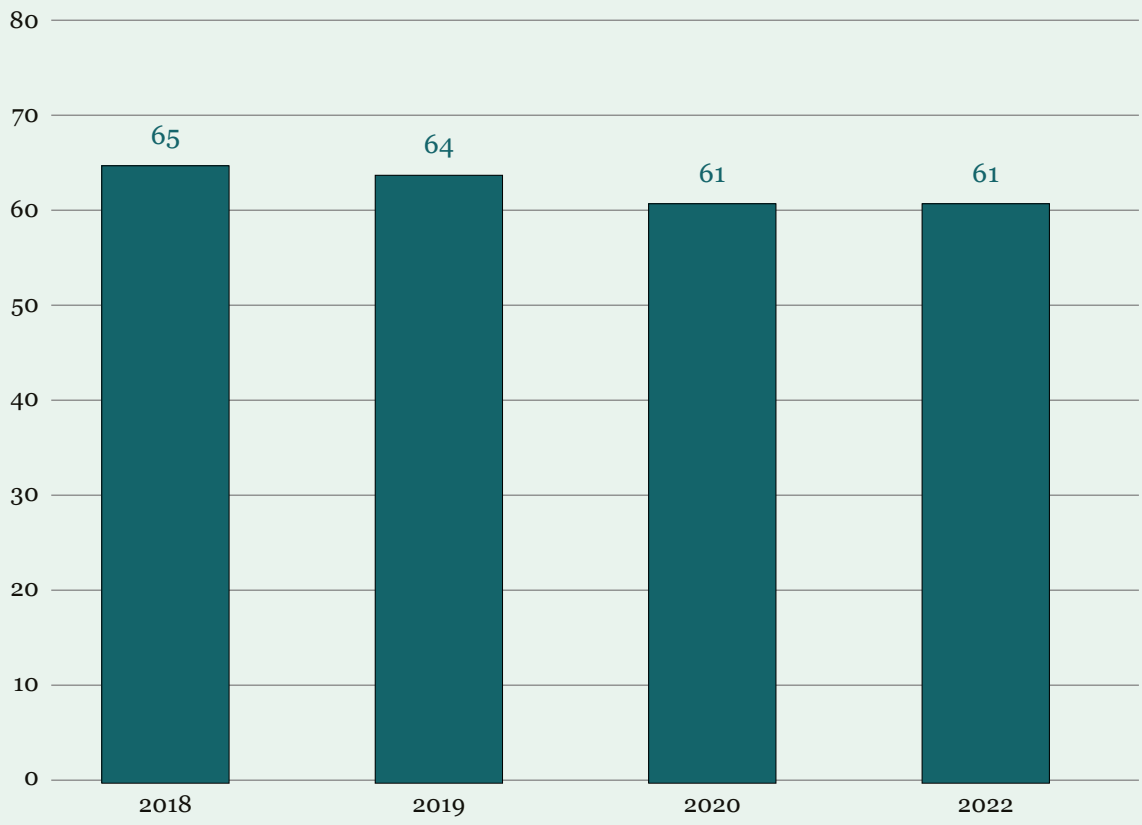
India stands at the brink of a new era in its employment landscape. It has become the fastest-growing large economy in the post-pandemic world, and has a relatively young population, with a median age of 28.4 years.[3] There is massive potential to reap the demographic dividend and the consumption potential of its young populace for economic growth. With a GDP growth rate of 7.8 percent,[4] India is expected to reach its US$5-trillion economy goal by 2026-27. Both private consumption and public investment have remained robust, driving up the scale of economic production. There was rapid growth in the service sector in the April-June quarter of FY 2023-24, with the financial, real estate, and professional services sector growing by 12.2 percent. It was accompanied by a growth of 9.2 percent on a year-to-year basis in trade, hotels, transport, and communication services.[5]

The evolution of India's employment landscape has been shaped by demographic shifts, economic reforms, technological advancements, and global dynamics. Since 2000, the number of men employed in the agricultural sector has been constantly declining, both in urban and rural regions.[6] During the same period, while the rate of decline has not been as steady for women, their presence in the service sector has solidified.[7] Over the past three decades,[8] India has moved from an agrarian economy to an increasingly service-oriented one, with industry also playing a significant role in certain sectors and sub-sectors.

Why Employment Trends in India Matter

Employment is not merely about statistical figures; it is the means by which individuals and families secure their livelihoods, gain access to education and healthcare, and contribute to the nation's economic growth. Furthermore, employment trends have far-reaching implications for social stability and inclusivity. A well-employed population can help drive the country to reducing income inequality and poverty, improving living standards, and enhancing social cohesion. Therefore, understanding and actively shaping employment patterns are not just economic but also social imperatives. Despite significant economic growth, India's overall performance in SDG8 (Decent Work and Economic Growth) has been relatively stagnant, and there is much to be done with respect to quality employment generation in the country.

Fig. 2: All-India SDG8 Score



Source: NITI Aayog[a]

Projections from various sources paint a picture of resilience, with India poised to experience robust real GDP growth between FY 2023-24 and 2032-33, averaging 8.24 percent per annum. Additionally, as of mid-January 2023, with a population of 1.417 billion, India has become the world's most populous nation, surpassing China. This demographic spurt presents a unique opportunity for India, as the share of the working-age population rises and reaches 59 percent by 2041.[9] Harnessing this demographic dividend will depend on confronting the twin challenges of effective resource management and the provision of opportunities to the burgeoning workforce.

With this understanding, this report explores and analyses India's employment outlook over this decade. In particular, it seeks to address a number of critical questions that lie at the intersection of India's labour market economics, policy, and corporate strategy. The report explores the likely employment landscape in India over the next several years, identifies the sectors that hold the most promise for employment generation, and examines the driving forces behind these trends. Furthermore, it undertakes a quantitative analysis of the macro and sectoral employment-generation potential of the Indian economy, identifying the service sector as a crucial job-creating industry. Finally, recognising the pivotal role of policy in shaping employment outcomes, the report offers actionable recommendations for government policymakers, corporate leaders, and other stakeholders to boost employment while enhancing labour productivity.

In the next several years, India could reap its demographic dividend and the consumption potential of its youth for economic growth.

II.

India's Employment Outlook: Baseline Analysis

Projections from the Economic Survey 2022-23 peg India's growth range from 6-6.8 percent in FY 2023-24, with a baseline GDP growth of 6.5 percent in real terms.[10] At the same time, however, inflation remains a concern. Recent fiscal and monetary policies have attempted to manage inflation, including the central bank's increase of key interest rates in 2022,[11] along with other fiscal measures. Various economists anticipate a nominal GDP growth between 8 and 9 percent in FY 2024, primarily due to these fiscal policies.[12] As shown in Figure 3, over longer time periods, GDP and unemployment have a negative relationship that is bidirectional—i.e., lower unemployment can facilitate higher growth rates. India needs to correctly assess its socio-economic dynamics to balance its priorities between higher employment and stable inflation and tread the fine line of sustainable growth.

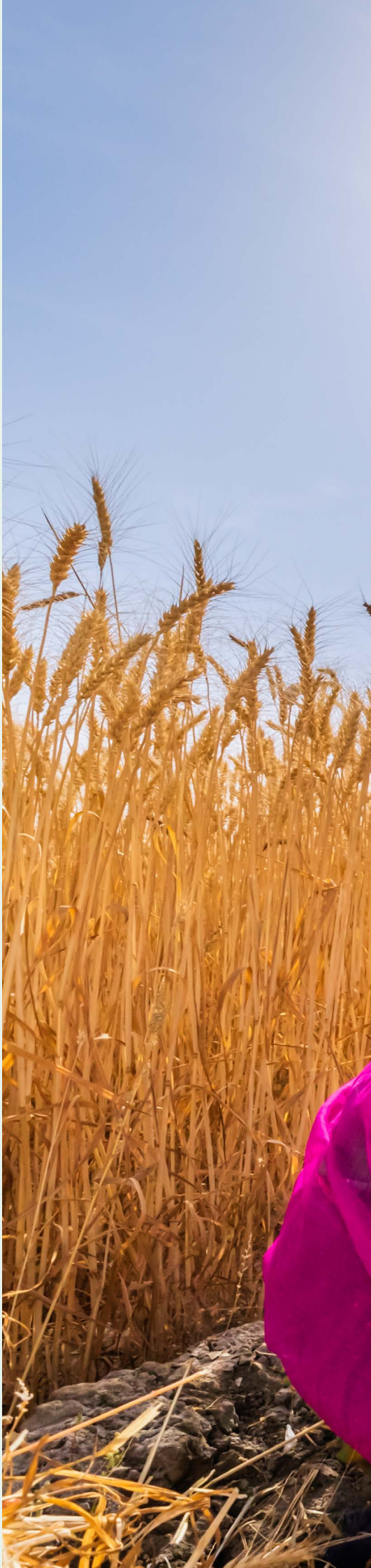
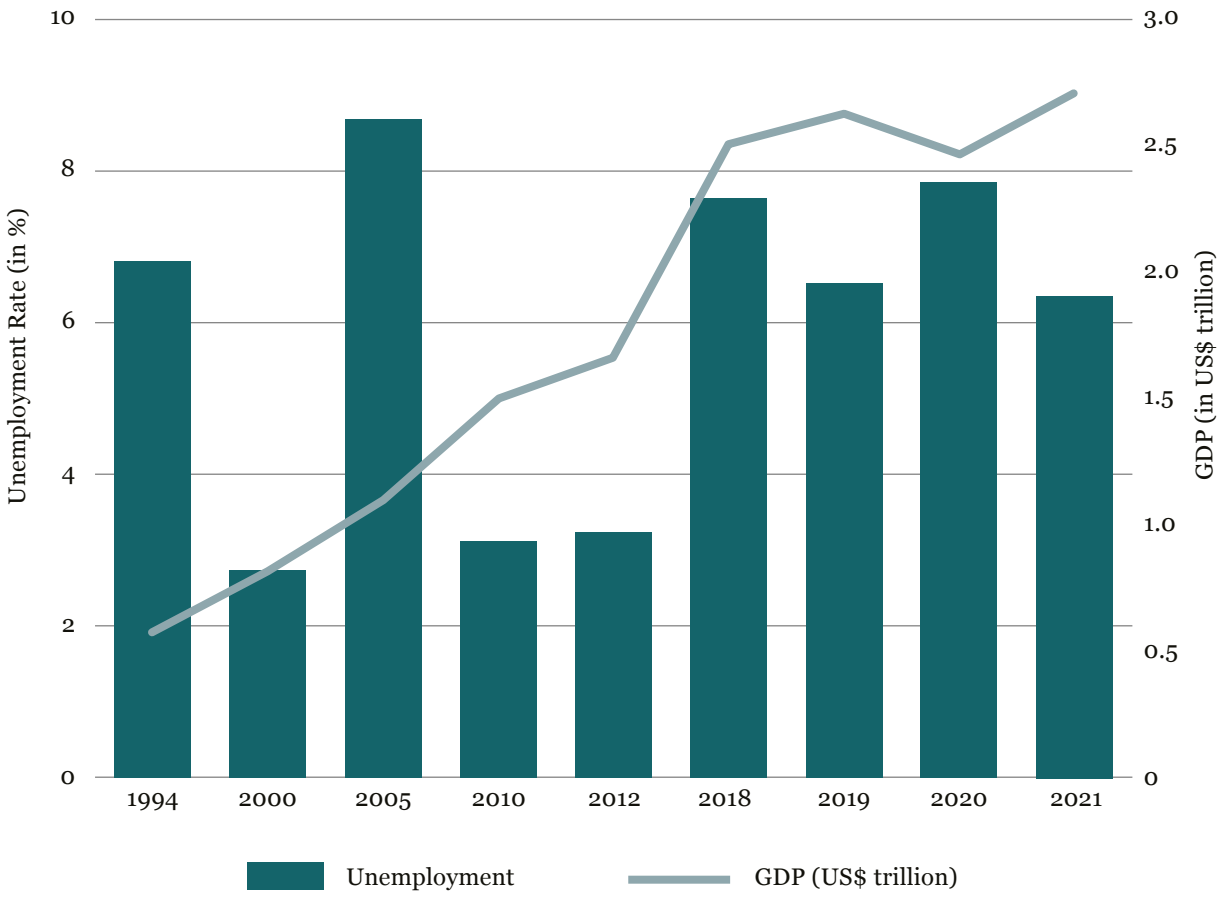


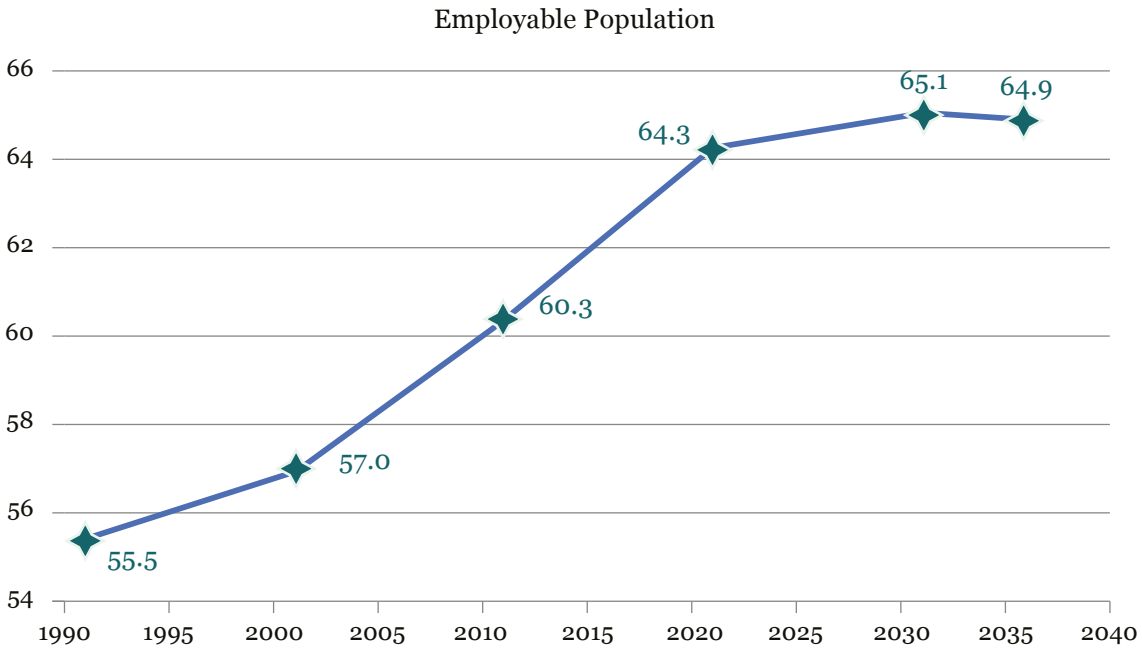
Fig. 3: India's Unemployment and GDP Rates



Sources: IILOStat[13] *and World Bank*[14]

In mid-January 2023, India became the world's most populous nation, with its 1.417 billion people surpassing China's figure of 1.412 billion. While the population growth rate has slowed over the past 50 years, a potential demographic dividend can still be leveraged through education, skill development, and job creation; at the same time, it necessitates effective resource management and opportunity provision for the growing workforce.

Fig. 4: Projected Percentage of Employable Indian Population (15-59 Years)



Source: Indiastat[16]

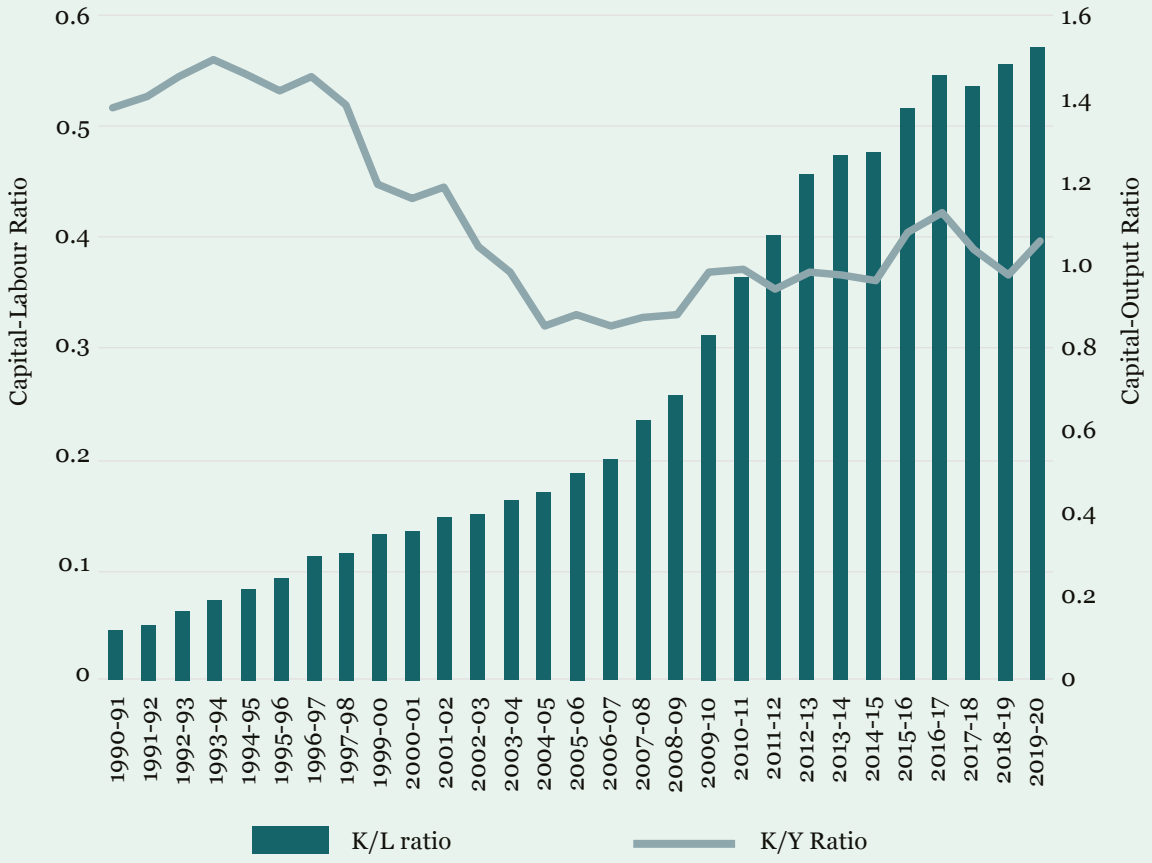
In Focus: Employment and Growth in Indian Industry (and Manufacturing)

In the context of the C+1 landscape,[a] India's domestic manufacturing has the opportunity to strengthen its position within Global Value Chains (GVCs) to increase the scale of its operations. While developments in global manufacturing and industry value chains make it an opportune moment for India to integrate itself into the GVCs, the challenge of balancing scale with labour requirements in this sector has become even more pertinent. The expansion of modern manufacturing will require more significant capital and labour inputs. With the manufacturing sector poised to become more capital-intensive, the productive efficiency of these capital inputs will increase. This will lead to a decline in the capital-to-output ratio and a rise in the capital-to-labour ratio. India is already witnessing these trends.

---

[a] 'C+1' means 'China + 1'. Over the last three decades, Western countries have heavily invested in China, especially in the manufacturing sector. However, this has increased supply chain dependencies and vulnerabilities, causing countries to adopt a 'China + 1' strategy where they diversify their investments in other promising developing nations such as India and Vietnam.

Fig. 5: Capital-to-Labour and Capital-to-Output Ratios of Indian Industries



Source: RBI[18]

The reduced demand for labour in Indian manufacturing, therefore, will generate a surplus labour force in the growing Indian youth population, which would pose a critical challenge to Indian job markets in the coming decade. At the same time, labour-intensive sub-sectors within manufacturing can play a pivotal role as a cushion during this transition. Labour-intensive export sectors, such as toys, textiles, footwear, and furniture, hold potential to generate a substantial share of domestic jobs that can support growth and employment in the medium term.

Reduced demand for labour in manufacturing will generate a surplus labour force in the growing Indian youth population, posing a challenge to the country's job markets.

III.

Employment Elasticity: Estimation and Projection

The potential surplus labour in the economy can be generated from two sources: the limited capacity of the agricultural sector and the transformation of capital-to-labour ratio in manufacturing. Both these cases reflect the limitations of traditional employment-generating sectors and the need for policies to reconcile the excess supply of labour. This section examines broad industry-wise employment potentials and extrapolates them to estimate the job-creating potential associated with Indian growth. The analysis is based on the fundamental relationship between national income and unemployment, as highlighted in the previous section (Figure 3). Figure 6 compares the movement of the unemployment rate with the real growth rate.

Fig. 6: Real GDP Growth Rate and Unemployment Rate

Source: ILOStat[19] *and RBI*[20]

A primary factor that causes the divide between growth and development is the creation of jobs: Growth does not always translate to employment, thus imposing a serious socio-economic constraint, in a phenomenon known as 'jobless growth'. Therefore, a good measure to check the employment efficiency of economic growth is the elasticity of employment or employment intensity of growth[21]—referred to as 'employment elasticity' for the purposes of this report—and denotes the ratio of employment generation to economic growth, or the percentage increase in employment due to a percentage increase in national income.

We define employment elasticity as follows:

$$\text{Employment Elasticity } (\varepsilon) = \frac{dE/E}{dY/Y}$$

Where E is the employment rate and Y is the national income.

Alternatively, for the macro-economy, it can also be defined as:

$$\text{Employment Elasticity } (\varepsilon) = -\frac{dU/U}{dY/Y}$$

Where U is the unemployment rate.

The percentage decline in the unemployment rate due a percentage increase in output also provides the same estimate of employment elasticity. However, this is not valid for sectors since there is no sectoral unemployment. This is contingent upon the assumption that the employable labour force has remained constant during the period of analysis.

National Estimation and Projection

To calculate the employment elasticity of Indian economic growth, we used the modelled unemployment estimates of the International Labour Organization (ILO) and the real GDP at market prices (i.e., at constant prices). We considered the period 2004-05 to 2022-23 on the basis of data availability after 2000. Further, to calculate short-run elasticity, we considered the period 2014-15 to 2022-23. The 2014-15 period was chosen since it was when the current national political dispensation first took the helm. Further, the eight-year short-run period is also a fair measure of the time that remains to meet the 2030 SDGs. The employment elasticities were found to be as follows:

National Level	
Long-run	Short-run
0.31	0.95

The estimates suggest that, over the longer run, a 1-percent increase in GDP will cause employment to increase by 0.31 percent. In the shorter run, the effects of growth are stronger, with a 1-percent increase leading to a 0.95-percent increase in employment. The short-run efficiency can be explained by the demand-driven growth structure of the Indian economy, where there is crowding out in the longer run that causes the effects of growth to dissipate. This reflects the idea that the multiplier effect is the strongest in the first round, with a gradual fading out, which leads to ever smaller rounds of expansion. In other words, the

immediate increase in economic activities following from economic growth through the consumption channel is stronger than subsequent expansions through the multiplier. This also delineates the need for sustainable employment, which can withstand sporadic reductions in economic output.

This estimate can now be used to project the employment-generation capacity of India's growth. With India on the path to becoming a US$5-trillion economy, the job-creating potential of this trajectory needs to be measured. We calculated the projected decline in unemployment, or the increase in employment, using the short-run estimate above.

We made a few assumptions to arrive at the projected estimates. The GDP was taken to be US$3.75 trillion at the end of 2023.[22] Based on the International Monetary Fund's (IMF) projections, the real growth rate is taken to be 6.3 percent.[23] This is a conservative estimate, and the projected growth rate is higher among other sources. However, this growth rate was considered in order to maintain uniformity and minimise undue optimism in the projections. At this rate, the Indian economy will surpass the US$5-trillion mark by early 2028.

The projected unemployment in any year is given by:

$$u_n=(1-\varepsilon_s.g)u_{n-1},$$

Where u_n is unemployment in period *n,* ε_s is the short-run employment elasticity, and g is the growth rate.

The projected estimates are shown in Table 3.

Table 3: Projected Unemployment Rate vis-a-vis Economic Growth

Forecast	Projected GDP (in US$ Trillion)	Projected Unemployment Rate (%)
2024	3.99	4.42
2025	4.24	4.15
2026	4.50	3.91
2027	4.79	3.67
2028	5.09	3.45

Thus, on its path to becoming a US$5-trillion economy, India will reduce unemployment by 97 basis points, which translates to an increase in employment by 22 percent.

Additional Employment Generation Capacity of US$5-trillion Economy	22%

Sectoral Estimation

Employment elasticity can also be used as an identifier for key sectors. Sectors with positive and high employment elasticities have greater job-creating potential. These industries merit higher investment and safeguard social interests, in addition to driving economic growth. Thus, we used employment elasticity to assess the efficiency of the primary, secondary, and tertiary sectors.[b]

The same method of estimation is followed here. One point of difference is the growth rate considered. For the sectoral outputs, we considered the GVA at the basic prices of each sector.[26] For the employment rate, we considered the employment ratios, i.e., the number of persons employed in each sector per thousand employed persons.[27] This also explains the negative elasticity, where growth in output might face a reduction in the employment share. Identical long-run and short-run periods are considered. In addition, urban and rural elasticities were estimated separately.

[b] The primary sector comprises agriculture and allied activities; the secondary sector comprises mining, manufacturing, electricity, gas, water, and construction; and the tertiary sector includes trade, hotel and restaurant, transport, storage and communication, and other services. Thus, the primary, secondary, and tertiary sectors can be broadly classified as agriculture, manufacturing, and service, respectively.

Table 4: Employment Elasticity in the Long Run

Long Run		
Employment Elasticity	**Urban**	**Rural**
Primary Sector	-1.28	-0.44
Secondary Sector	(0.01)	0.81
Tertiary Sector	0.12	0.53

Source: Authors' own[c]

[c] Figures reported in brackets are not statistically significant at the 90 percent confidence interval.

Table 5: Employment Elasticity in the Short Run

Short-Run		
Employment Elasticity	**Urban**	**Rural**
Primary Sector	(-1.01)	-0.46
Secondary Sector	(-0.18)	1.06
Tertiary Sector	0.28	1.11

Source: Authors' own[d]

The primary sector exhibits negative employment elasticity across regions and timeframes. The primary sector has no significant job-creation ability in the short run in urban areas, as the employment elasticity is negative and insignificant. This reflects how agricultural productivity is augmented with technological progress and increasing capital intensity. Moreover, in the rural regions, the primary sector has failed to exhibit significant employment-generation potential. The decline in employment is further explained through the expansion of manufacturing and service activities, which absorb the surplus labour with higher wages.[28] While the secondary sector exhibits negative elasticity in urban areas, the effect is insignificant, while it has a positive employment-

[d] Figures reported in brackets are not statistically significant at the 90 percent confidence interval.

generation ability in the rural areas. The establishment of factories and continued government stimulus to manufacturing has created significant opportunities in this sector.

However, the negative elasticity in urban manufacturing is the result of an increase in services, as seen in the data (see Appendix 4). Services that are labour-intensive across skill sets have the potential to drive up aggregate employment in the economy. This is evident from the positive elasticity across urban and rural areas in both short- and long-run periods. This does not mean that the role of manufacturing in employment generation should be neglected. Manufacturing growth entails that services need to be established in order to complement manufacturing. Thus, the focus needs to shift towards stimulating both manufacturing and services to increase access to jobs. The short-run effect of service growth on the rural population also needs to be considered since it has a near-proportionate employment-generation capacity.

Some useful inferences can be drawn from the gender-segregated employment elasticities across sectors. As shown in Table 6, male elasticity is higher for the manufacturing sector, which implies the tendency of the manufacturing sector to attract more male workers. However, the opposite holds true for services, where female elasticity is almost double that of male in the tertiary sector. This reveals that equitable employment can be ensured via services growth. (Similar results are found for the short-run period, as shown in Appendix 7.)

Table 6: Employment Elasticity, by Gender

Long-Run		
Employment Elasticity	**Male**	**Female**
Primary Sector	-0.63	-0.48
Secondary Sector	0.34	0.13
Tertiary Sector	0.10	0.31

Source: Authors' own

Thus, the analysis of employment elasticity reveals that economic growth holds the key to employment generation. Jobless growth does not pertain to an economy which has an underutilised capacity and a burgeoning labour force, especially when services contribute more than 50 percent of the GVA. Further, there needs to be increased emphasis on services-led growth to ensure higher employment as well as more equitable employment. This report delves into the possible avenues for services-led growth by identifying key sunrise sectors that could enable a more sustainable growth path.

IV.

Opportunity Sectors for Service-Led Employment in India

Against this backdrop, it is imperative to explore how India can leverage its growth opportunities and address the associated challenges to ensure sustainable job creation and increased employment opportunities for its growing population. The service sector in India, despite employing a lower percentage of the population (30 percent) compared to its East Asian counterparts (49 percent),[29] has been consistently contributing the largest share of the national GVA. This trend underscores the need for India to harness the growth potential of the service sector to create more employment opportunities.

The current shift towards a service-led economy is contributing to overall job growth, yet it comes with its share of challenges. India's labour market is composed predominantly of unskilled and low-skilled workers, with approximately 53

percent of its labour force having only basic education.[e,30] This composition poses a challenge for equitable job distribution within the rapidly growing service sector, which demands higher skill levels. Without deliberate efforts to create quality employment opportunities for those with lower skill sets, the economy faces the risk of increasing labour market polarisation. Moreover, even when lower-skilled workers do find employment, a large proportion of these jobs are in the informal sector. In the post-liberalisation period,[31] the informal sector has accounted for most new jobs for both women and men, underscoring the precarious nature of employment growth as they often lack the security and benefits accorded by the formal sector.

Employment elasticity in the service sector—which measures how employment growth is responsive to GDP growth—shows a higher rate for women and the rural population. This is partly due to their historically lower employment rates in this sector. However, to genuinely benefit these demographies, the growth in service-sector employment must be strategically designed to be inclusive and to address the barriers they face in accessing these opportunities.

Therefore, there are tremendous opportunities in the service sector, which has a high growth potential over the next decade. A significant portion (49.1 percent) of the banking sector, which employs 1.6 million, works in the public sector. Furthermore, the employment of gig workers, currently constituting 1.5 percent of the workforce, is expected to increase to 4.1 percent by 2029-30.[32]

The employment landscape of India is evolving, with numerous sectors offering substantial growth potential. Government initiatives and policies as well as a dynamic workforce also create a

[e] This report defines this as primary education or lower secondary education, according to the International Standard Classification of Education 2011.

conducive environment for job creation. MSMEs and startups are also considered as cross-sectoral entities that provide a more accurate perspective on their role and potential impact within the economy, underscoring their significance across industry sectors in promoting inclusive economic growth and development. As India continues on its path of economic development, these opportunity sectors are expected to play a pivotal role in shaping the country's employment outlook.

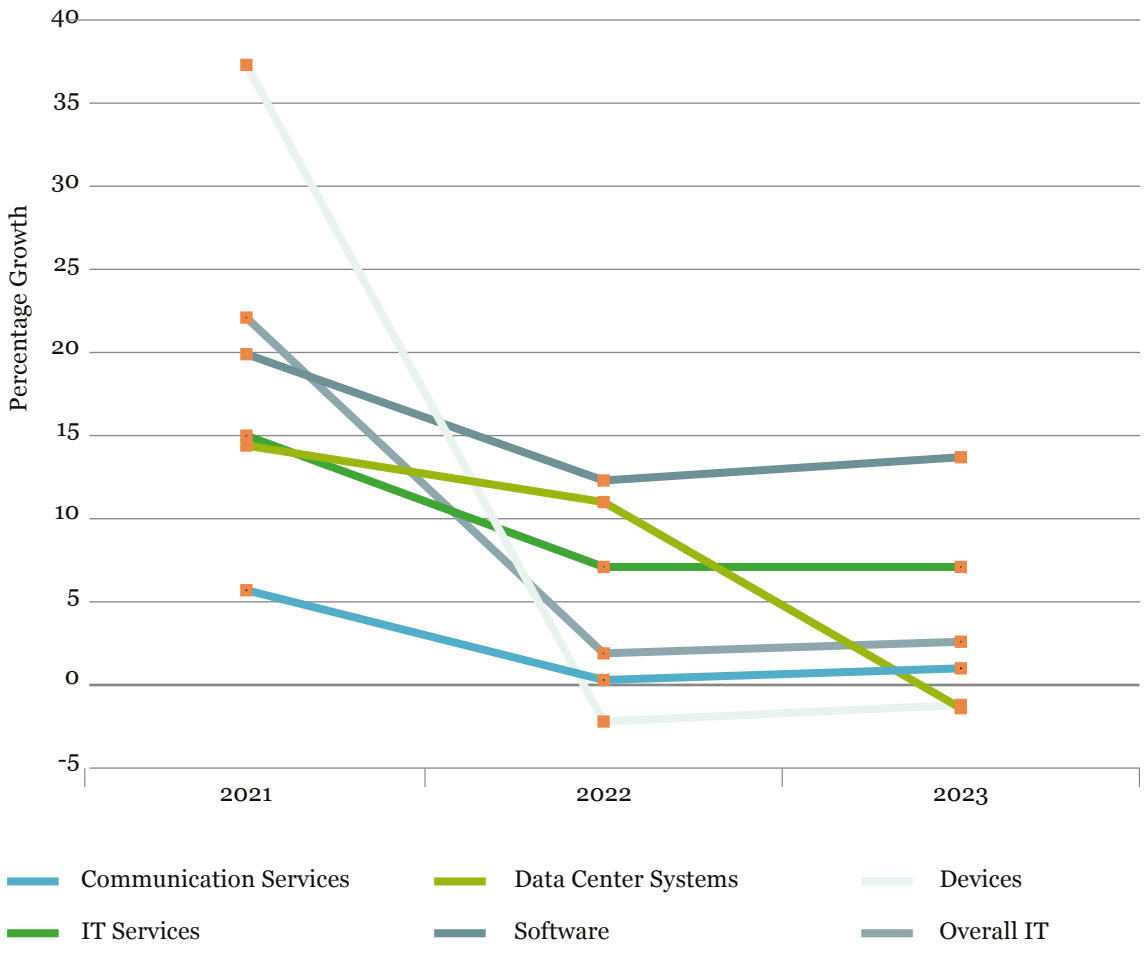
Fig. 7: Ten Opportunity Sectors for Employment Generation in India

Source: Authors' own

Digital Services

India's prominence in the digital landscape is underscored by its leadership in the Fourth Industrial Revolution (4IR),[33] which can unlock substantial employment opportunities. India's IT and software development expertise has solidified its position as a global hub for digital services. This includes software development, data analytics, and content creation, all of them offering employment potential. The 4IR has fostered the innovation and integration of digital technologies across various sectors and created a demand for skilled professionals in fields like software engineering, data science, and digital marketing. As a result, India's workforce is actively contributing to developing and deploying 4IR technologies, further bolstering its position as a global leader in digital services. The digital economy can potentially create 60-65 million jobs by 2025,[34] most of which would require functional digital skills.

Fig. 8: Growth Rate of India's IT Industry, by Sector

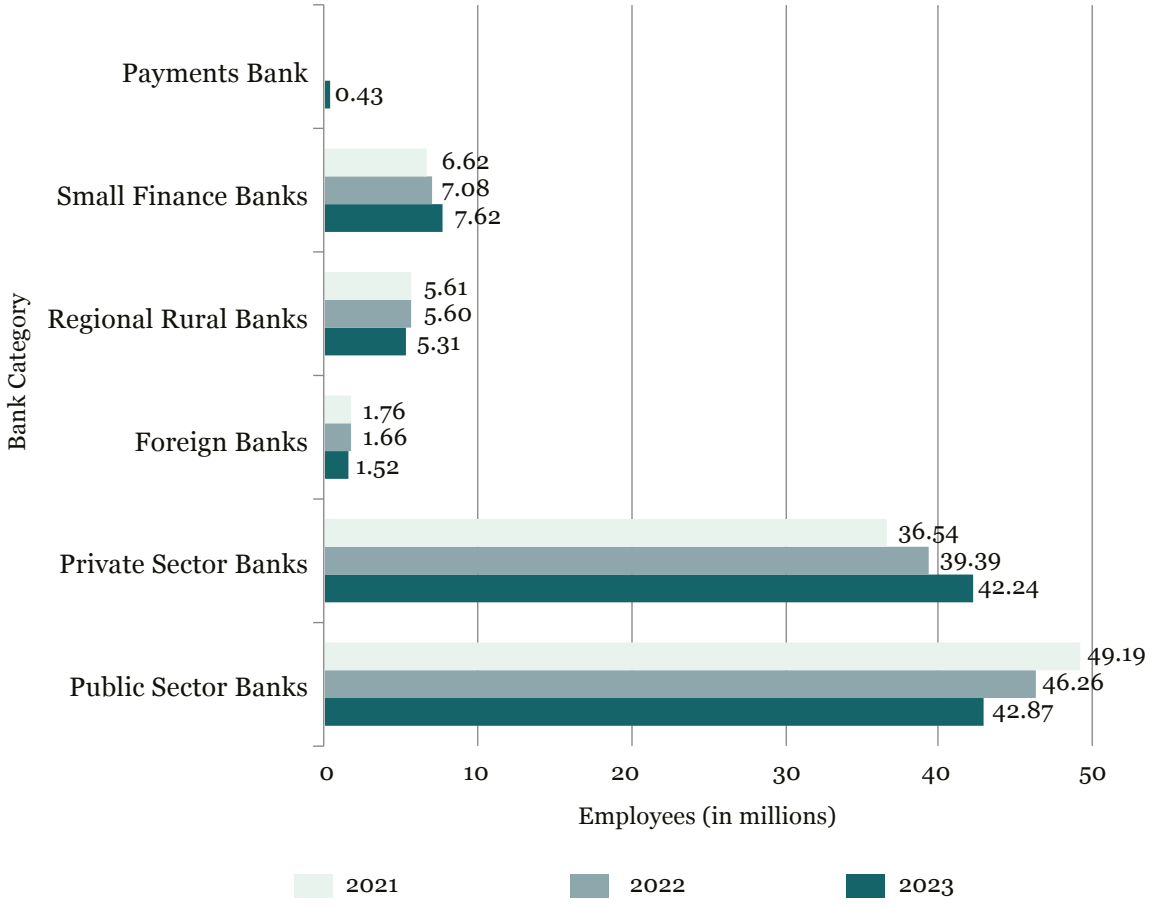


Source: US Department of Commerce[35]

Financial Services

The financial services sector in India is undergoing expansion, driven by the increasing demand for banking and insurance services. Moreover, the emergence of fintech innovations is reshaping the industry and offering new employment opportunities, including increased demand for professionals who are skilled in mobile and online banking technologies, customer experience design, financial analysis, data science, machine learning, cybersecurity, underwriting, and insurance technology solutions.[36] The fusion of traditional financial services with fintech innovations improves efficiency and creates employment opportunities across various skill sets. The private wealth management industry also has significant potential. India is expected to have 6.11 lakh High Net-Worth Individuals (HNWIs) by 2025, which will lead to the country becoming the fourth-largest private wealth market globally by 2028. The insurance sector, which is expected to grow to US$250 billion by 2025, will further offer India an opportunity of US$78 billion in additional life insurance premiums during 2020-30.[37]

Fig. 9: Employees in Scheduled Commercial Banks (in Millions)

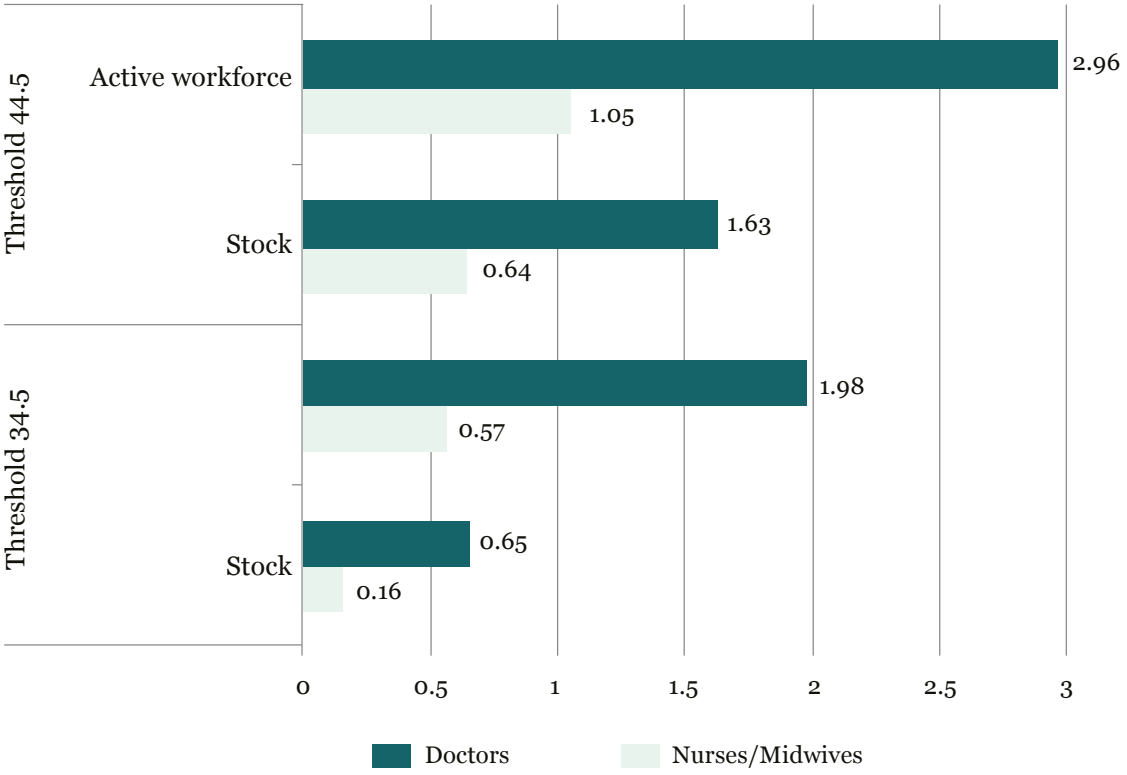


Source: RBI[38]

Health Services

The Indian healthcare sector is growing due to various factors.[39] First, an ageing population is creating an increasing demand for healthcare services, particularly for age-related and chronic illnesses. Second, heightened healthcare awareness has increased the need for medical services and preventive care. Additionally, the rise in non-communicable diseases has sustained the demand for healthcare services and specialised treatments. Technological advancements, including telemedicine and health apps, have enhanced healthcare accessibility, especially after the COVID-19 pandemic. Substantial investments and infrastructure development, including public-private partnerships, are also contributing to sector expansion. Therefore, there is a considerable increase in job opportunities within healthcare, with hospitals, clinics, pharmaceutical companies, and telemedicine providers actively recruiting healthcare professionals, such as doctors, nurses, pharmacists, and technologists. Employing 4.7 million people,[40] the healthcare market is one of India's largest employers and is only expected to grow further. The hospital industry, which was valued at US$61.79 billion in 2017, was estimated to reach US$132 billion by the end of 2023.[41]

Fig. 10: Estimated Shortages (in Millions) of Health Workers in India at Different Health Worker-Population Density Thresholds (2030)



Source: WHO[42]

Hospitality Services

India's tourism industry provides employment prospects in sectors like hotel management, travel, culinary arts, transportation, and other related services.[43] The rebound of the tourism sector following the pandemic has contributed to economic development and job creation. In hotel management, roles range from hotel managers to chefs. Travel agencies that organise personalised travel experiences have led to increased opportunities for travel agents and guides. India's diverse culinary traditions create a demand for chefs and cooks, while transportation networks and aviation services offer jobs in airlines and airports. Additionally, tourism-related services, including souvenir shops and entertainment, expand the spectrum of employment opportunities. As the industry adapts to evolving traveller preferences, it contributes to India's economic growth and job market. With a current market size of US$23.5 billion and a CAGR of 4.73 percent, the industry is expected to grow to US$29.61 billion by 2028.[44]

Table 7: Targets of Draft Tourism Policy, 2022

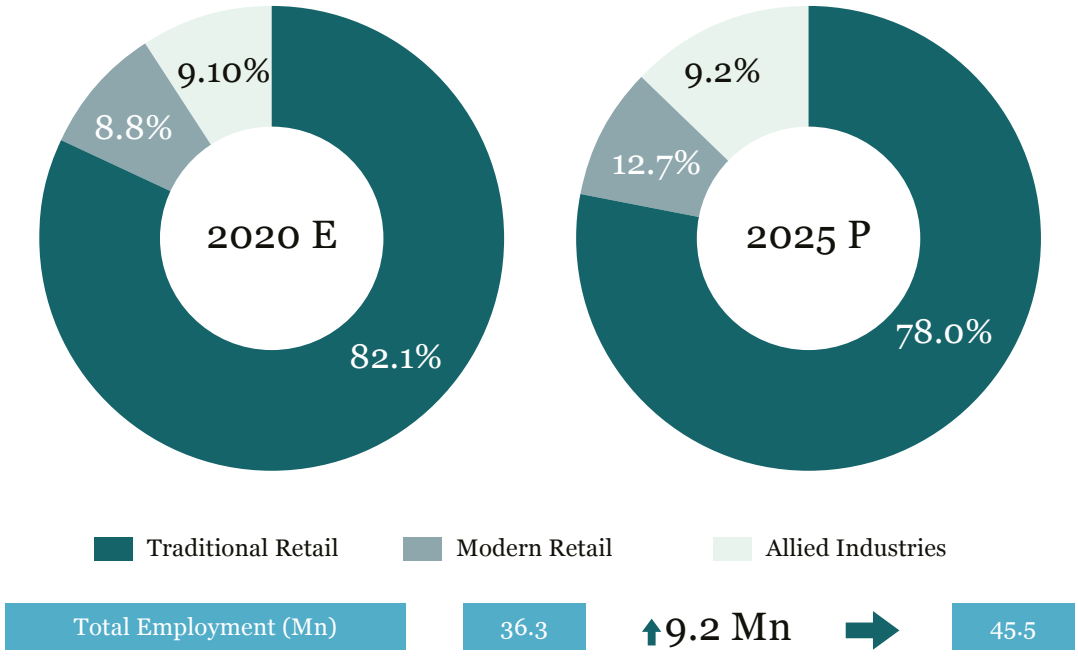
Year	2023	2030	2040	2047
International tourist arrivals (in mn)	13	25	56	100
Domestic tourist visits (in bn)	2	4	10	15
Foreign exchange earnings (in USD bn)	30	56	175	400
Employment (in mn)	88	137	257	400
Tourism GDP (in USD bn)	143	248	550	1,000

Source: CBRE[45]

Consumer Retail Services

The Indian retail sector is witnessing the increasing dominance of e-commerce and organised retail.[46] This shift is changing business practices and generating job opportunities in associated domains. E-commerce is driving employment in online sales services, customer support, digital marketing, and supply chain management. Logistics is witnessing heightened demand, resulting in an increased requirement of professionals in delivery, warehousing, supply chain analysis, and transport. Warehousing roles include efficient inventory management and logistics coordination. Digital marketing has become pivotal to e-commerce, with roles such as SEO specialists, content creators, social media managers, and digital advertising experts contributing to the online presence of businesses. This retail sector transformation is expected to create an additional 9.2 million jobs by 2025. Expected to grow at a CAGR of 25 percent—potentially buoyed by a growing middle-class population—the retail market can grow up to US$1.1 trillion by 2027 and US$2 trillion by 2032.[47]

Fig. 11: Employment Generation in the Retail Sector

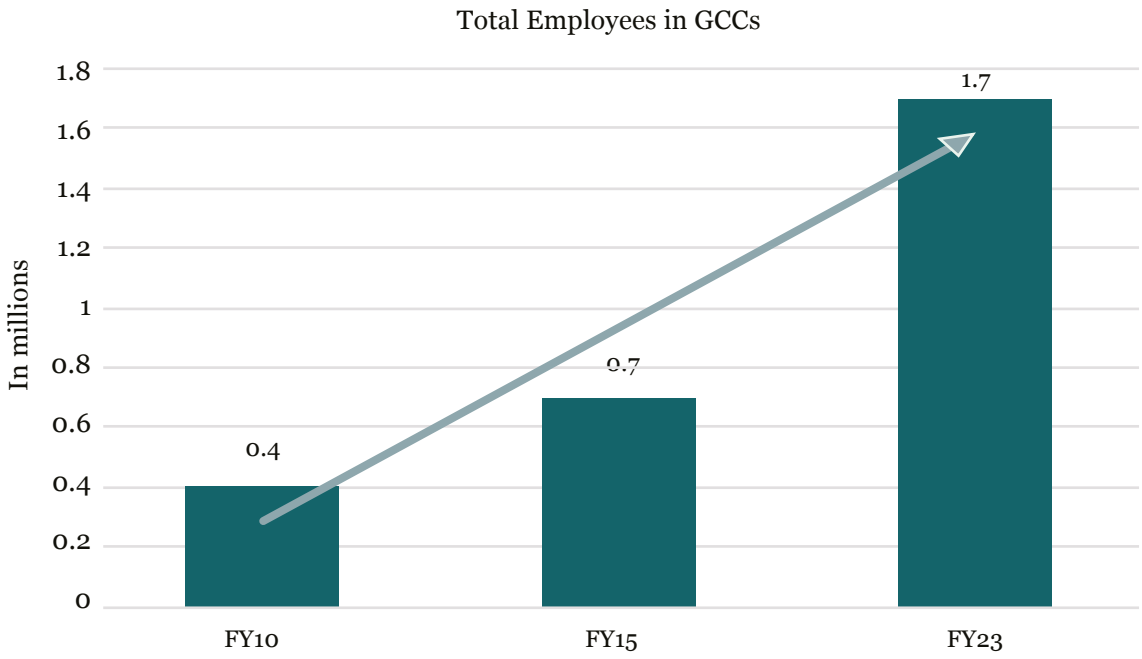


Source: Technopak[48]

Global Capability Centres

India's Global Capability Centres (GCCs) are essential components of the IT-enabled service sector and play a vital role in supporting multinational companies' back-office operations. This sector is a significant driver of employment in India and offers diverse job opportunities.[49] GCCs provide customer support services, employing individuals with skills in communication and language proficiency. They also offer IT consulting services, creating jobs for software engineers, system analysts, cybersecurity experts, and project managers. Business process outsourcing (BPO) services employ individuals with various skill sets, including data entry, finance, human resource, and back-office support. Finance and accounting teams within GCCs also hire accountants, financial analysts, and auditors. Some GCCs also focus on research and analytics, which create jobs for analysts, researchers, and data scientists. India's IT-enabled service sector is attracting investments and contributing to the country's job market, with high demand for skilled professionals across various domains. GCCs currently have a US$46-billion market size and are growing at a CAGR of 11.4 percent.[50]

Fig. 12: Employment Generation Capacity of GCCs

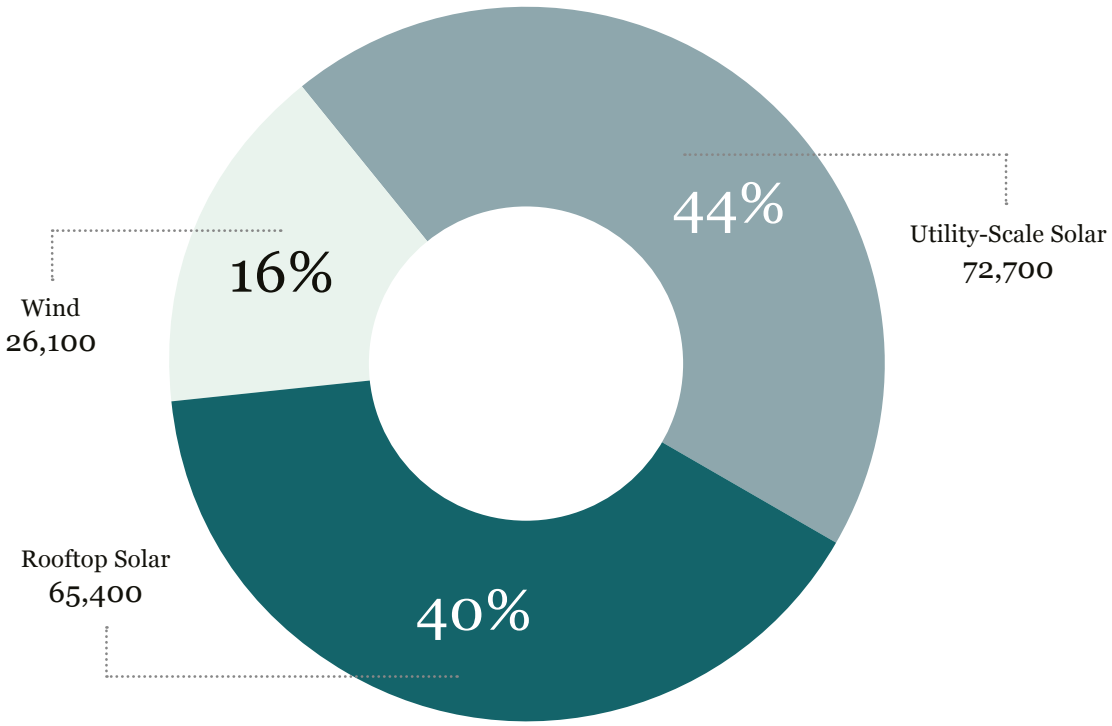


Source: NASSCOM GCC 4.0 Report[51]

Renewable Energy

India has made progress in advancing clean energy solutions, particularly in renewables, which promote environmental sustainability and generate employment, primarily in solar and wind power.[52] Renewable energy expansion can create millions of jobs, including, for instance, for installation, maintenance, and research in green energy technologies. This trend aligns with global shifts towards clean energy, where sectors like solar photovoltaic, hydropower, biofuels, and wind power drive jobs growth in the renewable energy field. In 2022, the solar sector alone employed 138,015 people. As the sector continues to grow, it has the potential to employ one million people by 2030.[53]

Fig. 13: Cumulative Workforce Employed in Solar and Wind Energy Sectors (2022)

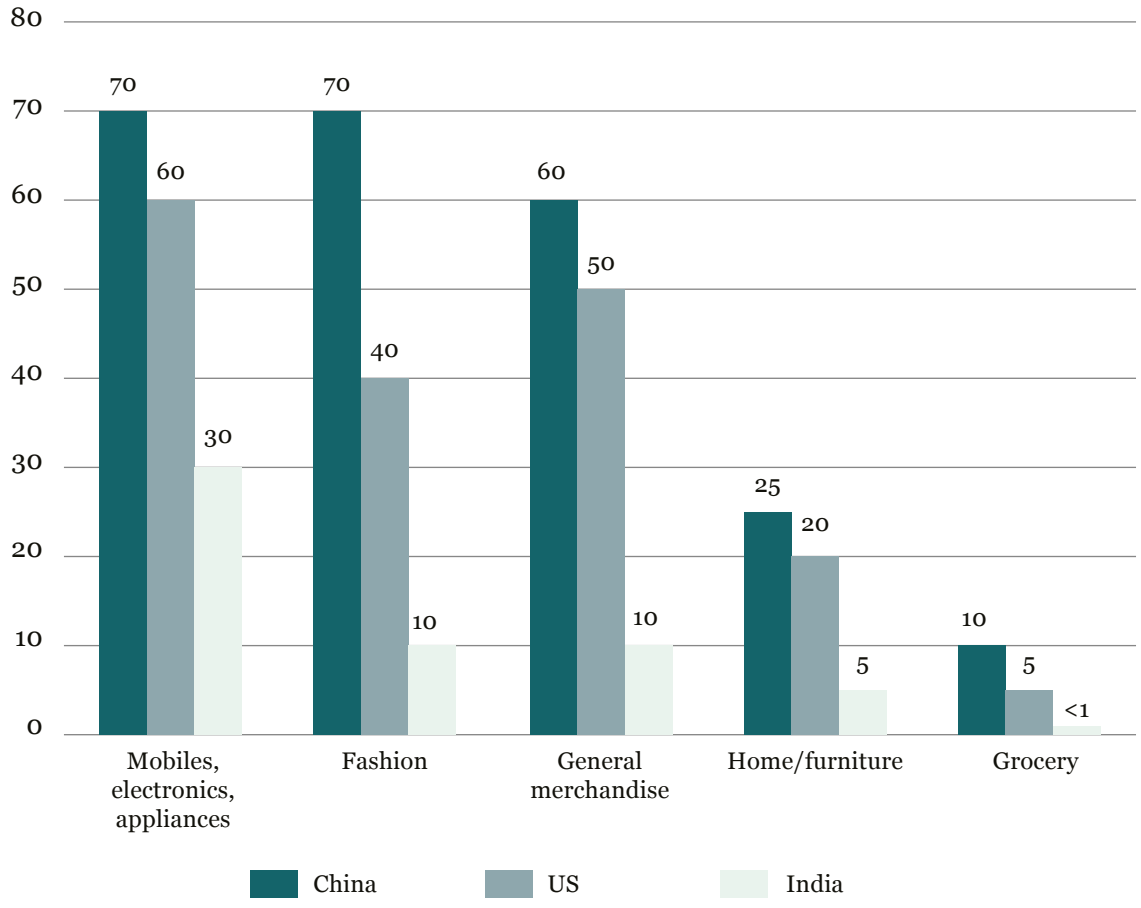


Source: CEEW-NRDC Report[54]

E-Commerce

The e-commerce industry in India, expected to grow to US$200 billion by 2026 from its 2020 figure of US$46.2 billion, creates increased employment opportunities across sectors.[55] The expansion of online shopping, for instance, has driven the demand for efficient logistics and delivery services, creating jobs for thousands of delivery partners and gig workers. E-commerce companies require a diverse range of professionals, including IT experts, digital payment specialists, and merchandisers. E-commerce specialists are in constant demand for managing online sales and operations. The growth of e-commerce has also led to job opportunities in warehousing and supply chain management.

Fig. 14: E-Commerce Penetration, by Category (China, US, and India, in Percentage)

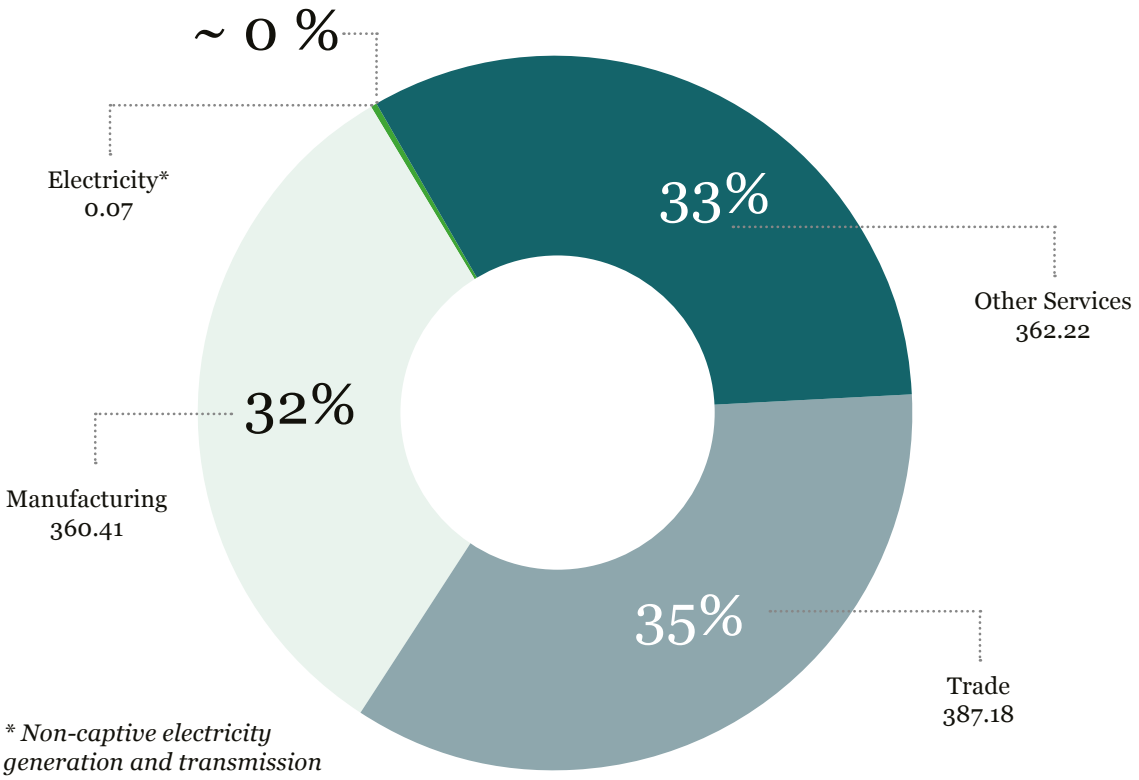


Source: Bain & Company and Flipkart[56]

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) contribute more than 30 percent to India's GDP and comprise a substantial share in the country's exports.[57] They are a crucial source of employment, supporting millions of livelihoods—second only to agriculture. The Indian government has launched various initiatives to bolster MSMEs and enhance their competitiveness and growth prospects, including credit access, technology advancement, and skill-development programs. Moreover, MSMEs encourage the growth of entrepreneurship, innovation, and broader economic engagement, which makes them a vital component of India's economic landscape. Between 1 July 2020 and 1 August 2023, MSMEs employed some 123.6 million people across the country.[58]

Fig. 15: Distribution of Employment in the MSME Sector, by Category (in Lakhs)

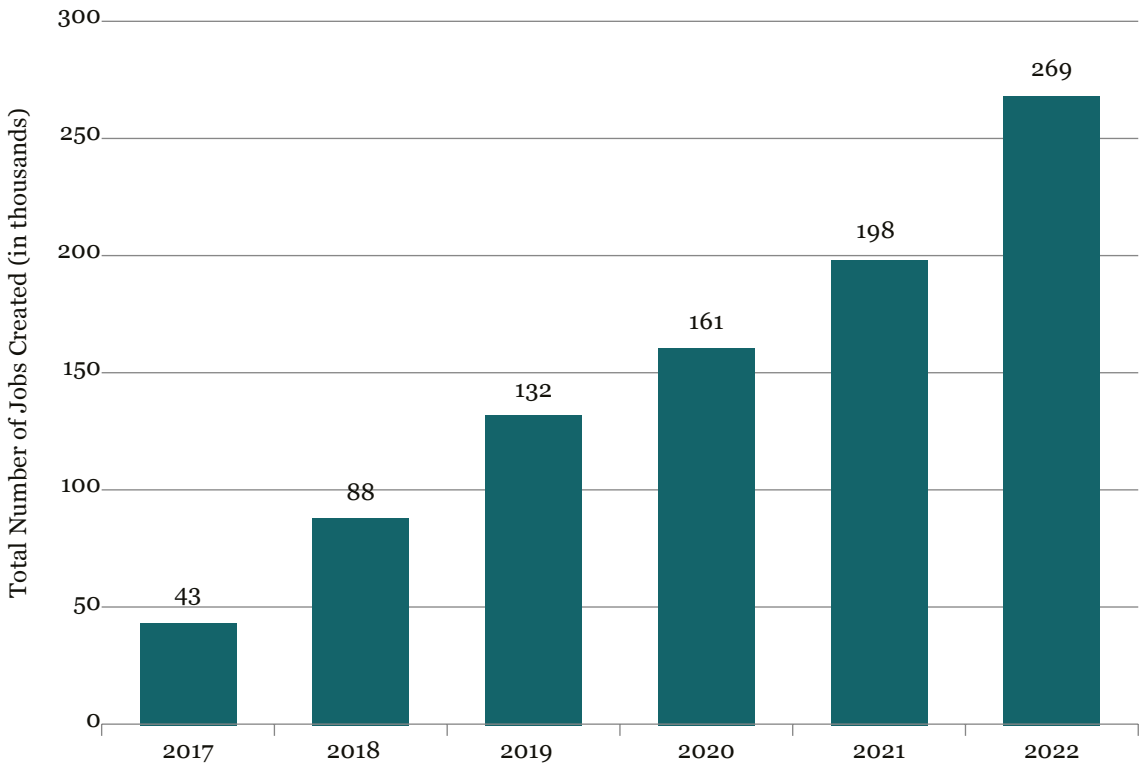


Source: Ministry of MSME[59]

Startup Ecosystem

Much of the success of India's startup ecosystem can be attributed to government policies such as the Startup India Initiative of 2016, along with tax incentives aimed at relieving the financial burdens on startups and fostering innovation and expansion.[60] Startups generate multiple employment opportunities and contribute to job creation. India's efforts to improve its business environment and attract foreign investment have resulted in it becoming an appealing destination for startups and global enterprises. At present, India has the third-largest startup ecosystem in the world, creating 2.69 lakh jobs in 2022 alone.[61] The startup ecosystem in Indian towns and cities such as Bengaluru, Mumbai, Chennai, and Gurugram are pivotal for entrepreneurship and job creation as well as for enhancing India's competitiveness in the global startup arena.

Fig. 16: Jobs Created by Indian Startups



Source: Indian Economic Survey[62]

V.

Government Initiatives, Policies, and Incentives

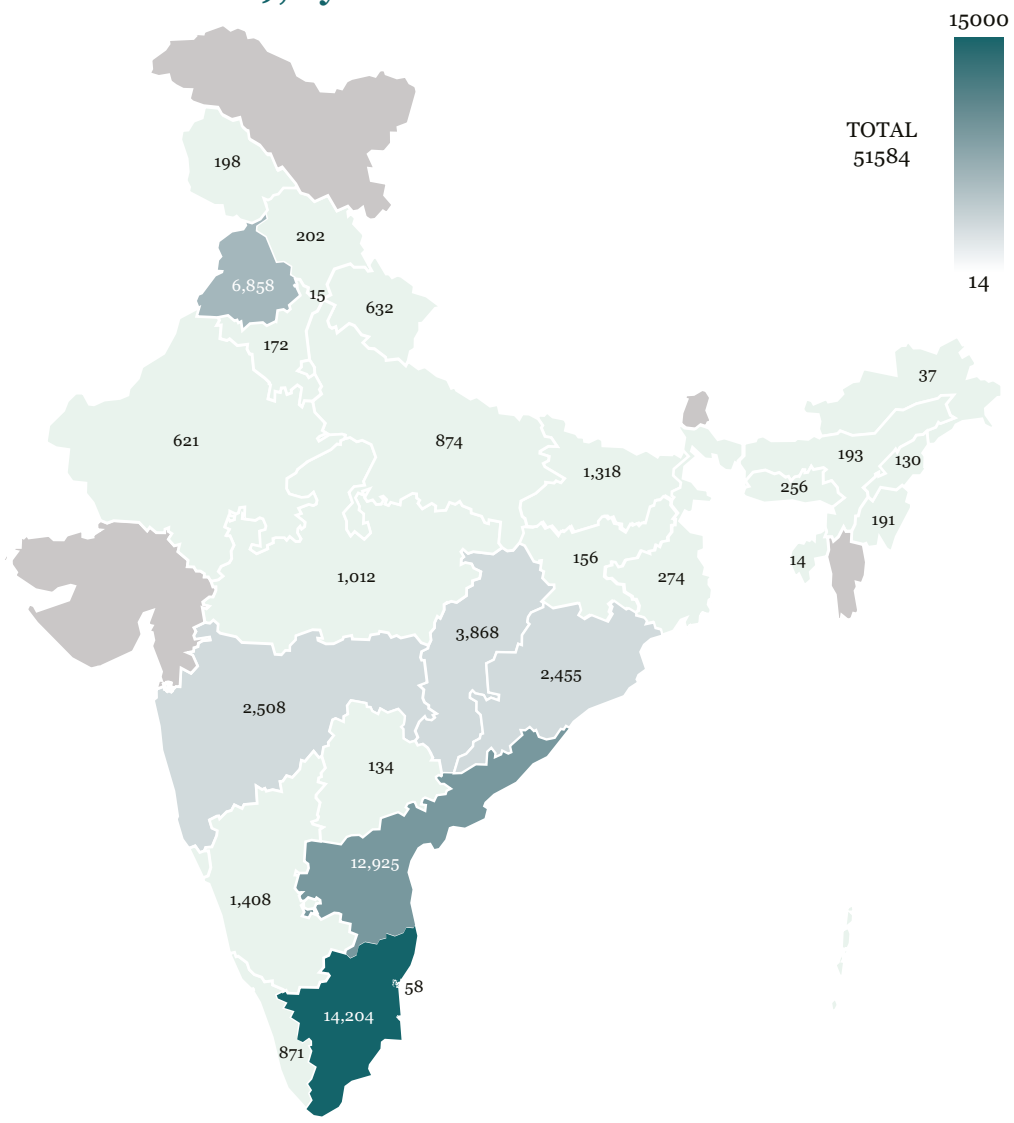
The symbiotic relationship between the workforce and government initiatives and policies has paved the way for a conducive environment for job creation in India. These sunrise sectors will play a pivotal role in shaping India's employment landscape, with support from government initiatives, strategies, and interventions. The following are key government initiatives in this domain.

Digital India Program

The Digital India program, launched in 2015, is a comprehensive government initiative aimed at transforming India into a digitally empowered society and knowledge economy.[63] It focuses on providing digital access to citizens and bridging the digital divide especially in the remote regions. Through Digital Push Initiatives, it aims

to promote digital literacy, expand digital infrastructure, and enhance e-government services, thus fostering a digital ecosystem. The program aims to transition to a knowledge-based economy by empowering individuals and businesses in the digital age and boosting workforce employability in technology-related sectors. Finally, Digital India is pivotal to India's journey towards a digitally empowered future, fostering a knowledge economy and enhancing workforce opportunities in digital services. Under the broad umbrella of Digital India, the government also launched the India BPO Promotion Scheme (IBPS) and the North-East BPO Promotion Scheme (NEBPS) to generate employment in IT and IT-enabled services in small cities. The schemes have already created around 52,000 jobs,[64] as of August, 2023.

Fig. 17: Direct Employment Generated Under BPO Schemes (IBPS and NEBPS), by State



Source: Ministry of Electronics & IT[65]

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

The Pradhan Mantri Kaushal Vikas Yojana (PMKVY), launched in 2015, focuses on skill development.[66] It offers free, short-duration skill-training programs and provides monetary incentives upon skill certification, thus aligning workforce skills with industry requirements and making individuals more employable. The PMKVY aims to address the employability gap and contribute to national skill-development efforts by improving employability and empowering participants to access better job opportunities. As of April 2024, the scheme had 14,265,716 enrolled candidates and had trained 13,724,226 candidates.[67] The scheme has the potential to drive up youth employment in skill-intensive industries.

Table 8: Top Ten Sectors with the Highest Reported Placements Under PMKVY

Source: PMKVY Placement[68]

Startup India Initiative

The Startup India Initiative, launched in 2016, aims to support startups by simplifying registration, offering tax exemptions, and creating dedicated funds.[69] The initiative has streamlined the regulatory environment and eased financial burdens for startups through the provision of tax incentives, including exemptions and holidays. These policies have fostered innovation and encouraged startups across India to expand. The initiative has nurtured a culture of innovation and growth in the Indian startup ecosystem and helped establish the country as a global hub for entrepreneurial ventures. Startups recognised by the Department for Promotion of Industry and Internal Trade have created over 9 lakh jobs across the country as of January 2023.[70]

Production Linked Incentive (PLI) Schemes in Strategic Sectors

Launched in 2020, India's Production Linked Incentive (PLI) scheme is geared towards bolstering manufacturing in strategically important sectors.[71] Its core objective is to foster domestic manufacturing to enhance India's global competitiveness by attracting investments, increasing production capacities, and generating employment across various sectors, such as electronics, pharmaceuticals, automobiles, textiles, solar, and telecommunications. Moreover, it strives to make Indian manufacturing globally competitive by improving cost competitiveness, adhering to WTO commitments, and promoting exports. In 2021-22, the PLI scheme resulted in a 76-percent increase in FDI in the manufacturing sector.[72] It is expected to create six million jobs in five years starting from 2021-22.[73]

Table 9: PLI Schemes in Two Industries

Production Linked Incentive Schemes

Advanced Chemistry Cell	ATTRIBUTE	Auto and Auto-component
FY23-FY27	Tenure	**FY23-FY27**
₹18,000 CRORE	Outlay	**₹26,000 CRORE**
3	Applicants Approved	**85**
₹27,000 CRORE	Expected Investment	**₹67,690 CRORE**
2.7 LAKH	Expected Employment Generation	**7.5 LAKH**

Source: Indian Economic Survey, 2022-23[74]

PM Vishwakarma Yojana

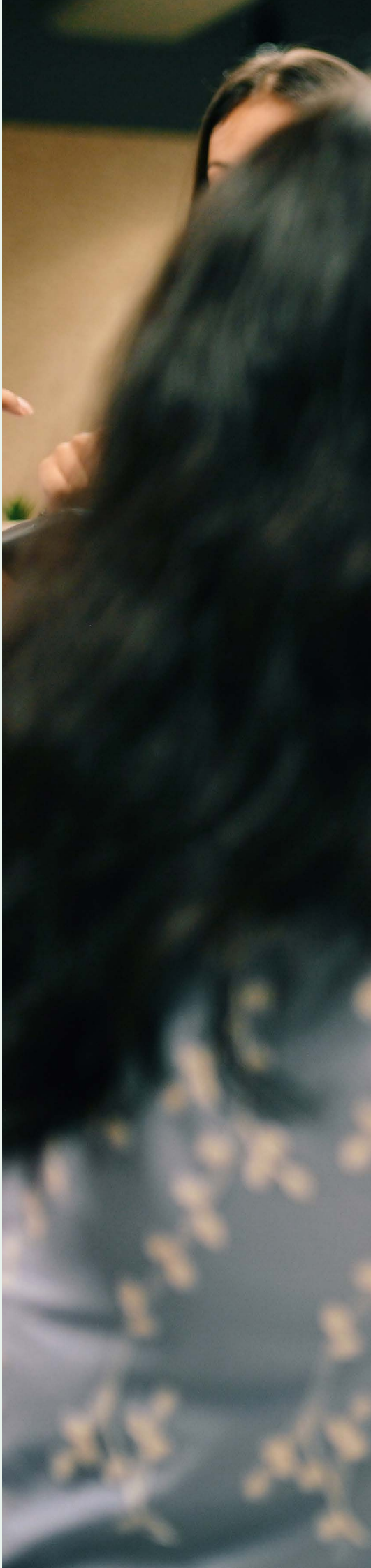
The PM Vishwakarma Yojana, launched in September 2023, aims to provide financial assistance and skill development to traditional artisans in various trades, such as blacksmiths, goldsmiths, potters, carpenters, and sculptors. Eligible beneficiaries can access loans of up to INR 300,000 without collateral, enabling them to start or expand their enterprise.[75] By equipping artisans and promoting their skills, this initiative contributes to preserving traditional industries and facilitates entrepreneurship, in turn increasing self-employment and other livelihood opportunities.

VI.

Recommendations

To complement the growth of India's service sector and mitigate inequities and vulnerabilities, a holistic approach that involves social protection and skill development is essential. This includes expanding development and business assistance programs, with a deliberate focus on supporting lower-skilled workers, women, rural populations, and local communities. Integrating these efforts can form the basis of a new industrial policy for the service sector that is aimed at enhancing productivity to foster quality and equitable job growth. This approach emphasises the need for strategic interventions to ensure that the benefits of economic expansion are accessible to all segments of society.

Furthermore, policy recommendations should not overlook the importance of revitalising the manufacturing sector to counteract the potential



risks of premature de-industrialisation or stagnation. Initiatives like 'Make in India' highlight the value of rejuvenating manufacturing through technological innovation, which can lead to productivity improvements and bolster long-term economic competitiveness. Such revitalisation efforts are pivotal for creating diverse employment opportunities across various skill levels, including for individuals with lower skills. To support India's expanding employment outlook over the next decade, it is crucial to integrate an array of critical responses from individuals, policymakers, and businesses.

This report makes the following key recommendations.

Recommendation 1: Identify and address employability gaps.

India's demographic window of opportunity is expected to last only until the end of this decade.[76] Therefore, it is crucial for policymakers to create an environment conducive to leveraging the maximum dividend that is embodied in the Indian labour force. Policymakers should work closely with educational institutions and public- and private-sector employers to identify key employability gaps and make suitable curriculum adjustments. Aligning human capital development to the evolving needs of the labour market through investments in education and skills training can enhance productivity, employability, and employment of the youth.

Recommendation 2: Diversify skill development.

Individuals can be encouraged to diversify their skill sets by promoting cutting-edge technology skills, which can enable participation in sunrise sectors that use emerging tech, and technology-proof job skills that insulate the traditional workforce against the capital-intensive nature of modern manufacturing. This diversification can reduce the vulnerability of the Indian workforce to sectoral transition shocks. Incorporating formal mentorship programs and bridge courses to enable continuous human capital development can ensure that the workforce remains adaptable and resilient in a changing economic landscape.

Recommendation 3: Transition opportunities with a focus on services.

There is a need to facilitate natural transitions in employment sectors, such as from agriculture to agri-product processing to retail services. This approach aligns with the economics of structural transformation, where economies evolve from agriculture to industry and services. Given the high employment elasticity of India's service sector, policymakers should prioritise the growth of industries like tourism, hospitality, and financial services, including banking and insurance, healthcare services, and consumer retail. This is consistent with the idea that service sectors can absorb surplus labour that is released with the increasing capital intensity of agricultural and industrial production.

Recommendation 4: Promote entrepreneurship.

Policymakers should create an enabling environment for entrepreneurship which can stimulate job creation through multiplier effects. Supporting the expansion of the startup ecosystem, empowering the Indian youth's innovation capabilities, and promoting their participation in decision-making roles can make India's domestic markets more responsive to emerging global needs and ideas. Leveraging government support schemes for setting up small businesses or participating in local entrepreneurial initiatives accords considerable flexibility in terms of labour market time commitments and can particularly encourage and support female workforce participation. This is also tantamount to creating a more gender-sensitive workplace environment, thus creating further scope for female employment and closing the gender gap in India's labour markets.

Recommendation 5: Encourage public-private collaboration.

Public-private collaboration can create and support specific programmes and initiatives for developing job-ready semi-skilled and skilled workforces. Such partnerships reflect the idea of co-investment for mutual benefit and can stimulate employment. Establishing or strengthening R&D departments within businesses can foster innovation, leading to the development of high-value products and services and opening up employment opportunities along the value chain. Moreover, MSME value chain optimisation across Tier-2 and Tier-3 cities enabled by such services can lead to increased sales and the creation of employment opportunities in smaller towns.

Recommendation 6: Strengthen government policies.

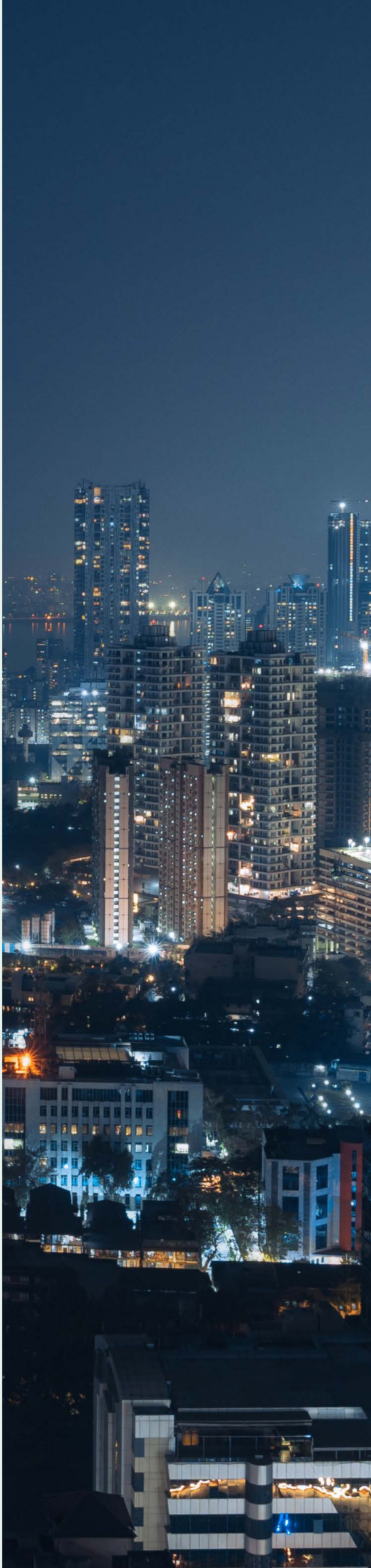
Policies that support skill development and employment generation, such as the Digital India Program, PMKVY, PM Vishwakarma Yojana, Startup India Initiative, and PLI, can have a multiplier effect on employment and stimulate economic activity. Particularly in Indian manufacturing, where labour-intensive goods drive growth in the export sector, it is critical to prioritise the negotiation of mutually beneficial trade agreements, especially with countries in Southeast Asia and Africa. This can facilitate easier access to demand-intensive markets, attracting investments and creating jobs in export-oriented sectors.

Incorporating these recommendations into policies and actions can enhance India's employment outlook and align it with the core economic principles of human capital development, comparative advantage, entrepreneurship, and structural transformation.

VII.

Conclusion

India's employment outlook for 2030 is brimming with opportunities. As we navigate the complexities of India's economic trajectory, a number of key takeaways emerge. India's economy, characterised by a robust GDP growth projection ranging from 6-8 percent annually over the next decade, positions it as one of the fastest-emerging economies globally. Yet, the country's burgeoning population, while presenting opportunities for economic growth, also poses challenges in terms of employment. Harnessing this demographic dividend requires strategic planning and targeted policies to channel the workforce's energy and skills into productive sectors.



As manufacturing becomes capital-intensive, services offer substantial potential for unlocking avenues for employment. The emergence of gig workers as a significant segment of the non-agricultural workforce underscores the potential for formalisation and job creation. In this context, services-led growth can usher in an era of employment expansion across several sectors by leveraging India's prowess in software services and technological talent, entrepreneurial fervour, and skills acquisition—enabled by specific programmes and initiatives to enhance employability. This transition holds the promise of sustainable employment in tandem with economic development.

Emerging sectors such as banking and financial services, e-commerce, startups, and healthcare technology are beacons of hope for employment generation. These sectors not only offer jobs but also drive technological advancement, thus contributing to holistic development. Government initiatives like Digital India, PMKVY, Startup India, PLI, and PM Vishwakarma Yojana foster job creation and employability, thus addressing the supply- and demand-side dynamics of Indian labour markets. Consistent financial support and effective implementation are crucial to sustaining their impact and ensuring employment generation.

India's economic landscape, as envisioned by these initiatives, aims to create a digitally empowered, skilled, innovative, and self-reliant economy. The regular assessment and adaptation of these programs are vital to enhancing their capacity-building efficiency.

India's journey towards 2030 is expected to be marked by the interplay of economic forces, demographics, and strategic policy measures. Leveraging its strengths while addressing its challenges will be pivotal to shaping the country's future, where employment opportunities are not only abundant but also inclusive and sustainable. ORF

Appendices

Appendix 1: India's GDP (INR crore) and Unemployment Rates (in %)

Year	GDP	Unemployment Rate
2022-23	16006425	4.822
2021-22	14925840	6.38
2020-21	13687118	7.86
2019-20	14534641	6.51
2018-19	13992914	7.65
2017-18	13144582	7.728
2016-17	12308193	7.808
2015-16	11369493	7.891
2014-15	10527674	7.976
2013-14	9801370	8.06
2012-13	9213017	8.138
2011-12	8736329	8.215
2010-11	8301235	8.3
2009-10	7651078	8.383
2008-09	7093403	8.463
2007-08	6881007	8.537
2006-07	6391375	8.618
2005-06	5914614	8.7
2004-05	5480380	8.535

Source: ILOStat[77] and RBI[78]

Appendix 2: Gross Value Added by Industry (INR crore)

GVA at Constant Prices			
Year	**Primary**	**Secondary**	**Tertiary**
2021-22	2149122	4338366	7310536
2020-21	2076327	3886719	6718436
2019-20	1994326	3921067	7320708
2018-19	1878598	3976743	6878457
2017-18	1840023	3775996	6418152
2016-17	1726004	3566953	6035327
2015-16	1616146	3311316	5564408
2014-15	1605715	3021899	5084519
2013-14	1609198	2824188	4630263
2012-13	1524288	2721167	4300820
2011-12	1501947	2635024	3969975
2010-11	1411634	2542810	3750071
2009-10	1297556	2356702	3477579
2008-09	1309079	2165199	3199938
2007-08	1312283	2081937	3004075
2006-07	1243794	1927294	2787279
2005-06	1208285	1701942	2604001
2004-05	1152841	1553245	2386416

Source: RBI DBIE [79]

Appendix 3: Rural Employment Per Thousand Workers, by Sector

Rural Employment Ratio			
Year	**Primary**	**Secondary**	**Tertiary**
2021-22	634.5	194	172.5
2020-21	646	188.5	167
2019-20	655.5	180.5	164
2018-19	621.5	194.5	184
2017-18	641	184	176
2016-17	671.5	193.5	135
2015-16	711	161.5	127
2014-15	750	129.5	120.5
2013-14	732.5	142.5	125.5
2012-13	749	128.5	123
2011-12	750	127	122.5
2010-11	780	118	102
2009-10	768.5	112.5	119.5
2008-09	759	127	114
2007-08	754	134.5	111.5
2006-07	784	107.5	108.5
2005-06	821	84	95
2004-05	821.5	89	89

Source: RBI DBIE [80]

Appendix 4: Urban Employment Per Thousand Workers, by Sector

Urban Employment Ratio			
Year	**Primary**	**Secondary**	**Tertiary**
2021-22	82.5	325	592.5
2020-21	78.5	313	609
2019-20	66	311	623
2018-19	63.5	323	613.5
2017-18	72.5	330.5	597
2016-17	82.5	346.5	571
2015-16	99.5	339.5	560.5
2014-15	105.5	333	560.5
2013-14	105.5	336.5	558
2012-13	121	334	545
2011-12	112	328	560
2010-11	126.5	324	549
2009-10	120.5	326	553
2008-09	144.5	326.5	528.5
2007-08	124.5	349	526.5
2006-07	121.5	310.5	567.5
2005-06	156.5	301	542.5
2004-05	139	332	528.5

Source: RBI DBIE [81]

Appendix 5: Male Employment per 2000 male workers, by Sector

Male Employment Ratio			
Period	**Primary**	**Secondary**	**Tertiary**
2021-22	564	616	821
2020-21	591	587	824
2019-20	604	573	824
2018-19	581	588	829
2017-18	604	592	807
2016-17	650	573	778
2015-16	688	539	771
2014-15	723	505	770
2013-14	715	508	777
2012-13	726	499	775
2011-12	722	507	770
2010-11	771	477	752
2009-10	758	475	767
2008-09	756	466	777
2007-08	756	492	752
2006-07	780	454	766
2005-06	849	424	727
2004-05	836	446	717

Source: RBI DBIE [82]

Appendix 6: Female Employment per 2000 female workers, by Sector

Female Employment Ratio			
Period	**Primary**	**Secondary**	**Tertiary**
2021-22	870	422	709
2020-21	858	416	728
2019-20	839	410	750
2018-19	789	447	766
2017-18	823	437	739
2016-17	858	507	634
2015-16	933	463	604
2014-15	988	420	592
2013-14	961	450	590
2012-13	1014	426	561
2011-12	1002	403	595
2010-11	1042	407	550
2009-10	1020	402	578
2008-09	1051	441	508
2007-08	1001	475	524
2006-07	1031	382	586
2005-06	1106	346	548
2004-05	1085	396	518

Source: RBI DBIE [83]

Appendix 7: Short-Run Gender-Segregated Elasticity[f]

Short-Run		
Employment Elasticity	**Male**	**Female**
Primary Sector	-0.73	(-0.37)
Secondary Sector	0.52	(-0.15)
Tertiary Sector	0.22	0.70

Source: Authors' own

[f] Figures reported in brackets are not statistically significant at the 90 percent confidence interval.

Endnotes

---

[1] International Monetary Fund, "India", *IMF,* https://www.imf.org/en/Countries/IND

[2] ILOStat, "Unemployment rate by sex and age", *International Labor Organization,* https://rshiny.ilo.org/dataexplorer36/?lang=en&segment=indicator&id=UNE_2EAP_SEX_AGE_RT_A

[3] EY India, "Reaping the demographic dividend", *Ernst & Young Global Limited*, April 11, 2023, https://www.ey.com/en_in/india-at-100/reaping-the-demographic-dividend

[4] Rajiv Biswas, "India's GDP growth remains buoyant in 2023", *S&P Global Market Intelligence*, September 8, 2023, https://www.spglobal.com/marketintelligence/en/mi/research-analysis/indias-gdp-growth-remains-buoyant-in-2023-Sep23.html

[5] Database on Indian Economy, "National Income", Reserve Bank of India, https://cimsdbie.rbi.org.in/DBIE/#/dbie/reports/Statistics/Real%20Sector/National%20Income

[6] Database on Indian Economy, "Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry", Reserve Bank of India, https://dbie.rbi.org.in/#/dbie/reports/Statistics/Socio-Economic%20Indicators/Socio-Economic%20Indicators

[7] Database on Indian Economy, "Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry"

[8] "Share of agriculture in India's GDP declined to 15% in FY23: Govt", *Economic Times*, December 19, 2023, https://economictimes.indiatimes.com/news/economy/agriculture/share-of-agriculture-in-indias-gdp-declined-to-15-in-fy23-govt/articleshow/106124466.cms?from=mdr

[9] Sophie Malin & Ashima Tyagi, "India's Demographic Dividend: The Key to Unlocking Its Global Ambitions", *S&P Global,* August 3, 2023, https://www.spglobal.com/en/research-insights/featured/special-editorial/look-forward/india-s-demographic-dividend-the-key-to-unlocking-its-global-ambitions#:~:text=India%20is%20home%20to%20more,is%20expected%20to%20hit%2059%25

[10] Ministry of Finance, Government of India, January 31, 2023, https://pib.gov.in/PressReleasePage.aspx?PRID=1894932

[11] Aftab Ahmed and Sudarshan Varadhan, "India's inflation fight will hurt growth, risks wider fiscal gap", *Reuters*, May 23, 2022, https://www.reuters.com/markets/rates-bonds/indias-inflation-fight-will-hurt-growth-risks-wider-fiscal-gap-2022-05-23/

[12] Ira Dugal, "Fall in India nominal GDP growth in FY24 to challenge fiscal math", *Reuters*, January 9, 2023, https://www.reuters.com/world/india/fall-india-nominal-gdp-growth-fy24-challenge-fiscal-math-2023-01-09/

[13] ILOStat, "Unemployment rate by sex and age", *International Labor Organization,* https://rshiny.ilo.org/dataexplorer36/?lang=en&segment=indicator&id=UNE_2EAP_SEX_AGE_RT_A

[14] Data, GDP (current US$) – India, World Bank, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IN

[15] Population Foundation of India and United Nations Populations Fund, *India's Population Growth and Policy Implications*, Population Foundation of India and United Nations, https://india.unfpa.org/sites/default/files/pub-pdf/brief1_-_indias_population_growth_and_policy_implications.pdf

[16] Statistical Information, "Age Group-wise Percentage Distribution of Projected Population by Gender in India (1991, 2001, 2011, 2016, 2026, 2031 and 2036), Indiastat, https://www.indiastat.com/table/demographics/age-group-wise-percentage-distribution-projected-p/1427850

[17] Arvind Panagariya, *New India: Reclaiming the Lost Glory* (Oxford University Press, 2020), chap. 3, https://academic.oup.com/book/33803/chapter-abstract/288575075?redirectedFrom=fulltext#no-access-message

[18] Annual Survey of Industries, "Principal Characteristics", *Reserve Bank of India,* https://cimsdbie.rbi.org.in/BOE/OpenDocument/2306011537/OpenDocument/opendoc/openDocument.jsp?logonSuccessful=true&shareId=1

[19] ILOStat, "Unemployment rate by sex and age"

[20] Database on Indian Economy, "National Income"

[21] Steven Kapsos, *The employment intensity of growth: Trends and macroeconomic determinants*, International Labour Organization, United Nations, 2005/12, https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_elm/documents/publication/wcms_143163.pdf

[22] International Monetary Fund, "India"

[23] International Monetary Fund, "India"

[24] ILOStat, "Unemployment rate by sex and age"

[25] International Monetary Fund, "India"

[26] Database on Indian Economy, "National Income"

[27] Database on Indian Economy, "Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry for Various Rounds"

[28] Labour Bureau, "Occupation Wages", Ministry of Labour and Employment, Government of India, https://labourbureau.gov.in/occupation-wages

[29] ILOSTAT, "Employment in Services (% of total employment) (modelled ILO estimate)", World Bank, https://data.worldbank.org/indicator/SL.SRV.EMPL.ZS?locations=ZA

[30] ILOSTAT, "Employment in Services (% of total employment) (modelled ILO estimate)"

[31] Prachi Salve, "Data Check: 90% of jobs created in India after liberalisation were in the informal sector", *Scroll*, May 10, 2019, https://scroll.in/article/922863/data-check-90-of-jobs-created-in-india-after-liberalisation-were-in-the-informal-sector

[32] ICICI, "India employment: Where will the next 100mn jobs come from?", https://www.icicibank.com/content/dam/icicibank/india/erg/thematic/India%20Employment%20-%2031AUG23.pdf

[33] Vignesh Santhanam, Piyush Gupta, Vivek HP, "From innovation to integration: the role of collective action in institutionalising 4IR technologies", World Economic Forum, May 8, 2023, https://www.weforum.org/agenda/2023/05/the-power-of-collective-action-institutionalizing-4ir-technologies/

[34] McKinsey Global Institute, "Digital India: Technology to transform a connected nation", *McKinsey Global Institute*, McKinsey & Company, 2019 https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/digital%20india%20technology%20to%20transform%20a%20connected%20nation/mgi-digital-india-in-brief-april-2019.pdf

[35] India – Country Commercial Guide, "Information and Communication Technology", International Trade Administration, U.S. Department of Commerce, United States Government, https://www.trade.gov/country-commercial-guides/india-information-and-communication-technology

[36] Nilesh Naker, "Seven key trends shaping the future of FinTech industry" Ernst & Young Global Limited, October 31, 2022, https://www.ey.com/en_in/consulting/seven-key-trends-shaping-the-future-of-fintech-industry

[37] Financial Services in India, India Brand Equity Foundation, February 2024, https://www.ibef.org/industry/financial-services-india

[38] Database on Indian Economy, "BANK GROUP-WISE DISTRIBUTION OF EMPLOYEES OF SCHEDULED COMMERCIAL BANKS", *Reserve Bank of India,* https://cimsdbie.rbi.org.in/BOE/OpenDocument/2306011537/OpenDocument/opendoc/openDocument.jsp?logonSuccessful=true&shareId=0

[39] Ishiqa Multani, "India Healthcare Outlook for 2023", BW Healthcare, BW Businessworld, December 26, 2022, https://bwhealthcareworld.businessworld.in/article/Indian-Healthcare-Outlook-For-2023-/26-12-2022-459404/

[40] Healthcare Industry in India, India Brand Equity Foundation, February 2024, https://www.ibef.org/industry/healthcare-india

[41] Healthcare, Invest India, https://www.investindia.gov.in/sector/healthcare

[42] Sanjay Zodpey, et al, *Healthcare workforce in India: Where to invest, how much, and why?,* Public Health Foundation of India and World Health Organization India, 2022, https://cdn.who.int/media/docs/default-source/searo/india/publications/health-workforce-in-india-where-to-invest--how-much-and-why.pdf?sfvrsn=8ae98d85_2

[43] Tourism & Hospitality Industry in India, India Brand Equity Foundation, December 2023, https://www.ibef.org/industry/tourism-hospitality-india

[44] Mordor Intelligence, *Hospitality Industry in India size & share analysis – Growth trends & forecasts (2024 - 2029)*, Mordor Intelligence, https://www.mordorintelligence.com/industry-reports/hospitality-industry-in-india

[45] CBRE Intelligent Investment, "Indian Hospitality Sector: On a Comeback Trail", CBRE, https://mktgdocs.cbre.com/2299/cef68a9c-7231-4ddd-a191-b021f9e88276-1069474092/Indian_20Hospitality_20Sector-.pdf

[46] Najeeb Kunil, "Indian retail industry 2023: Growth, challenges, and opportunities", *The Times of India*, January 19, 2023, https://timesofindia.indiatimes.com/blogs/voices/indian-retail-industry-2023-growth-challenges-and-opportunities/

[47] Melisa Cyrill, "Navigating Business Prospects in India's Retail Industry", India Briefing, August 11, 2023, https://www.india-briefing.com/news/navigating-business-prospects-in-indias-retail-industry-key-growth-drivers-29245.html/#:~:text=Per%20the%20Retailers%20Association%20of,sales%20figures%20from%202019%2D20

[48] Ankur Bisen, Madhulika Tiwari, Ravindra Yadav, Priyanka Kalia, Rashi Gupta, and Priyanka Abrol, *Impact of India Retail on Employment & Taxation*, technopak, September 2020, https://www.technopak.com/wp-content/uploads/2021/08/Retail-Impact-Assessment-2.pdf

[49] Jeffrey D. Hutchings and Craig A. de Ridder, "Global Capability Centres in India Continue to Flourish", Pillsbury, June 22, 2020, https://www.pillsburylaw.com/en/news-and-insights/global-capability-centers-india-flourish.html

[50] Nasscom and Zinnov, *GCC 4.0 | India Redefining the Globalization Blueprint*, Nasscom, June 2023, https://nasscom.in/knowledge-center/publications/gcc-40-india-redefining-globalization-blueprint

[51] Nasscom and Zinnov, *GCC 4.0 | India Redefining the Globalization Blueprint*

[52] Bharath Jairaj, Pamli Deka, and Sophie Boehm, "India's Renewable Energy Push: A Win-Win for Job Creation And Electricity Access", World Resources Institute, November 22, 2017, https://www.wri.org/insights/indias-renewable-energy-push-win-win-job-creation-and-electricity-access

[53] Sameer Kwatra, "Renewable Energy: A Driver for Job Growth", Natural Resources Defense Council, February 6, 2023, https://www.nrdc.org/bio/sameer-kwatra/renewable-energy-driver-job-growth

[54] Akanksha Tyagi, Arvind Poswal, Akanksha Golchha, Charu Lata, and Deepak Rai, *India's Expanding Clean Energy Workforce, 2022 Update*, Council on Energy, Environment, and Water (CEEW), Natural Resources Defense Council (NRDC) India, and Skill Council for Green Jobs (SCGJ), February 2023, https://www.ceew.in/sites/default/files/ceew-nrdc-renewable-energy-employment-jobs-2023-report.pdf

[55] E-commerce to boost India's Job Market", Economic Diplomacy Division, Ministry of External Affairs, Government of India, November 29, 2021, https://indbiz.gov.in/e-commerce-to-boost-indias-job-market/

[56] Pranav Balakrishnan, "Indian commerce user base to beat US numbers in two years: Bain report", *The Economic Times*, October 11, 2022, https://economictimes.indiatimes.com/tech/technology/ecommerce-user-base-in-india-to-outpace-us-in-two-years-bain-report/articleshow/94767324.cms?from=mdr

[57] Prashant Prabhakar Deshpande, "Underscoring contribution of MSME sector to economic growth of India", *The Times of India*, August 9, 2023, https://timesofindia.indiatimes.com/blogs/truth-lies-and-politics/underscoring-contribution-of-msme-sector-to-economic-growth-of-india/

[58] Ministry of Micro, Small, and Medium Enterprises, Government of India, August 7, 2023, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1946375

[59] *Annual Report 2022-23*, Ministry of Micro, Small, and Medium Enterprises, Government of India, https://msme.gov.in/sites/default/files/MSMEANNUALREPORT2022-23ENGLISH.pdf

[60] Kritika Narula, Aman Mathur, and Nayan David Absalom, "Union Budget 2023: Easing the Journey for Startups", Invest India, February 3, 2023, https://www.investindia.gov.in/team-india-blogs/union-budget-2023-easing-journey-startups

[61] Jaspreet Kaur, "Economic Survey 2022-23: DPIIT-Recognised Startups Have Created Over 9 Lakh Direct Jobs", Inc42, January 31, 2023, https://inc42.com/buzz/economic-survey-2022-23-dpiit-recognised-startups-have-created-over-9-lakh-direct-jobs/

[62] Economic Survey 2022-23, Ministry of Finance, Government of India, https://www.indiabudget.gov.in/economicsurvey/doc/echapter.pdf

[63] "What is Digital India? Initiatives, Objectives, and Benefits", HSBC, February 21, 2024, https://www.businessgo.hsbc.com/en/article/what-is-digital-india-initiatives-objectives-and-benefits

[64] Ministry of Electronics and IT, Government of India, August 15, 2023, https://pib.gov.in/PressReleasePage.aspx?PRID=1949092

[65] Ministry of Electronics and IT, Government of India, December 23, 2022, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1885962

[66] Sakshi Malik, "Impact of Pradhan Mantri Kaushal Vikas Yojana (PMKVY)" *International Journal for Multidisciplinary Research* 5, no. 1 (2023), https://www.ijfmr.com/papers/2023/1/1465.pdf

[67] PMKVY Placement, Ministry of Skill Development and Entrepreneurship, Government of India, https://www.pmkvyofficial.org/

[68] PMKVY Placement, Ministry of Skill Development and Entrepreneurship

[69] Startup India, Ministry of Commerce and Industry, Government of India, https://www.startupindia.gov.in/

[70] Economic Survey 2022-23, Ministry of Finance

[71] Cabinet, Government of India, November 11, 2020, https://www.pib.gov.in/PressReleasePage.aspx?PRID=1671912

[72] Ministry of Commerce and Industry, Government of India, June 13, 2023, https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1932051

[73] Ministry of Labour & Employment, Government of India, March 16, 2023, https://labour.gov.in/sites/default/files/pib1907686.pdf

[74] Economic Survey 2022-23, Ministry of Finance

[75] Prime Minister's Office, Government of India, September 17, 2023, https://pib.gov.in/PressReleseDetailm.aspx?PRID=1958219#:~:text=Under%20this%20scheme%2C%20Vishwakarma%20companions,this%20loan%20is%20very%20low

[76] EY India, “Reaping the demographic dividend”, Ernst & Young Global Limited, April 11, 2023, https://www.ey.com/en_in/india-at-100/reaping-the-demographic-dividend

[77] ILOStat, “Unemployment rate by sex and age”

[78] Database on Indian Economy, “National Income”

[79] Database on Indian Economy, “National Income”

[80] Database on Indian Economy, “Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry for Various Rounds”

[81] Database on Indian Economy, “Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry for Various Rounds”

[82] Database on Indian Economy, “Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry for Various Rounds”

[83] Database on Indian Economy, “Employment Situation in India - Per 1000 Distribution of Usually Employed by Broad Groups of Industry for Various Rounds”

About the Authors

Arya Roy Bardhan is a Research Assistant at the Centre for New Economic Diplomacy, Observer Research Foundation.

Debosmita Sarkar is Junior Fellow at the Centre for New Economic Diplomacy, Observer Research Foundation.

Soumya Bhowmick is Associate Fellow at the Centre for New Economic Diplomacy, Observer Research Foundation.

Nilanjan Ghosh is Director of Kolkata Centre, and the Centre for New Economic Diplomacy, Observer Research Foundation.

Ideas • Forums • Leadership • Impact

20, Rouse Avenue Institutional Area
New Delhi - 110 002, INDIA
+91-11-35332000 Fax: +91-11-35332005
contactus@orfonline.org
www.orfonline.org