सत्यमेव जयते

NITI Aayog

REVITALIZING INDIA'S APPRENTICESHIP ECOSYSTEM

INSIGHTS, CHALLENGES, RECOMMENDATIONS AND BEST PRACTICES

FEBRUARY 2026

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Revitalizing India's Apprenticeship Ecosystem

Insights, Challenges, Recommendations and Best Practices

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NITI AAYOG RESEARCH TEAM	
Dr. Sonia Pant	Programme Director
Dr. Sakshi Khurana	Senior Specialist
Shailendra Yadav	Consultant Gr. I
Radhika Talekar	Young Professional

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New Delhi – 110001

सुमन के. बेरी
उपाध्यक्ष
SUMAN K. BERY
VICE CHAIRMAN
Phones : 23096677, 23096688
Fax : 23096699
E-mail : vch-niti@gov.in

भारत सरकार
नीति आयोग, संसद मार्ग
नई दिल्ली - 110 001
Government of India
NATIONAL INSTITUTION FOR TRANSFORMING INDIA
NITI Aayog, Parliament Street,
New Delhi - 110 001

Foreword

Apprenticeship remains one of the most time-honoured and effective means of bridging the gap between education and employment. It equips young people with practical, job-ready skills while providing industry with a reliable pipeline of trained talent. The Honourable Prime Minister Shri Narendra Modi ji has underscored the transformative potential of apprenticeships in preparing our youth for the future and has highlighted the government's sustained efforts to promote and expand apprenticeship opportunities across India.

In light of India's demographic dividend and its ambitions to emerge as a global hub for manufacturing and services, strengthening our apprenticeship framework is both timely and imperative.

The report *Revitalising India's Apprenticeship Ecosystem: Insights, Challenges, Recommendations and Best Practices*, prepared in-house by the Skill Development and Employment Division of NITI Aayog, has been prepared as India intensifies its efforts to skill its vast workforce in response to the evolving demands of a rapidly transforming economy driven by technological progress, global integration and changing industry requirements.

By consolidating perspectives from diverse stakeholders, identifying critical challenges, and capturing exemplary national and international practices, this study offers a comprehensive overview of the apprenticeship landscape in India.

The recommendations presented herein are of particular value to policymakers, industry leaders, training providers, and academic institutions seeking to establish a robust, inclusive, and future-ready apprenticeship system. The report's focus on convergence, innovative engagement models, and strategies to enhance participation, especially among women and marginalized groups, will help position apprenticeships as a cornerstone of India's skill development strategy.

I am confident that the insights and findings of this report will not only inform policy but also galvanize collaborative action across government, industry, and academia. By revitalizing apprenticeships, India can unlock new opportunities for its youth, enhance productivity across sectors, and reinforce its standing in the global economy.

I commend the Skill Development and Employment Division of NITI Aayog for their efforts in producing this valuable study, and I trust it will serve as a guiding resource for all stakeholders committed to building a skilled, empowered, and future-ready workforce for India.

(Suman Bery)

New Delhi
February, 2026

डॉ. अरविन्द विरमानी
Dr. ARVIND VIRMANI
सदस्य
MEMBER
Tel. : 011-23096673
E-mail : arvind.virmani@gov.in

भारत सरकार
नीति आयोग, संसद मार्ग
नई दिल्ली - 110 001
Government of India
NATIONAL INSTITUTION FOR TRANSFORMING INDIA
NITI Aayog, Parliament Street,
New Delhi - 110 001

MESSAGE

India's growth trajectory is closely tied to the quality of its Human. Sustainable growth arises not merely from capital accumulation but from the quality and effective utilization of human capital. "Learning by doing" is a critical component of Human Capital. In this context, apprenticeships assume a unique significance. They are not just an education-to-employment bridge, but a critical instrument for aligning workforce capabilities with the evolving demands of a modern economy.

The report *"Revitalizing India's Apprenticeship Ecosystem: Insights, Challenges, Recommendations and Best Practices"* provides a rigorous empirical foundation for understanding how apprenticeship training has evolved, its outcomes, and where it continues to face bottlenecks. The systematic use of data allows us to go beyond anecdotal evidence and build a clear picture of performance across States, sectors, and demographics. Such evidence is invaluable for macro-level policy design, where interventions must be scalable and sustainable.

A particularly important contribution of this study is its focus on inclusivity. The analysis of gender disparities, regional imbalances, and the participation of small enterprises underlines the fact that India's demographic dividend can only be realized if opportunities are broadened to include women and youth from logging districts. From a macroeconomic standpoint, widening participation is not only socially desirable, but also economically efficient, as it increases labour force participation and raises aggregate productivity.

Equally significant are the recommendations that emerge from this work. By addressing systemic, regulatory, and institutional barriers, the report highlights how policy can unlock apprenticeship's true potential. Strengthening industry-academia linkages, streamlining compliance, and leveraging digital technologies for outreach and monitoring are all measures that can yield compounding benefits for the economy.

I congratulate the Skill Development and Employment Division team led by Dr. Sonia Pant and comprising of Dr. Sakshi Khurana, Shailendra Yadav, Radhika Talekar, and Hitesh Sangwan for their scholarly and policy-relevant contribution. I am confident that the insights of this report will inform ongoing reforms in the apprenticeship system, foster greater industry participation, and help India build a workforce capable of supporting high, inclusive, and sustained growth in the decades ahead.

Arvind Virmani

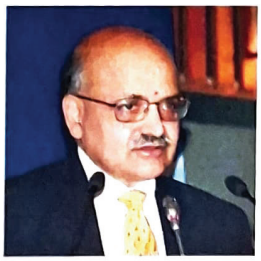
New Delhi
February, 2026

(Arvind Virmani)

बी. वी. आर. सुब्रह्मण्यम
B.V.R. Subrahmanyam
मुख्य कार्यकारी अधिकारी
Chief Executive Officer

सत्यमेव जयते

भारत सरकार
नीति आयोग, संसद मार्ग
नई दिल्ली - 110 001
Government of India
National Institution for Transforming India
NITI Aayog, Parliament Street,
New Delhi - 110 001
Tel. : 23096576, 23096574
E-mail : ceo-niti@gov.in



MESSAGE

India stands at the cusp of a historic transformation. As we move towards the vision of Viksit Bharat @2047, it is imperative that our young workforce is equipped with the right skills, competencies, and opportunities to drive inclusive and sustainable growth. Skilling, reskilling, and upskilling are not merely policy priorities, they are the foundation upon which India will build its competitive advantage in the global economy.

In this context, apprenticeships assume a central role. They provide seamless pathways from education to employment, strengthen industry-academia linkages, and ensure that learning remains responsive to the needs of a dynamic labour market. As one of the most effective forms of experiential learning, apprenticeships enable enterprises to nurture talent while empowering youth with practical, future-ready skills.

Against this backdrop, the present report provides an empirical, data-driven assessment of the trends, achievements, and challenges within the apprenticeship ecosystem. By capturing State-wise and district-level dynamics, it equips stakeholders in the apprenticeship ecosystem with actionable insights to strengthen apprenticeship pathways, enhance completion rates, and promote inclusive participation, thereby aligning with India's vision of becoming the global skill capital.

The report draws upon data, consultations, and global best practices to assess the current ecosystem, identify challenges, and put forward an implementation roadmap with short-term and long-term goals. It places particular emphasis on inclusivity, expanding opportunities for women, youth in the Northeastern region and Aspirational Districts. The report also highlights the transformative potential of digital skilling and emerging technologies in reshaping apprenticeship training.

I commend the Skill Development and Employment Division team for their dedicated efforts in preparing this study. I am confident that it will serve as a valuable resource for policymakers, industry, and academia in strengthening India's apprenticeship framework and realizing our collective ambition of building a skilled and empowered nation.

Dated: 19th February, 2026

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[B.V.R. Subrahmanyam]

स्वच्छ भारत
एक कदम स्वच्छता की ओर

सोनिया पंत
प्रोग्राम डायरेक्टर
Sonia Pant
Programme Director (Services, Education, SDE, L&E and EIU)

भारत सरकार
नीति आयोग, नीति भवन
संसद मार्ग, नई दिल्ली-110 001
Government of India
NATIONAL INSTITUTION FOR TRANSFORMING INDIA
NITI Aayog, Parliament Street, New Delhi-110 001
Phone : 011-23096712
E-mail : sonia.pant@nic.in

Message

This report is an outcome of the collective ideas, efforts, and contributions of a wide range of institutional stakeholders and experts. I wish to acknowledge them for enabling the fruition of this study and the publication of *"Revitalizing India's Apprenticeship Ecosystem: Insights, Challenges, Recommendations and Best Practices."* Apprenticeships are pivotal in equipping India's youth with practical, industry-relevant skills and in aligning education with employment opportunities. Strengthening this ecosystem is vital for realizing the vision of *Viksit Bharat* @*2047*, and this report provides an evidence-based roadmap towards achieving that goal.

The preparation of this report has greatly benefited from the active engagement of representatives from Central and State Governments, industry bodies, international organizations, sector skill councils, and skill development experts who participated in our consultations. Their inputs and perspectives have helped understand the challenges, achievements and highlight innovative approaches which can be adopted across sectors and institutions.

I thank Shri Suman Bery, Vice Chairman, NITI Aayog, for his overall guidance and support. I express my gratitude to Dr. Arvind Virmani, Member (NITI Aayog), who has guided and contributed through his leadership and valuable advice at various stages of this study. I am deeply grateful to Shri B.V.R. Subrahmanyam, CEO, NITI Aayog, whose vision and constant encouragement have been instrumental in initiating and shaping this report.

Special recognition is due to the research team led by Dr. Sakshi Khurana, Senior Specialist, and comprising Mr. Shailendra Yadav, Ms. Radhika Talekar and Mr. Hitesh Sangwan (formerly at NITI Aayog). Their dedication and commitment were crucial to the completion of this report. I also thank the entire Skill Development and Employment Division of NITI Aayog and the interns working with us at the time for their enthusiastic contribution. Appreciation is also due to Arnavi Sagar and Oshin Dharap for their useful inputs and support.

I believe this report will serve as a valuable knowledge resource for policymakers, industry leaders, and training institutions, providing actionable insights to further strengthen India's apprenticeship ecosystem and accelerate progress towards a skilled and self-reliant *Viksit Bharat*.

Sonia Pant.
(Dr. Sonia Pant)

New Delhi
February, 2026

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List of Abbreviations

Abbreviation	Description
AA	Apprenticeship Advisors
ABC	Academic Bank of Credits
AE	Active Establishment
AEDP	Apprenticeship Embedded Degree Programme
AEI	Apprentice Engagement Index
AGPCs	Apprenticeship Guidance and Placement Cells
AI	Artificial Intelligence
AICTE	All India Council for Technical Education
AISHE	All India Survey on Higher Education
ALIS	Apprenticeship Linked Incentive Scheme
AQF	Australian Qualification Framework
ASI	Annual Survey of Industries
ASSOCHAM	Associated Chambers of Commerce and Industry of India
B.A.	Bachelor of Arts
B.Com.	Bachelor of Commerce
B.Sc.	Bachelor of Science
B.Voc.	Bachelor of Vocation
BoAT	Board of Apprenticeship Training
BoG	Board of Governors
BoPT	Board of Practical Training
BPM	Business Process Management
CAC	Central Apprenticeship Council
CAGR	Compound Annual Growth Rate
CII	Confederation of Indian Industries
CoE	Centre of Excellence
CPSU	Central Public Sector Undertaking
CSR	Corporate Social Responsibility
CSS	Centrally Sponsored Scheme
CSSM	Centrally Sponsored State Managed
DBT	Direct Benefit Transfer
DC	District Collector
DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
DGT	Directorate General of Training
DHE	Department of Higher Education
DLAH	District Apprenticeship Facilitation Hubs
DMEO	Development Monitoring and Evaluation Office

Abbreviation	Description
DPIIT	Department for Promotion of Industry and Internal Trade
DSC	District Skill Committee
EPFO	Employees' Provident Fund Organisation
EQF	European Qualification Framework
ESIC	Employees State Insurance Corporation
E-to-E	Education-to-Employment
EV	Electric Vehicle
FGD	Focus Group Discussion
FICCI	Federation of Indian Chambers of Commerce & Industry
FY	Financial Year
GDP	Gross Domestic Product
GoI	Government of India
GST	Goods and Services Tax
HEIs	Higher Education Institutions
IGNOU	Indira Gandhi National Open University
IIE	Indian Institute of Entrepreneurship
IIT	Indian Institute of Technology
ILO	International Labour Organization
INR	Indian National Rupee
IoT	Internet of Things
IRDAI	Insurance Regulatory and Development Authority of India
IT	Information Technology
ITeS	Information Technology Enabled Services
ITI	Industrial Training Institute
JAA	Joint Apprenticeship Adviser
KATS	Karnataka Apprenticeship Training Scheme
KSDM	Karnataka Skill Development Mission
KYC	Know Your Customer
LWE	Left Wing Extremism
M.Voc.	Master of Vocation
MAY	Mukhyamantri Apprenticeship Yojana
MCA	Ministry of Corporate Affairs
MEA	Ministry of External Affairs
MEITY	Ministry of Electronics and Information Technology
MIS	Management Information System
ML	Machine Learning
MNC	Multi-National Corporation
MoCI	Ministry of Commerce and Industry
MoDoNER	Ministry of Development of North Eastern Region

Abbreviation	Description
MoE	Ministry of Education
MoHFW	Ministry of Health and Family Welfare
MoLE	Ministry of Labour and Employment
MoMSME	Ministry of Micro, Small & Medium Enterprises
MOOC	Massive Open Online Courses
MoSPI	Ministry of Statistics and Programme Implementation
MoU	Memorandum of Understanding
MoWCD	Ministry of Women and Child Development
MoTA	Ministry of Tribal Affairs
MSDE	Ministry of Skill Development and Entrepreneurship
MSME	Micro, Small, & Medium Enterprises
NA	Not Available
NAAC	National Assessment and Accreditation Council
NAD	National Academic Depository
NAM	National Apprenticeship Mission
NAP	National Apprenticeship Portal
NAPS	National Apprenticeship Promotion Scheme
NASSCOM	National Association of Software and Service Companies
NATS	National Apprenticeship Training Scheme
NCrF	National Credit Framework
NCS	National Career Service
NCVET	National Council for Vocational Education and Training
NCVT	National Council for Vocational Training
NeGD	National e-Governance Division
NEP	National Education Policy
NER	North East Region
NGO	Non-Governmental Organization
NIC	National Informatics Centre
NIESBUD	National Institute for Entrepreneurship and Small Business Development
NIRF	National Institutional Ranking Framework
NIT	National Institute of Technology
NITI	National Institution for Transforming India
NOS	National Occupation Standards
NRLM	National Rural Livelihoods Mission
NSDC	National Skill Development Corporation
NSQF	National Skills Qualification Framework
NSTI	National Skill Training Institutes
OJT	On-the-Job Training
PF	Provident Fund
PIA	Project Implementation Agency

Abbreviation	Description
PIB	Press Information Bureau
PLI	Production Linked Incentive
PMNAM	Prime Minister National Apprenticeship Mission
PPP	Public Private Participation
RDSDE	Regional Directorate of Skill Development and Entrepreneurship
RE	Registered Establishments
RE-AE Ratio	Active to Registered Establishments Ratio
RPL	Recognition of Prior Learning
SAA	State Apprenticeship Adviser
SaaS	Software as a Service
SANKALP	Skills Acquisition and Knowledge Awareness for Livelihood Promotion
SCVT	State Council for Vocational Training
SDE Division	Skill Development and Employment Division
SDG	Sustainable Development Goal
SIAM	Society of Indian Automobile Manufacturers
SIDH	Skill India Digital Hub
SME	Small and Medium Enterprises
SoP	Standard Operating Procedure
SPSU	State Public Sector Undertaking
SPV	Special Purpose Vehicle
SRLM	State Rural Livelihoods Mission
SSC	Sector Skill Council
SSDM	State Skill Development Mission
STT	Short Term Training
SWAYAM	Study Webs of Active-learning for Young Aspiring Minds
TNSDC	Tamil Nadu Skill Development Corporation
ToT	Training of Trainers
TP	Training Partner
TPA	Third Party Aggregator
TRIFED	Tribal Cooperative Marketing Development Federation of India Limited
TVET	Technical Vocation and Education Training
UGC	University Grants Commission
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	UNESCO Vocational Education
USTTAD	Upgrading the Skills and Training in Traditional Arts/Crafts for Development
UT	Union Territory
VET	Vocational Education and Training

Executive Summary

India's aspiration to emerge as a leading global economic and knowledge hub by 2047 is articulated through the vision of Viksit Bharat @2047. This necessitates a fundamental transformation in the way the country develops and deploys its human capital. The youth aged 15–29 years constituted 27.2% of the population in 2021 and in absolute terms, India will continue to have a youth population of approximately 345 million by 2036, the largest in the world (MOSPI, 2022). To translate this youth bulge into a demographic dividend, India must ensure that its young population is equipped with the necessary skills, education, and employment opportunities. At the heart of this transformation lies the imperative to strengthen the skilling ecosystem, particularly through the revitalization of apprenticeships.

Apprenticeship training serves as a critical conduit between formal education and employment, enabling youth to acquire job-relevant skills through structured, work-based learning. Apprenticeships boost productivity and innovation for businesses by giving them access to a pool of talented people specifically matched to their requirements. Despite successive policy efforts and the existence of flagship schemes such as the National Apprenticeship Promotion Scheme (NAPS) and the National Apprenticeship Training Scheme (NATS), there is immense scope for strengthening the Indian apprenticeship ecosystem.

As of FY 2024–25, over 51,000 establishments were active under NAPS, yet data reveals stark regional disparities in engagement and completion that vary across States and UTs (MSDE, 2025; NCVT, 2025). An emphasis on apprenticeships is necessary for developing a workforce capable of propelling India's economic expansion. This report is an exercise to analyse the structural evolution, current trends, institutional gaps, and performance bottlenecks in India's apprenticeship system and to offer strategic recommendations aimed at enhancing its scale, quality, and relevance.

The report presents a comprehensive assessment of apprenticeship policies and implementation experiences across the country. It draws on an extensive literature review of Government and industry reports, data from official public platforms such as the NAPS portal and NATS dashboard, and insights from expert consultations with stakeholders from Central and State Governments, industry associations, academia, and international organizations.

The report is divided into seven chapters. The first chapter contextualizes apprenticeships within India's broader national development goals and highlights their critical role in high-growth sectors such as advanced manufacturing, electric mobility, green energy, and digital services. The second chapter traces India's apprenticeship journey from the Apprentices Act of 1961 through successive policy reforms, presenting an overview of key stakeholders and their evolving roles.

Chapter three conducts a granular analysis of national-level trends under NAPS and NATS using official data, focusing on indicators such as establishment registrations, sectoral distributions, enterprise size, gender participation, and dropout rates. Chapter four disaggregates these patterns further, by providing a detailed state-wise and special district-wise assessment, capturing both high-performing and underperforming regions, with special focus on the Northeast Region (NER) and UTs.

Chapter five contains comprehensive

insights gained from extensive stakeholder consultations conducted by Skill Development and Employment (SDE) Division, NITI Aayog. Chapter six synthesizes challenges into five broad categories viz. policy and system-related, structural and regulatory, States and special districts specific, industry and employer related, and apprentice/aspirant-level constraints.

Drawing upon national and state-level analysis and stakeholder consultations, chapter seven presents 20 recommendations and these are categorised these into 5 interlinked pillars: (i) Policy and systemic reforms, (ii) Structural and regulatory strengthening, (iii) State and district-specific interventions, (iv) Industry and employer engagement, and (v) Apprentice- and aspirant-level support mechanisms. Each recommendation is mapped to responsible institutions, implementation timelines, and measurable performance indicators to ensure accountability and outcome tracking.

At the policy and systemic level, it recommends a unified NAM–NAP mission framework, consolidation of apprenticeship portals, seamless mobility between education and skilling pathways, and formal alignment with National Credit Framework (NCrF) and NEP 2020. On structure and governance, the report proposes the introduction of an Apprenticeship Engagement Index to benchmark performance; standardizing training and assessment protocols; strengthening post-apprenticeship benefits, and accelerating adoption and upgradation of Industry 4.0 aligned ITIs. It emphasizes on the role of District Skill Committees as nodal implementation anchors and targeting high-potential, yet low-performing special districts to improve completion and transition outcomes.

Industry-facing reforms focus on deepening MSME participation through cluster-based consortia and community networks, especially in traditional skills sectors; promoting a Startup Apprenticeship Programme (SAP); improving industry perception through strategic outreach; expanding apprenticeships into the gig and platform economy; and reducing regulatory frictions that deter employer participation. The report also underscores the need to build institutional capacity among training providers and intermediaries to deliver quality, demand-driven training. For apprentices and aspirants, the recommendations prioritize improving stipend adequacy and retention, facilitating travel and accommodation support, expanding insurance and social security coverage, strengthening early awareness and counselling systems, enabling international mobility and exposure and advancing women's inclusion across sectors and geographies.

The report positions apprenticeships as a strategic investment in human capital and national competitiveness. Through the effective implementation of recommendations, stakeholders in the apprenticeship ecosystem can together address the current skill deficit, unlock the potential of India's demographic dividend, and build an apprenticeship ecosystem that is agile, inclusive, and aligned with the demands of the 21st-century world of work.

Building a Future-Ready Apprenticeship Framework: Key Recommendations

1 Policy and Systemic

- NAM & NAP: a unified mission to mainstream apprenticeship
- Pathways for seamless Education-skilling mobility
- Increase eligibilty of establishments and the band to engage apprentices
- Apprenticeship Linked Incentive scheme for aspirational districts, NE states & women apprentices
- Expanding apprenticeship in emerging, future ready and social impact sectors

2 Structure and Regulatory

- Apprenticeship Engagement Index (AEI) for States and UTs
- Standardization of evaluation and assessment of training
- Expanding apprenticeships through post-training support
- Strategic industry adoption and upgradation of ITIs

3 States/UTs & Special District Specific

- District Skill Committees to catalyse local apprenticeship transformation
- Targeted support and systematic strengthening for improved apprenticeship completion rates in special districts

4 Industry & Employers

- Strengthening apprenticeship participation through MSME-cluster consortia, community networks, & traditional skills integration
- Transforming industry perception to position apprenticeship as strategic and aspirational investments
- Integrating apprenticeships in India's gig economy; a strategic framework for digital workforce development

5 Apprentice & Aspirant

- Provision for travel and accommodation facilities
- Expand insurance and other social security measures for apprentices
- Creating aspirations through early awareness and counselling
- Enhancing global competitiveness through international mobility, exchange pathways, & competitions
- Enhancing women inclusion in apprenticeship initiatives

1

Building the Future: How Apprenticeships Power India's Viksit Bharat @2047 Vision

1.1 Introduction

India's ambitious vision of Viksit Bharat @2047 envisions a transformative shift towards a high-tech, innovation-driven economy. Several national initiatives such as Make in India, PM-Gati Shakti, National Infrastructure Pipeline, Industrial Smart Cities, the Production Linked Incentive (PLI) Scheme, and the aspiration to make India a global manufacturing and services hub, all align with the national vision. At the core of these goals is the necessity to develop a workforce that is not only highly skilled but also adaptable to the rapid technological changes across all sectors including advanced manufacturing, information technology, healthcare, renewable energy, financial services, logistics, and semiconductor production.

Advanced manufacturing relies on precision engineering and automation, demanding a workforce adept in areas like robotics, AI, and IoT. Similarly, sectors such as renewable energy, healthcare, IT, logistics, and financial services require expertise in emerging technologies, environmental sustainability, digital transformation, and advanced practices. The apprenticeship model in India is being positioned to support these national goals by addressing the skill gaps that impede industrial and economic growth across the entire spectrum of the economy.

Apprenticeship schemes such as National Apprenticeship Promotion Scheme (NAPS) and National Apprenticeship Training Scheme (NATS) bridge these gaps by integrating on-the-job training with theoretical knowledge, ensuring that individuals are prepared to meet the specific demands of these high-growth and high-impact sectors. Furthermore, apprenticeship programmes enhance productivity and global competitiveness by enabling industries and service sectors to maintain a pipeline of skilled talent. A key feature of apprenticeship is its potential to prepare youth for their future careers, promote career advancement, and foster lifelong learning aligning with the dynamic nature of the modern economy. As industries and services evolve, along with the way goods and services are delivered, apprenticeships can be tailored to equip individuals with new competencies, ensuring their relevance in an ever-changing job market.

This adaptability is vital for achieving India's vision of becoming a knowledge economy and a leader in high-tech industries and services, particularly in areas like semiconductor manufacturing, green jobs (renewable energy, green hydrogen, energy storage, sustainable infrastructure), defence technologies (defence manufacturing and R&D), artificial intelligence (AI)/machine learning (ML) technologies, information technology (IT) and digital services (including cloud, cybersecurity, SaaS), electric vehicles (EVs), automotive (including battery tech and charging infrastructure), logistics, and financial services, where global demand is rapidly increasing.

A strong and effective ecosystem for apprenticeship training can ensure that apprenticeship is not merely a training mechanism, but a catalyst for economic transformation. By harmonizing with national goals as well as with international standards, India's apprenticeship framework can promote innovation, inclusivity, and industry relevance. As India positions itself as a global manufacturing hub and a leader in sustainable development, apprenticeship programmes will play a critical role in equipping its workforce to meet the challenges of the 21st century, driving the nation towards the ambitious goal of Viksit Bharat @2047.

1.2 Understanding apprenticeship: definition and scope

Apprenticeship is a cornerstone of workforce development, providing opportunities for skill acquisition and practical learning. It facilitates the transition from education to employment, bridging the gap between theoretical knowledge and industry-specific skills.

UNESCO-UNEVOC defines an apprentice as "a person who undertakes training

under an apprenticeship programme," and elaborates that apprenticeships are "formal vocational education and training schemes that combine learning in education or training institutions with substantial work-based learning in companies and other workplaces, lead to nationally recognised qualifications, are based on an agreement defining the rights and obligations of the apprentice, the employer and, where appropriate, the vocational education and training institution, and with the apprentice being paid or otherwise compensated for the work-based component (UNESCO-UNEVOC, 2025).

According to the ILO[1], apprenticeships are "a unique form of technical vocational education and training, combining on-the-job training and off-the-job learning, which enable learners from all walks of life to acquire the knowledge, skills and competencies required to carry out a specific occupation. They are regulated and financed by laws and collective agreements and policy decisions arising from social dialogue, and require a written contract that details the respective roles and responsibilities of the apprentice and the employer; they also provide the apprentice with remuneration and standard social protection coverage. Following a clearly defined and structured period of training and the successful completion of a formal assessment, apprentices obtain a recognized qualification" (ILO, 2025).

The World Bank typically aligns with the ILO and UNESCO in its definition, describing apprenticeships as structured programmes that combine work-based learning (on-the-job training) with classroom-based instruction, governed by a formal agreement or contract, and leading to a recognized occupational qualification (World Bank, 2013).

There are various forms of work-based learning that are prevalent apart from apprenticeship viz. informal apprenticeship, internship and traineeship. At times, these terms may have confounding meanings. It might be helpful then, to clarify the distinction between various forms of work-based learning.

Informal apprenticeships are to be found in the informal economy and provide for the transmission of appropriate skills from an experienced craftsperson to a young person, usually covering all skills of a trade. These do not follow a curriculum, do not lead to qualifications and are regulated by social norms and traditions rather than laws and regulations.

Internships and traineeships provide young people, who have finished their studies or are still studying, with an opportunity to learn in a workplace - usually covering specific aspects of a job or an occupation, but not all skills needed for it – while working in a particular sector of the economy or in a specific occupation. Typically, these programmes also do not follow a curriculum or lead to qualifications based on an assessment of skills, but with internships and traineeships in particular, the differences between the two depend significantly on how the stakeholders in a particular country define them.

In short, apprenticeships are a form of work-based learning, but not all forms of work-based learning are apprenticeships. Accordingly, this report focuses on apprenticeships; and does not cover initiatives on internships including those by the Government such as PM Internship Scheme.

As per the Apprentices Act, 1961, Apprenticeship training is a course of training in an industry or establishment, under a contract of apprenticeship which consists of (a) basic training component and (b) on-the-job-training (OJT)/practical training at workplace. Firms benefit from low-wage workers (usually early in their careers), and individuals have the opportunity to receive firm-specific training. This arrangement is very popular and useful for promoting the transition from school to work because it gives youth the opportunity to develop

[1]ILO Toolkit for Quality Apprenticeships Volume I: Guide for Policy Makers, 2017

Fig 1.1. Apprenticeship Career Journey

skills that are directly relevant to the labour market after completion of a course of study.

The Apprentices Act, 1961 was formalized to utilize industry facilities for skill training, enabling youth to acquire industry-relevant skills through on-the-job training. The Apprentices Act has been amended several times to address operational challenges and make it industry-friendly. The Apprenticeship Rules, 1992 were formulated under the Apprentices Act, 1961 and provide a detailed regulatory framework for apprenticeship training in India.

Ministry of Skill Development and Entrepreneurship (MSDE), has launched initiatives like the NAPS and undertaken recent reforms in the Apprenticeship Rules. MSDE administers NAPS for various trades, while the Ministry of Education (MoE) manages the NATS for engineering graduates and diploma holders.

The NEP 2020 also highlights the integration of vocational education and apprenticeship within the formal education system, promoting a culture of "learning by doing" and "earning while learning". Through this dual approach, it can be ensured that individuals from various socio-economic backgrounds have access to opportunities, establishing apprenticeship as a key element in inclusive skill development (PIB Ministry of Education, 2022).

1.3 Key Insights from Literature Review

The literature on India's apprenticeship landscape offers a nuanced and multidimensional understanding of the structural, institutional, and operational challenges impeding the effective implementation of apprenticeship schemes, particularly the NAPS and the NATS. Drawing on a wide array of sources, including parliamentary committee reports (notably the 33rd, 35th, and 49th reports of the Standing Committee on Labour, Textiles and Skill Development), Jobs & Skills report (DMEO, NITI Aayog, 2021), and research conducted by industry bodies such as FICCI and organizations like TeamLease, Wheebox, and Just Jobs Network, the literature highlights a consistent set of bottlenecks and reform imperatives.

A prominent finding across these studies is the limited awareness and uptake of apprenticeship programmes among both employers and youth. Weak industry-academia linkages, inadequate institutional coordination, and fragmented regulatory

frameworks continue to constrain the scalability and effectiveness of apprenticeship initiatives. Parliamentary committee reports and DMEO (2021) report state lack of employer incentives, and regional disparities as persistent challenges. Furthermore, the limited integration of apprenticeship with formal education pathways, as emphasized by FICCI and similar bodies, restricts its recognition as a credible alternative to conventional academic routes.

Several reports also draw attention to the misalignment between the supply of skills and labour market demand. Employer surveys conducted by TeamLease (2024) and Wheebox (2025) reveal that while businesses acknowledge the value of apprenticeship, their participation is hindered by administrative burdens, low stipend caps, and lack of clarity in implementation guidelines. Simultaneously, youth perspectives captured in these studies reflect concerns about career progression, inadequate social protection, and gendered barriers, particularly in non-traditional trades.

The reviewed literature not only diagnoses systemic inefficiencies but also provides forward-looking recommendations. These include strengthening institutional governance, ensuring better policy coherence, enhancing industry engagement, and embedding apprenticeships within broader skilling and employment strategies. Methodologically, the reports employ a

mix of quantitative surveys, stakeholder consultations, secondary data analysis, and international comparisons, enriching the evidence base for policy reform.

Importantly, while the literature offers critical diagnostic insights, it also highlights the need for disaggregated, data-driven analysis to examine the real-world functioning of apprenticeship schemes across different sectors, geographies, and demographic groups. By leveraging data on enrolment trends, regional patterns, completion rates, and employer participation, this report provides a grounded assessment of how national apprenticeship schemes perform in practice and where targeted interventions are most needed. For the detailed literature review undertaken for this report, please refer Annexure 1.

1.4 Approach to the study

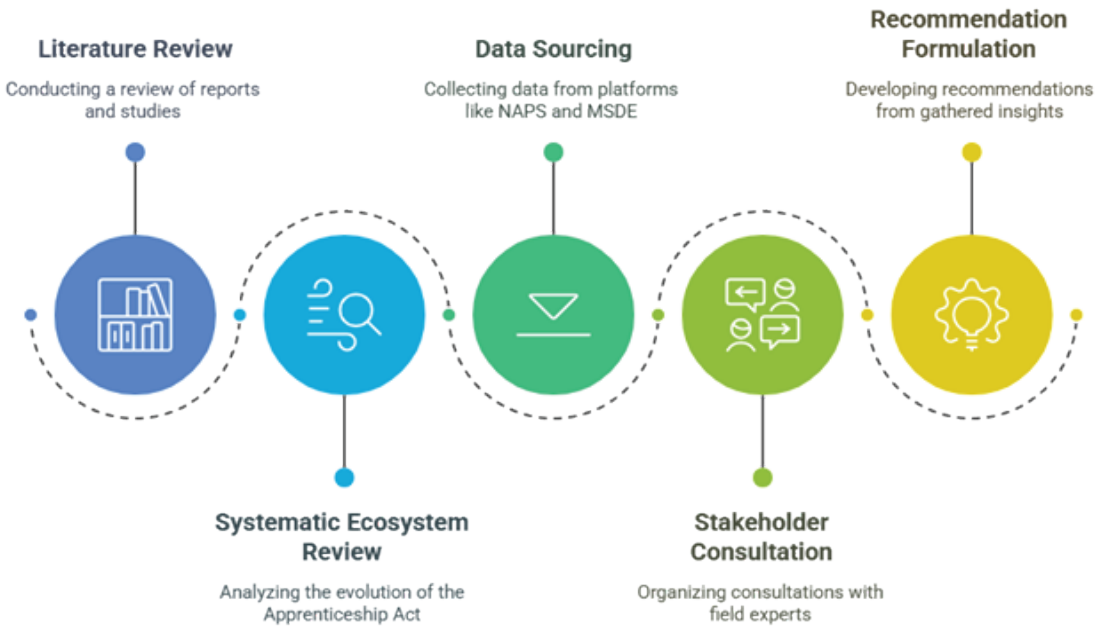
As depicted in Figure 1.2, the research methodology of this report was carefully deliberated upon by the Skill Development and Employment Division of NITI Aayog. A systematic review of the current apprenticeship ecosystem followed, entailing a detailed examination of the historical development of the Apprentices Act, 1961, its subsequent amendments, and the array of schemes introduced by both central and State Governments over time. This review facilitated an accurate mapping of policy evolution and implementation trends.

The research process included an extensive literature review (including reports of Parliamentary Committees on the subject), incorporating reports from reputable organizations, pertinent case studies, and academic research papers focused on apprenticeships. This foundational step led to a comprehensive understanding of the topic.

To ensure the findings were grounded in robust evidence, the research team utilised secondary data sourced from official public platforms, including but not limited to NAPS and NATS portals. These data sources provided quantitative insights into programme reach, participation rates, and operational outcomes. Along with all-India insights, a comparative analysis of States/ UTs was undertaken.

In order to understand the challenges in the apprenticeship ecosystem, a number of stakeholder consultations were organised.

Fig 1.2.: Methodology for revitalizing apprenticeships in India



Representatives from Central Ministries, State Government Departments, industry leaders, international organizations and academia participated in these consultations. The discussions also led to exchange of ideas on good practices and innovative models that can be adopted across the board. Expert contributions offered valuable qualitative insights and enriched the analysis with practical experiences and sectoral viewpoints. The recommendations articulated in this report are derived from a careful synthesis of secondary data analysis, stakeholder insights, and learnings from apprenticeship models implemented by various Indian States and global examples. Details on stakeholder consultation are mentioned in Chapter V.

1.5 Structure of the report

This report offers a structured and comprehensive exploration of India's apprenticeship ecosystem, beginning by tracing its historical evolution and the legislative milestones that have shaped its current form. Chapters I and II provide an in-depth assessment of the present landscape, examining the reach, and evolution. Chapters III and IV present insights and trends across India and for States/UTs and special districts. Chapter V provides details of insights that emerged from the stakeholder consultations. Building on this foundation, Chapter VI analyses challenges that continue to impede apprenticeship training. Drawing on both domestic and international case studies, as well as insights from stakeholder consultations, chapter VII presents evidence-based recommendations and best practices for revitalizing the framework. Each chapter makes an attempt to contribute a distinct perspective, collectively charting a forward-looking pathway to strengthen the apprenticeship system as a driver of employability, productivity, and inclusive economic growth.

Chapter II - India's apprenticeship journey from 20th to 21st century

This chapter presents a historical and institutional overview of the evolution of India's apprenticeship framework, tracing its development from the 20th century to the present day. It commences with the Apprentices Act of 1961, that established the foundation for formal apprenticeship training in the country. The chapter outlines the gradual transformation of the apprenticeship landscape, highlighting key policy reforms and structural realignments that have sought to broaden participation and enhance industry collaboration. The chapter maps all the key stakeholders involved in the NAPS and the NATS along with their respective roles and responsibilities.

Chapter III - Apprenticeship in practice: Trends, Performance, and Insights (National Trends)

This chapter provides an overview of the trends and performance of India's apprenticeship initiatives, particularly the major schemes - NAPS and the NATS. Using data from official public sources, it tracks key indicators such as Registered Establishments (REs) and Active Establishments (AEs), dropout rates, engagement and completion of training by apprentices and their trade preferences. By disaggregating data by enterprise size and gender, it reveals both existing challenges and areas of progress among States/UTs and special districts. It also maps the distribution of apprenticeships across public and private sectors. The analysis attempts to interpret performance trends to offer insights into the evolving dynamics of India's apprenticeship landscape.

Chapter IV - Trends and insights under NAPS and NATS (States and Special regions)

Chapter IV provides a deeper analysis of apprenticeship trends under the NAPS and the NATS across Indian States, UTs, and special regions from FY 2018-19 to FY 2024-25. The chapter evaluates the differential impact, resource allocation, and programme effectiveness by tracking State-wise and district-wise registrations of

establishments and their active status, as well as apprentice engagement. The analysis categorizes States into top and bottom performers and separately examines the performance of UTs and North East States. For NATS, the chapter offers a State-wise analysis of apprentices engaged, focusing on spatial patterns, trends, and regional disparities. The chapter identifies leading and lagging States in apprenticeship adoption and provides insights into the distinct institutional and economic contexts of UTs and North East States. It concludes by emphasizing the importance of tracking these trends for improving apprenticeship penetration and addressing India's skill deficit.

Chapter V - Stakeholder consultations

As a part of this study, a series of stakeholder consultations were undertaken with representatives from Central Ministries, State Governments, industry bodies, skill development experts, and multilateral organizations. The consultations discussed the challenges in the implementation of apprenticeship training, highlighting perspectives from Central Government, State Governments, industry, training providers and sector skill councils. Stakeholders also highlighted innovative practices and possible solutions for strengthening apprenticeship training, contributing to knowledge exchange among the participants. The challenges, best practices, and policy recommendations presented in this report are substantially based on the insights gained from these discussions.

Chapter VI - Unpacking the roadblocks: challenges in India's apprenticeship ecosystem

This chapter examines the multifaceted challenges obstructing the growth and effectiveness of India's apprenticeship ecosystem such as limited industry participation, regulatory barriers, quality of training, and gaps in alignment with labour market demands that continue to impede the full realization of apprenticeship potential in India. Drawing on consultations with Government, industry, and international experts, the chapter categorizes roadblocks into policy, structural, industry, and aspirant-related issues. It aims to provide a guided understanding of these bottlenecks and recommends pathways to revitalize and scale India's apprenticeship framework. The ultimate goal is to align apprenticeships with the evolving demands of the labour market and ensure equitable access and outcomes for all stakeholders.

Chapter VII - Building a future-ready apprenticeship framework: Key recommendations

This chapter presents actionable recommendations to transform India's apprenticeship ecosystem. The recommendations stem from identified challenges and extensive consultations with government, industry, academia, and international experts. They are organized around four pillars: policy and system, structure and regulation, industry and employer engagement, and apprentice and aspirant empowerment.

The chapter advocates for unifying and streamlining the country's diverse apprenticeship schemes into a single, integrated system to enhance accessibility and relevance. It highlights the need for robust mechanisms to monitor and benchmark apprenticeship quality and performance across States and districts, while empowering local institutions to drive localized transformation. The chapter also showcases good practices from other countries and successful State and Central Government initiatives to inspire and inform future policy. An implementation roadmap is provided for each one of the recommendations.

2

Bridging Eras: India's Apprenticeship Journey from 20th to 21st Century

2.1 Introduction

In India, the apprenticeship ecosystem is regulated by the Apprentices Act, 1961 which was enacted with the objective to fully utilize the industries to provide practical on-the-job-training (OJT) and promote skilled manpower to contribute to industrial production of the country (Apprentices Act, 1961). The two main objectives of Apprentices Act are to regulate and promote the apprenticeship training in the industry and utilize the facilities available in the industry for imparting on-the-job/ practical training with a view to meet the requirements of skilled manpower for the industry.

It regulates the overall training programme, which includes curriculum design, duration of training, examination and certification of the apprentices and outlines the framework for apprenticeship contracts, the obligations of employers and apprentices, and the duration and termination of apprenticeships. The Central Apprenticeship Council (CAC), a committee headed by Hon'ble Minister of Skill Development and Entrepreneurship, is an apex statutory body under the Apprentices Act, 1961 and it advises the Central Government on its implementation in India.

Currently, under the Apprentices Act, 1961, establishments with a workforce of 30 or more employees, including contractual staff, are mandated to engage apprentices within a range of 2.5% to 15% of their total workforce strength. This framework ensures that industries contribute to skill development through practical training opportunities.

2.1.1 India's Apprenticeship Journey through 20th to 21st Century

The apprenticeship ecosystem in India has undergone significant transitions over the years since India's Independence, evolving through legislative reforms, programmatic innovations, and the integration of digital tools to address workforce development challenges. Below is an explanation of the transition:

Craftsman Training Scheme (CTS) – 1950: The foundation of the apprenticeship ecosystem in India was laid with the Craftsman Training Scheme (CTS), which provided pre-apprenticeship training for ITI trainees. The ITIs continue to play a critical role in offering pre-apprenticeship training under the CTS framework. They prepare students with the necessary skills and knowledge to transition into formal apprenticeship programmes, ensuring alignment with industry requirements. (Directorate General of Training, 2025).

Apprentices Act – 1961: The Apprentices Act of 1961 established the legal framework for apprenticeship training in India. It defined categories, regulations, contract obligations, and promoted a skilled workforce through structured on-the-job training programmes. This act marked the formalization of apprenticeships as a critical component of vocational education.

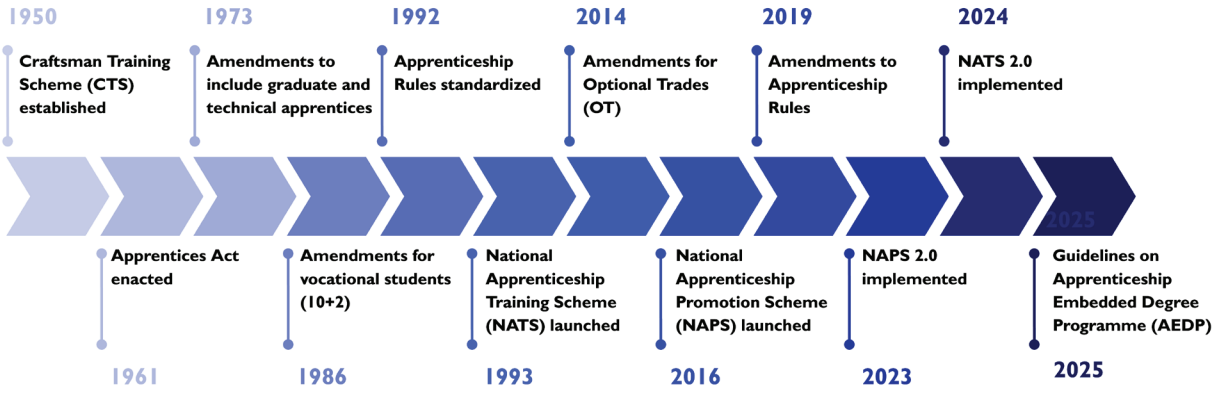
Amendments to the Apprentices Act - 1973 and 1986: In 1973, amendments expanded the scope of apprenticeships to include graduate and technician apprentices. Further changes in 1986 enabled apprenticeships for vocational students (10+2), fostering industry exposure for young learners and broadening participation.

Apprenticeship Rules – 1992: The Apprenticeship Rules standardized implementation across industries by setting uniform standards for training and quality. These rules ensured consistency in apprenticeship practices nationwide.

National Apprenticeship Training Scheme (NATS) – 1993: NATS focused on practical training for graduates and diploma holders across various industries. It emphasized hands-on training, certification, and alignment with industry needs, providing opportunities for higher education graduates to gain relevant skills.

Amendments to the Apprentices Act – 2014: The amendments introduced Optional Trades (OT) tailored to emerging industry requirements and set an age

Figure 2.1: India's Apprenticeship Journey through 20th to 21st Century (1950-2025)



limit for hazardous trades. This flexibility allowed industries to create customized apprenticeship programmes aligned with market demands.

National Apprenticeship Promotion Scheme (NAPS) – 2016: NAPS incentivized employers to engage apprentices by sharing up to 25% of prescribed stipends (up to ₹1,500/month). It also reimbursed basic training costs for designated trades, fostering greater participation in apprenticeship programmes.

Reforms in Apprenticeship Rules – 2019: Reforms introduced in 2019 simplified processes for both employers and apprentices, and changed the engagement band of apprentices, eligibility criteria to engage apprentices, period of apprenticeship, revised the minimum stipend, among other changes.

The employers having four or more workers shall only be eligible to engage apprentices and engagement of apprentices by establishment having thirty or more number of workers shall be obligatory. It also increases the band of apprenticeship engagement from the earlier maximum limit of 10% to a revised range of 2.5% to 15% of the total workforce, thereby allowing greater industry participation in apprenticeship training.

NAPS 2.0 – 2023: The latest iteration, NAPS 2.0, replaced manual reimbursement processes with Direct Benefit Transfer (DBT) mechanisms, ensuring transparency and efficiency in stipend payments.

NATS 2.0 - 2024: NATS 2.0 launched in July 2024 is an upgraded version of NATS training scheme, aimed at enhancing industry academia collaboration and employability. The scheme, implemented through the NATS 2.0 portal with support from AICTE and BoATs/BoPTs, serves as a one-stop platform for managing the complete apprenticeship lifecycle from registration and vacancy advertisement to contract creation, certification, and DBT-based stipend disbursal. The revamped scheme simplifies processes through a unified digital system ensuring transparency, efficiency, and wider industry participation.

Apprenticeship Embedded Degree Programme (AEDP) – 2024: The Apprenticeship Embedded Degree Programme (AEDP) was announced in Union Budget 2020-21 to improve employability of students. MoE constituted a committee for framing guidelines on "Apprenticeship Embedded Degree Programme for Technical Education dated 6th June, 2023 (MSDE, 2025).

Reforms in Apprenticeship Rules - 2025: Reforms introduced in 2025 include revisions in re-engagement rules, definition of 'degree apprenticeship,' 'institution,' 'contractual staff,' inclusion of PwDs and further revisions in the minimum monthly stipends.

Table 2.1 Minimum Rate of Stipend Payable to Apprentices under NAPS		
Sr. No.	**Category**	**Minimum Stipend Rate (per month in ₹)**
1	School pass-outs (Class 5th - Class 9th)	6,800/-
2	School pass-outs (Class 10th)	8,200/-
3	School pass-outs (Class 12th)	9,600/-
4	National or State certificate holder	9,600/-
5	Technician (vocational) apprentice or Vocational Certificate holder or Sandwich Course (Students from Diploma Institutions)	9,600/-
6	Technician apprentices or diploma holder in any stream or sandwich course (students from degree institutions)	10,900/-
7	Graduate apprentice or Degree apprentice or Degree in any stream	12,300/-

(Source: Gazette Notification on Apprenticeship (Amendment) Rules, 2025)

2.2 National Apprenticeship Promotion Scheme (NAPS)

MSDE launched the NAPS on August 19, 2016, with the objective of encouraging establishments to engage apprentices under the Apprentices Act, 1961. This initiative is designed to strengthen the apprenticeship ecosystem in India by incentivizing employers and promoting skill development among the workforce.

Under NAPS, financial assistance is provided to participating employers in the form of reimbursement for a portion of the stipend paid to apprentices. Specifically, the scheme reimburses 25% of the prescribed stipend amount, subject to a maximum of ₹1,500 per apprentice per month. In addition to stipend support, NAPS also addresses the need for foundational skills among candidates who require basic training before starting their apprenticeship. The scheme covers basic training costs up to ₹7,500 per candidate for a maximum duration of 500 hours. These provisions aim to bridge skill gaps and create a robust framework for apprenticeship training, ultimately contributing to the development of a skilled and employable workforce in the country.

2.2.1 Key Provisions under NAPS 2.0

Building on the success of NAPS, the National Apprenticeship Promotion Scheme 2.0 (NAPS-2) was launched on August 23, 2023. NAPS-2 represents an evolved version of the original scheme and is implemented as a Central Sector Scheme, fully funded by the GoI. It forms a part of the broader Skill India Programme, which encompasses other key sub-components such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 4.0 and Jan Shikshan Sansthan (JSS) (MSDE, 2023).

- No reimbursement of basic training cost will be provided under NAPS-2, both for DT and OT.
- The stipend support by GoI will be paid through Direct Benefit Transfer (DBT) to the bank account of apprentices.
- No stipend support will be available under NAPS-2 to the Central and State Government Departments and Central and State Public Sector Undertakings/ Enterprises, including Public Sector Banks.
- Large private organisations will be encouraged to join a "Give It Up Campaign" and forego the stipend support by GoI under the scheme.
- To avail partial stipend support under NAPS-2, upper age limit for apprentices will be 35 years at the time of registration on the portal. For establishments that do not want the partial stipend support under NAPS-2, the upper age limit will be as specified by the Apprentices Act, 1961.

2.3 National Apprenticeship Training Scheme (NATS)

NATS is a flagship initiative of the GoI under MoE, aimed at equipping Indian youth with practical skills in various trade disciplines. Established under the provisions of the Apprentices Act, 1961, and amended in 1973, NATS provides on-the-job training (OJT) opportunities for graduate students, diploma holders, and vocational certificate holders. The training duration ranges from 6 months to 1 year, offering participants hands-on experience to enhance their employability.

KEY FEATURES OF THE SCHEME INCLUDE:

- Sandwich Apprenticeships: The scheme accommodates students enrolled in degree or diploma programmes where apprenticeship is a mandatory component of their curriculum.
- Eligibility Window: Graduates and diploma holders are eligible to apply for apprenticeship under NATS within five years of completing their graduation.
- Lifecycle Management: The entire process, from application to completion of training, is managed through the dedicated NATS portal, ensuring seamless administration and monitoring.
- Stipend Support: The Government of India provides financial assistance by covering 50% of the prescribed minimum stipend payable to apprentices, thereby encouraging employer participation.

The scheme is implemented through four Regional Boards of Apprenticeship/ Practical Training (BoATs/BoPT) located in Mumbai, Kanpur, Chennai, and Kolkata. These boards operate in accordance with the policies and guidelines formulated by the Central Apprenticeship Council (CAC), the apex statutory body constituted under the Apprentices Act, 1961. Through its structured framework and regional implementation, NATS plays a critical role in bridging the gap between academic learning and industry requirements, thereby contributing to the development of a skilled workforce in India. NATS provides structured apprenticeship opportunities to graduates and diploma holders who have no prior relevant work experience. The duration of the apprenticeship ranges from 6 months to 1 year, offering practical, hands-on training to enhance employability

The primary objective of the scheme is to bridge the gap between theoretical education and practical skills by offering hands-on training to fresh graduates and diploma holders. This enhances their technical competencies and prepares them for employment aligned with industry needs. The scheme also aims to strengthen apprenticeship training by expanding its scope to include students from non-engineering streams such as Humanities, Science, and Commerce, alongside engineering students. Apprenticeship opportunities for non-engineering graduates are tailored to trades such as Travel & Tourism Management, Library Science, Banking & Financial Services, Hospitality, Office Management, and others required by industry.

Furthermore, the scheme emphasizes inclusivity by targeting underserved regions such as aspirational districts and tribal areas. It seeks to raise skill standards across sectors while fostering economic growth through a skilled workforce. The duration of apprenticeship training ranges from 6 months to 3 years, depending on industry requirements, with reimbursement of stipends limited to a maximum of 12 months. End-to-end management of apprenticeship training is facilitated through the NATS portal, ensuring seamless administration and monitoring of the programme.

2.3.1 NATS to NATS 2.0

On July 30, 2024, the National Apprenticeship and Training Scheme (NATS) 2.0 portal was launched. This initiative aims to enhance the employability of young graduates and diploma holders by providing

Table 2.2 Minimum Rate of Stipend under NATS		
Category of Apprenticeship	**Prescribed Minimum amount of stipend in ₹**	**Government Share in ₹**
Graduate Apprentices	9,000/-	4,000/-
Diploma Apprentices	8,000/-	4,500/-
Sandwich Course (Diploma Students)	7,000/-	3,500/-

(Source: Ministry of Education, 2025)

on-the-job training across sectors such as IT, manufacturing, and automobiles. The NATS 2.0 portal serves as a comprehensive platform for managing the apprenticeship lifecycle, facilitating student registrations, vacancy advertisements, application processes, contract creation, certification, reporting, and stipend disbursal through DBT. This effort aligns with the National Education Policy (NEP) 2020's goal to integrate vocational and general education, thereby bridging the skills gap and preparing youth for future employment opportunities (MoE, 2024).

2.4 Stakeholders involved in implementing apprenticeship schemes

Here are some key stakeholders in the skill policy landscape of India, particularly focusing on the apprenticeship ecosystem under schemes like NAPS and NATS. Each stakeholder plays a distinct role in driving skill development, vocational education, and apprenticeship training across the country.

2.4.1 Stakeholders and their Roles and Responsibilities under NAPS

i. Ministry of Skill Development and Entrepreneurship (MSDE):

Ministry of Skill Development and Entrepreneurship (MSDE) is responsible for the overall regulation, management, and monitoring of NAPS-2.

ii. National Council for Vocational Education and Training (NCVET):

National Council for Vocational Education and Training (NCVET) is the overarching regulator establishing regulations and standards to ensure quality in the Technical and Vocational Education & Training (TVET) space.

iii. Regional Directorate of Skill Development & Entrepreneurship (RDSDEs):

RDSDEs act as Apprenticeship Advisers (AAs) for Designated Trades under Central Government jurisdiction. Promote, implement, monitor, and supervise NAPS-2, approve contracts, conduct examinations and certifications, coordinate with State Governments/UTs, and engage educational institutions to expand apprenticeship reach.

iv. State Government/Union Territories (UT) Administration:

State Governments implement apprenticeship training for Designated and Optional Trades under their jurisdiction. Appoint State Apprenticeship Advisers (SAAs) and Deputy/Assistant Advisers. Monitor apprenticeship engagement through District Skill Committees (DSCs) and State Skill Development and Entrepreneurship Committees (SSDECs).

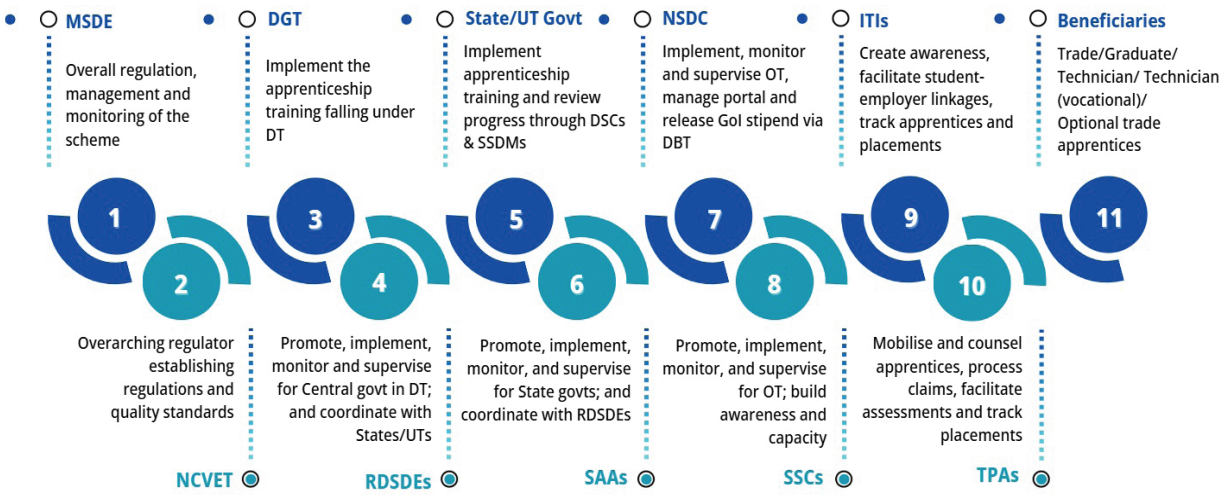
v. State Apprenticeship Advisers (SAAs):

SSAs act as Apprenticeship Advisers for Designated and Optional Trades under State jurisdiction. Promote, implement, monitor, and supervise NAPS-2, approve contracts, conduct examinations and certifications, build stakeholder capacity, and coordinate with RDSDEs. Appoint Mission Directors or Assistant Apprenticeship Advisers at district level for effective implementation.

vi. National Skill Development Corporation (NSDC):

NSDC's major role is to implement, monitor, and supervise Optional Trades apprenticeship under Central Government

Figure 2.2: STAKEHOLDERS IN NAPS



(Source: MSDE, 2025)

establishments through Sector Skill Councils (SSCs). Manage apprenticeship portal, release stipend support via DBT, conduct awareness campaigns, and promote stakeholder engagement.

vii. Sector Skill Councils (SSCs):

SSCs implement Optional Trades apprenticeship, promote, monitor, and supervise NAPS-2, approve contracts, conduct examinations and certifications, engage stakeholders, and ensure sector establishments actively participate.

viii. Industrial Training Institutes (ITIs):

ITIs create awareness, facilitate apprenticeship for students, organize promotional activities, track students during apprenticeship and placements for one year, collect employer feedback, and integrate apprenticeship into District Skill Development Plans (DSDPs).

ix. Third Party Aggregators (TPAs):

TPAs bridges demand between establishments and apprentices, mobilize and counsel candidates, meet curriculum requirements, process claims, facilitate assessments and certifications, promote the scheme, and track placements for one year. Submit monthly performance reports to NSDC/MSDE.

x. Directorate General of Training (DGT):

DGT implement and regulate apprenticeship training for Designated Trades, ensuring compliance with the Apprenticeship Act.

xi. Beneficiaries:

Trade/Graduate/Technician/Technician (Vocational)/ Optional trade apprentices undergo Basic Training and On-the-Job Training (OJT) at industry workplaces, gaining practical skills and hands-on experience.

2.4.2 Stakeholders and their Roles and Responsibilities under NATS

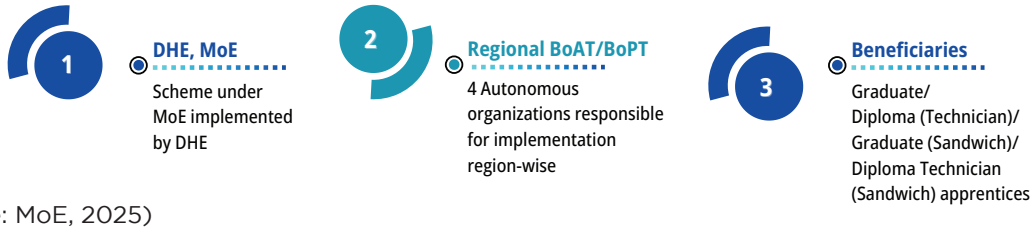
i. Ministry of Education:

The Department of Higher Education (DHE) under the MoE administers the NATS and oversees its overall implementation, ensuring effective coordination between training institutions and industries.

ii. Board of Apprenticeship Training (BoAT) and Board of Practical Training (BoPT):

The Board of Apprenticeship Training (BoAT) and Board of Practical Training (BoPT), located in Mumbai, Kanpur, Chennai, and Kolkata, implement NATS under the DHE. They facilitate training placements, vet apprenticeship contracts, and reimburse the government's share of stipends to training

Figure 2.3: STAKEHOLDERS IN NATS



(Source: MoE, 2025)

establishments. Board of Governors (BoG) monitors BoAT by reviewing the progress of the Apprenticeship Training Scheme during its peri odic meetings held throughout the financial year.

iii. Beneficiaries:

NATS provides training courses to fresh engineering graduates, diploma holders, or those pursuing these qualifications, enabling them to gain practical industry experience in relevant establishments. NATS is expanding to include non-engineering degree (B.A., B.Com., B.Sc.) and diploma students by embedding apprenticeships within their curriculum through the Apprenticeship/ Internship Embedded Graduate Programme, providing practical work experience alongside academic studies.

iv. Other Stakeholders:

- Industry and establishments including Central and State Government departments, Public Sector Undertakings, Private Limited Companies, and MNCs provide apprenticeship training to graduates and diploma holders. They engage apprentices and are responsible for paying their monthly stipends.
- University Grants Commission (UGC) plays a significant role in facilitating and promoting NATS through urging HEIs to register on NATS portal, issuing guidelines for HEIs to embed apprenticeship into their undergraduate degree programmes through a structured credit system, as part of the AEDP.
- All-India Council for Technical Education (AICTE) reforms curricula to include vocational training, hands-on experience, strengthening apprenticeship training for technical students.

Conclusion

As observed in this chapter, the evolution of India's apprenticeship ecosystem reflects a steadfast commitment to skill development. Stakeholders have together worked to bridge the gap between academic learning and practical training. The introduction of DBT under NAPS 2.0 and NATS 2.0 and the lowering of employer thresholds for engaging apprentices demonstrate a willingness to innovate and expand participation. Similarly, embedding apprenticeships within higher education through AEDP aligns with the vision of the National Education Policy 2020 and promotes employability. The collaborative efforts of multiple stakeholders, including Central ministries, State Governments, training providers, and monitoring agencies, have strengthened the implementation of apprenticeship initiatives. The schemes also address inclusivity by targeting MSMEs and underserved regions, ensuring broader access to skill development opportunities. By leveraging digital platforms and transparent processes, significant strides have been made in improving efficiency and trust in stipend disbursement and programme management. The continued evolution of mechanisms for apprenticeship training underscores India's resolve to build a future-ready workforce. Collectively, these measures highlight a pragmatic and adaptive approach to strengthening skill training, rooted in collaboration and guided by a vision of inclusive growth.

3

Trends and Insights under NAPS and NATS in India

3.1 Introduction

India's rapidly evolving economic and technological context has positioned apprenticeship as an instrumental mechanism in bridging the persistent gap between formal education and labour market requirements. Apprenticeship schemes such as NAPS and NATS serve as critical instruments for enhancing the employability of young individuals by embedding practical, hands-on industry experience within their educational and skilling trajectories. By facilitating structured learning in the workplace, these programmes not only address the skill mismatches that constrain productivity, but also contribute to building a workforce that is responsive to the dynamic demands of India's growth sectors.

This chapter examines the trends and performance of NAPS and NATS at the all-India level using publicly available official data. The analysis offers a granular assessment of how establishments registered under NAPS and apprentices engaged under both NAPS and NATS are distributed across different dimensions, including enterprise size (micro, small, medium, and large), sectoral categories (public and private enterprises), trade preferences, gender participation, and engagement outcomes, wherever applicable.

By combining visualization of quantitative data and analysis with interpretive insights, the chapter aims to generate a detailed portrait of the apprenticeship landscape, offering both a snapshot of comparative State performance and an exploration of key trends that have emerged over the past several years. This analysis sets the stage for a more nuanced examination of the opportunities and challenges that define its future trajectory. The chapter contributes to advancing data-driven policy discussions and facilitate the design of more targeted interventions to revitalize India's apprenticeship framework.

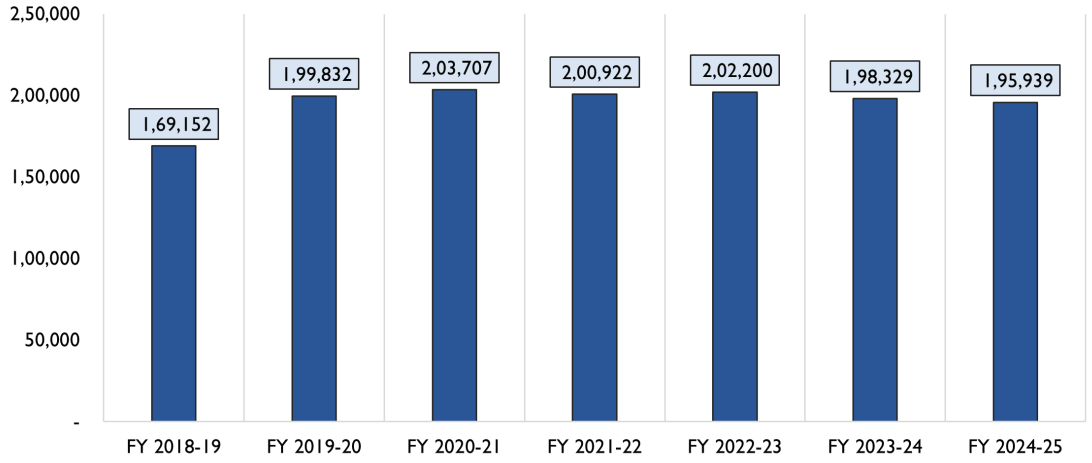
3.2 All India insights into Establishments and Apprentices under NAPS

Under NAPS, an establishment refers to any entity engaged in a business or trade with the requisite infrastructure to provide OJT. As per statutory guidelines, all establishments with a workforce of 30 or more, including both regular and contractual employees, are mandated to engage apprentices ranging from 2.5% to 15% of their total manpower annually (Apprentices Act, 1961). For establishments employing between 4 to 29 individuals, participation in apprenticeship programmes remains optional (FAQs – Apprenticeship under the Apprentices Act, 1961). Analysing the registration and active status of establishments under NAPS has relevance for evaluating compliance, industry engagement, and the overall capacity of the apprenticeship ecosystem to generate meaningful training opportunities. These indicators offer valuable insights into both the scale and sustainability of apprenticeship implementation across sectors.

3.2.1 Registered Establishments (RE) under NAPS

Under NAPS, establishments serve as the primary implementing units responsible for engaging apprentices across sectors. These include enterprises from manufacturing, services, and other eligible industries registered under the scheme to offer structured, on-the-job training. Analysing the registration and active status of these establishments is crucial for assessing the outreach, effectiveness, and operational integrity of the apprenticeship ecosystem. The number of REs indicates the scheme's penetration and industry engagement, while the proportion of AEs reflects sustained participation and capacity to deliver training. Together, these metrics provide key insights into the functioning and responsiveness of the NAPS framework at the enterprise level.

Fig. 3.1 Number of Registered Establishments under NAPS in India (Cumulative)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

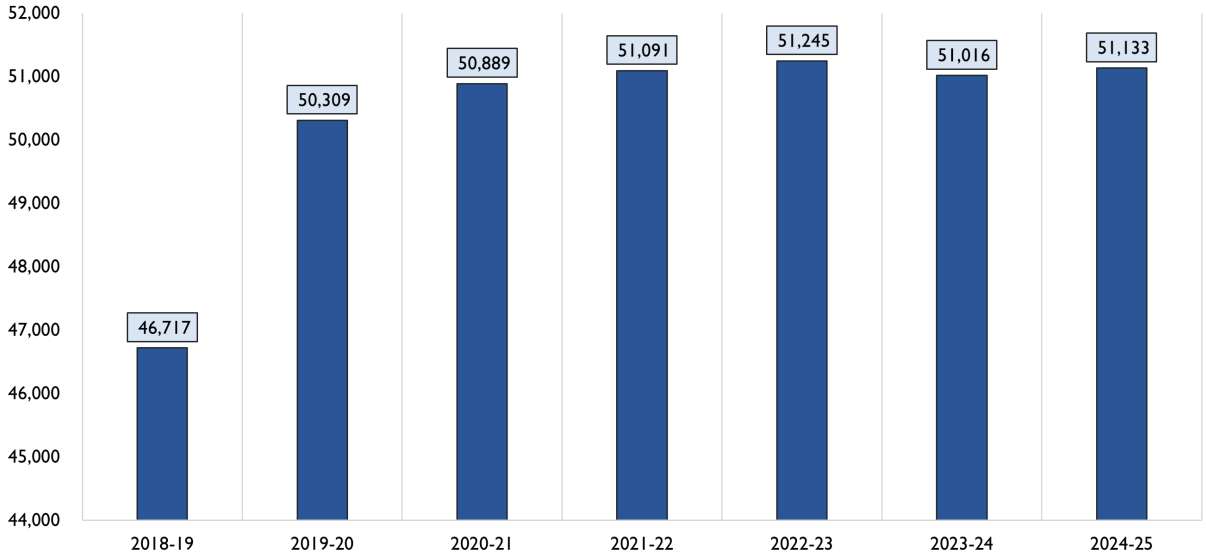
Fig. 3.1 indicates a pattern of moderate growth followed by stagnation and subsequent decline. The number of REs increased significantly from 1,69,152 in FY 2018–19 to 1,99,832 in FY 2019–20, marking a substantial year-on-year rise of 18.1%. In FY 2020–21, the number of establishments rose only marginally to 2,03,707, reflecting near saturation after the initial expansion.

From FY 2021–22 onwards, the trend reveals a gradual contraction. The total registered establishments declined slightly to 2,00,922 in FY 2021–22 and remained almost stagnant at 2,02,200 in FY 2022–23. The number of registered establishments reduced to 1,98,329 in FY 2023–24 and further to 1,95,939 in FY 2024–25. This represents a cumulative fall of 3.8 % from the peak of FY 2020–21.

3.2.2 Active Establishments (AE) under NAPS

Under NAPS, an AE refers to a registered employer that is currently engaged in providing apprenticeship training to at least one apprentice within a defined period, typically a financial year (MSDE, NAPS Guidelines). Mere registration on the NAPS portal does not qualify an establishment as active; it must have entered into and maintained valid apprenticeship contracts

Fig. 3.2 Number of Active Establishments under NAPS in India (Cumulative)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

with apprentices, and the training must be ongoing. These establishments are considered functionally contributing to the apprenticeship ecosystem, as they are not only compliant with the registration formalities but are also operational in offering workplace-based training.

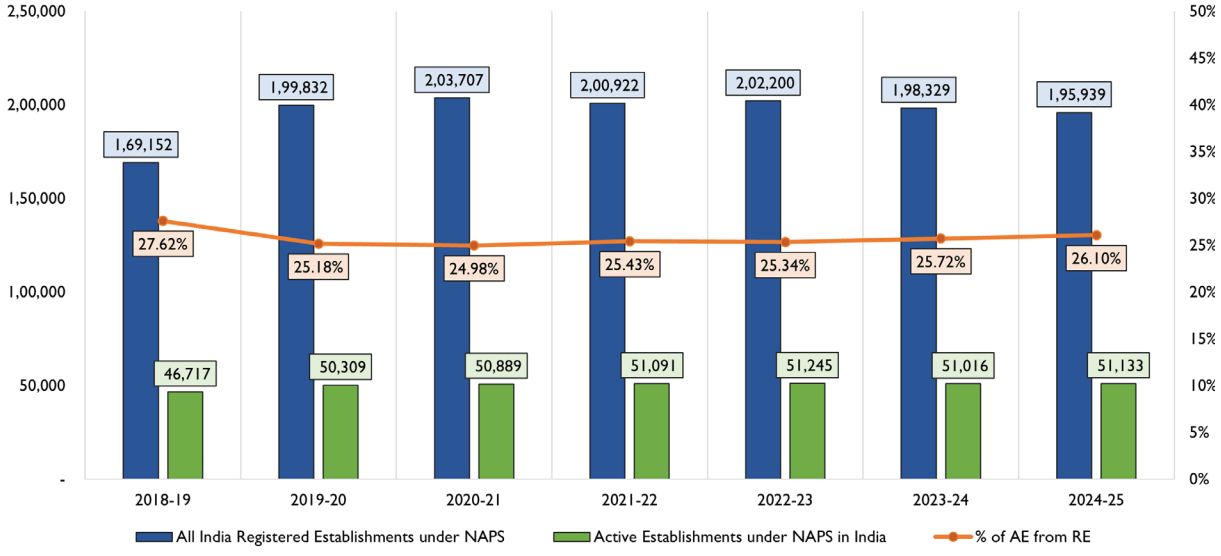
Being an AE also makes the employer eligible to receive government reimbursement for a portion of the stipend paid to apprentices, provided other scheme conditions are met. The proportion of AE relative to total RE is a critical indicator (AE-RE percentage) of the scheme's effectiveness, as it highlights the actual industry participation in skilling efforts under NAPS.

The Fig. 3.2 demonstrates a trend of gradual and sustained growth, albeit at a modest pace. In FY 2018–19, the number of AEs stood at 46,717, which increased to 50,309 in FY 2019–20, registering an annual rise of 7.7%. This early increase reflected the strengthening of the scheme's implementation and improved establishment participation.

From FY 2020–21 onwards the number of AEs remaining broadly constant around the 51,000. Specifically, the figure increased slightly to 50,889 in FY 2020–21, 51,091 in FY 2021–22, and 51,245 in FY 2022–23, before showing a marginal decline to 51,016 in FY 2023–24. The number recovered modestly to 51,133 in FY 2024–25. This phase indicates that the scheme successfully retained establishment participation at a steady level, though without substantial further expansion. Overall, the data suggests that NAPS has been able to maintain a stable base of over 50,000 active establishments in recent years.

The comparison (Fig. 3.3) of registered and active establishments under NAPS from FY 2018–19 to FY 2024–25 reveals a consistent gap between enrolment and actual participation. While the number of REs ranged between 1.69 lakh and 2.03 lakh during the period, the AEs remained much lower, ranging from 46,717 to 51,245. Consequently, the share of AEs out of REs fluctuated between 24.98% and 27.62%.

Fig. 3.3 RE and AEs under NAPS in India (Cumulative)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

In FY 2018–19, 27.62% of REs were active, representing the highest conversion ratio in the given period. However, this proportion declined in the following year to 25.18% and further stabilized around 25 % in subsequent years. The lowest ratio was recorded in FY 2020–21 at 24.98 %, coinciding with the year when registered establishments peaked at 2.03 lakh. From FY 2021–22 onwards, the ratio stabilized, with minor improvements, reaching 26.10 % in FY 2024–25.

This analysis highlights two key trends. First, while the absolute number of active establishments remained steady around 50,000 after FY 2019–20, the registered base showed slight contraction after FY 2020–21. Second, the participation rate (Active-to-Registered ratio) has remained low, consistently around one-fourth, suggesting that a large proportion of establishments registered under NAPS do not transition to active engagement.

While the increase in registrations signals growing awareness or compliance with the scheme, the persistently high volume of non-active establishments indicates lower conversion of registration into actual apprenticeship engagement. On average, over 74% of registered establishments remain inactive each year. Addressing this gap is crucial for ensuring that employers registering under the scheme are able to offer apprenticeships.

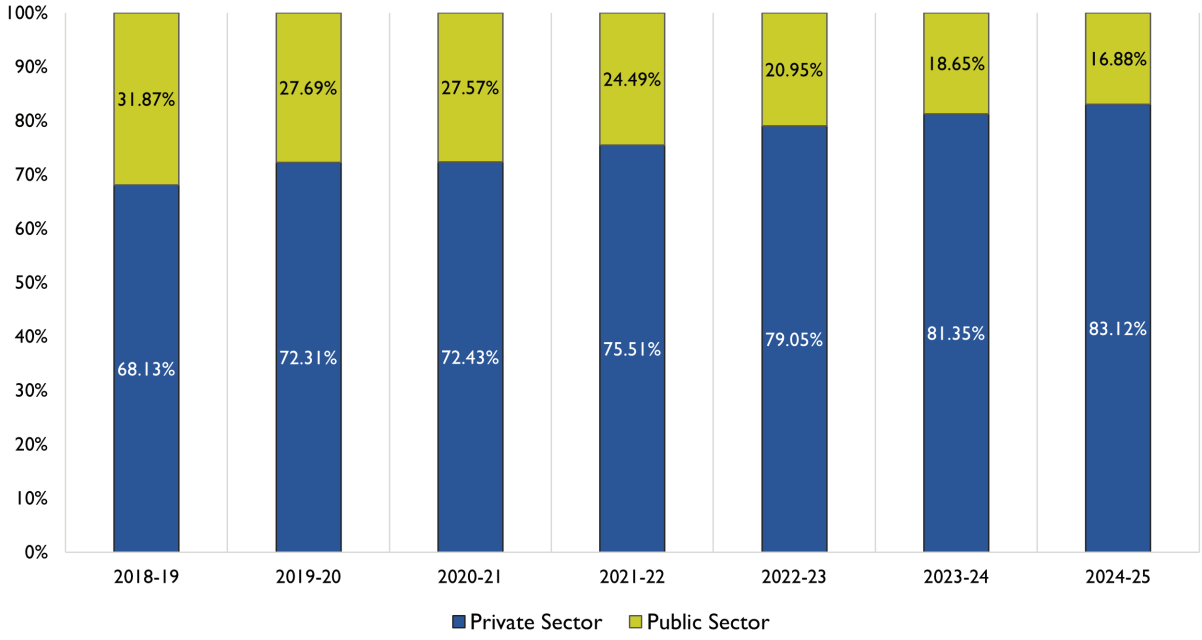
3.2.3 Trends in AEs under NAPS across public and private sector

Analysing trends in establishments under NAPS from both the public and private sectors between FY 2018–19 and FY 2024–25 holds critical significance for understanding the evolving dynamics of India's apprenticeship ecosystem. Public and private sector establishments play distinct yet complementary roles in shaping the landscape of skill development.

A longitudinal view of participation trends, as presented in Fig. 3.4, reveals a clear and consistent shift in the share of AEs under NAPS from the public to the private sector over the period 2018–19 to 2024–25.

Active establishments under NAPS for the private sector have steadily increased from 68.13% in 2018–19 to a notable 83.12% in 2024–25. In contrast, the public sector

Fig. 3.4 Share of active establishments across Public and Private Sector (in percentage)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

(comprising both CPSUs and SPSUs) has seen a marked decline, with its share dropping from 31.87% to just 16.88% in the same period. Within the public sector, both segments, Central and State Governments and Central and State PSUs, show a steady decrease in participation, with PSUs showing the steepest fall from 11.48% to 5.29%. This trend indicates growing reliance on the private sector to drive apprenticeship engagement.

3.3 Trends in apprentices under NAPS

Any person eligible as per the prescribed criteria under the Apprentices Act 1961 and willing to join the apprenticeship programme has to register on the "Apprenticeship portal" (https://www.apprenticeshipindia.gov.in/). Post online registration, the candidate may apply for the apprenticeship training against the notified apprenticeship opportunities posted by an establishment (FAQs – Apprenticeship under the Apprentices Act, 1961).

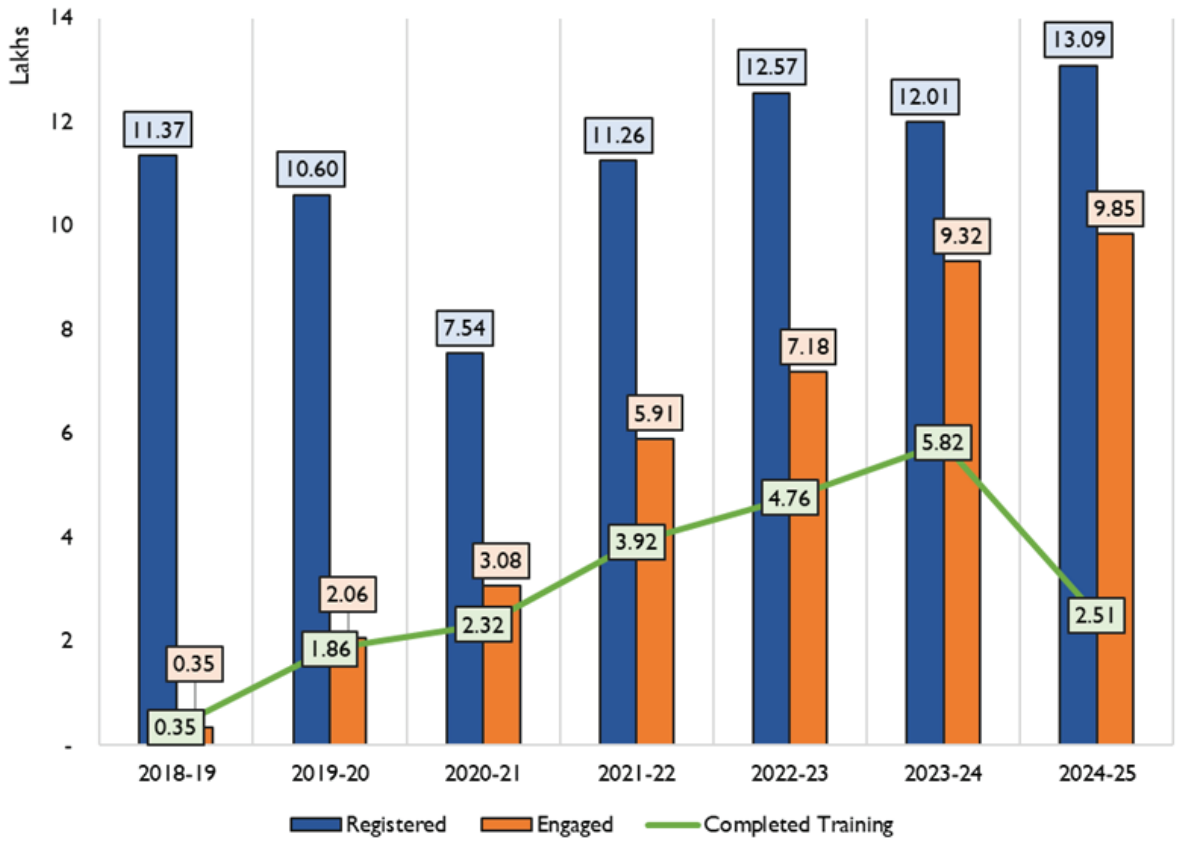
Analysing trends in apprentice registration, engagement, and completion is significant for assessing the effectiveness and outreach of the scheme. Registration data reflects awareness, access, and interest among eligible youth, while engagement figures indicate the actual absorption of apprentices by establishments. Completion rates, on the other hand, provide insight into the quality, continuity, and efficacy of training provided.

Together, these indicators help evaluate the scheme's performance in fostering skill development, inform policy adjustments, and ensure alignment with industry needs and labour market demands.

The data in Fig. 3.5 on apprentices under NAPS from FY 2018–19 to FY 2024–25 reveals distinct patterns in registration, engagement, and training completion.

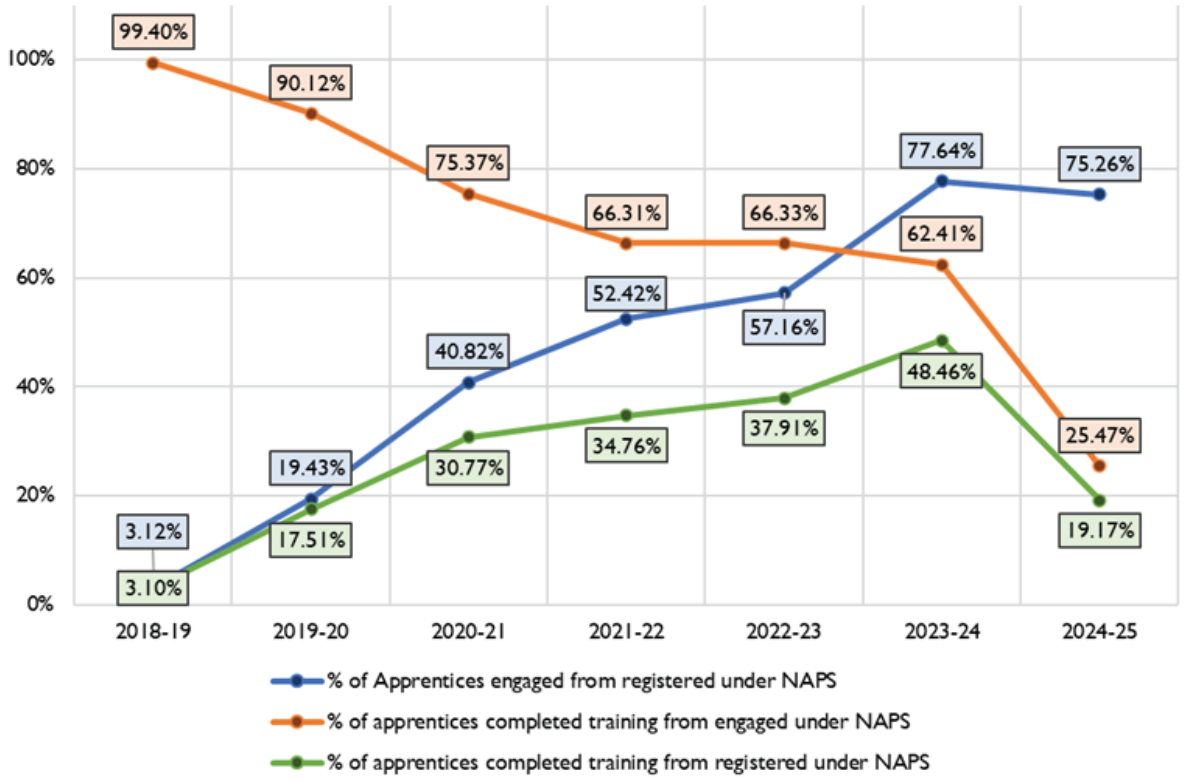
In terms of registration, the numbers fluctuated significantly over the years.

Fig. 3.5 Apprentices Registered, Engaged and Completed Training under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Fig. 3.6 Percentage of Engagement and Completion of Training under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Registrations stood at 11.37 lakh in FY 2018–19, declined sharply to 7.54 lakh in FY 2020–21, and then rebounded to exceed 13.09 lakh in FY 2024–25. This indicates volatility in enrolments, with a clear dip during FY 2020–21 followed by steady recovery. Registrations grew from 11.36 lakh in FY 2018–19 to 13.09 lakh in FY 2024–25, representing a 1.15 times increase over seven years.

In contrast, engagements expanded far more rapidly, rising from 35,484 in FY 2018–19 to 9.85 lakh in FY 2024–25, which is an increase of 27.7 times over seven years.

With regard to training completion, the trend also shows substantial growth, along with some fluctuations. Completions increased from 35,272 in FY 2018–19 to 5.82 lakh in FY 2023–24.

However, in FY 2024–25, the number dropped significantly to 2.51 lakh, despite high engagement levels in the same year. At its peak, completions grew 16.5 times compared to FY 2018-19.

3.3.1 Engagement and completion of training among apprentices under NAPS

The Fig 3.6. showing a comparison of apprentice registration, engagement in training, and completion rates provides valuable insights. Tracking these three interconnected trends is essential for enhancing the overall effectiveness of the apprenticeship programme.

The share of apprentices engaged from those registered shows a marked improvement over the years, rising from a marginal 3.12% in FY 2018–19 to a peak of 77.64% in FY 2023–24. This upward trend indicates a progressive strengthening of mechanisms to convert registrations into active training opportunities but the average shows only 46.55% of apprentices that engage in training from those registered each year. Additionally, in FY 2024–25 the engagement rate declined marginally to 75.26%, signalling challenges in uptake.

In contrast, the completion efficiency among engaged apprentices displays a declining

trajectory. From an exceptionally high level of 99.40% in FY 2018–19, completion rates dropped steadily to 66.31% in FY 2021–22 and remained at a similar level in FY 2022–23. The decline accelerated in subsequent years, falling to 62.41% in FY 2023–24 and further plummeting to 25.47% in FY 2024–25. The data collection for FY 2024-25 for completion of training may still be pending for collection, however, only an average of 70% apprentices complete training from total engaged each year.

When analysed in relation to total registrations, the proportion of apprentices completing training initially improved, rising from 3.10% in FY 2018–19 to nearly half of all registrants (48.46%) in FY 2023–24. However, in FY 2024–25, this measure dropped sharply to 19.17%, reflecting the impact of the steep decline in completion efficiency. On average, only 27.38% of apprentices complete training from those registered each year.

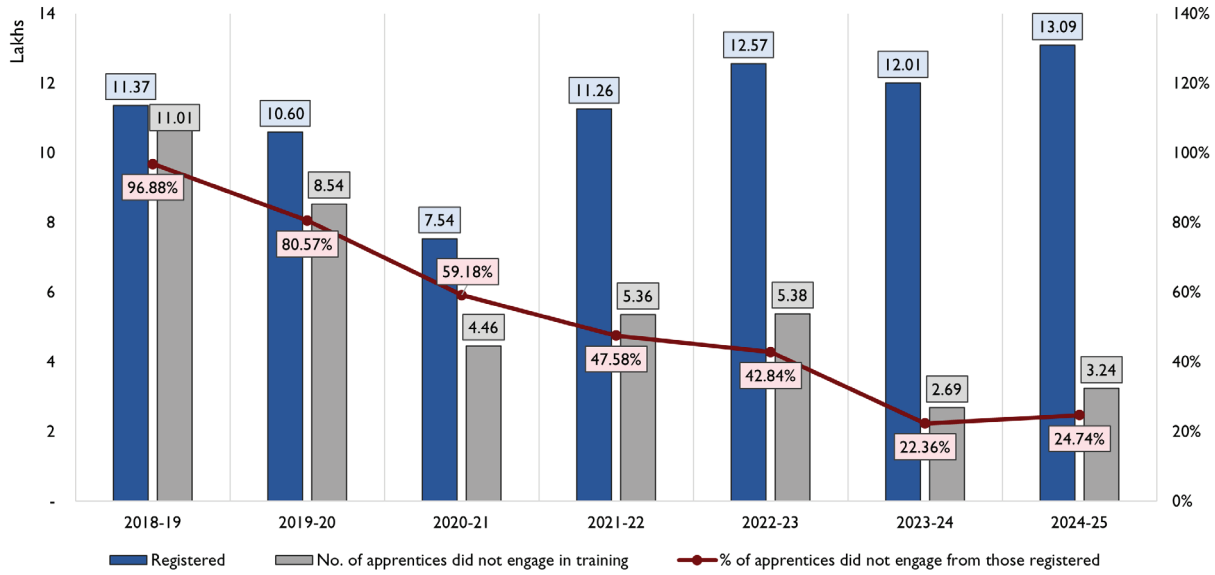
Taken together, these trends point to a dual challenge: while significant progress has been made in mobilising and engaging apprentices, the system is experiencing a sharp reduction in successful completions. This pattern underscores the need for strengthening retention and addressing barriers that limit apprentices from completing their programmes. The data thus highlights both the achievements of NAPS in expanding participation and the urgent requirement for corrective measures to sustain training outcomes.

3.3.2 Non-engagement among apprentices under NAPS

While registration reflects initial interest and outreach success, the gap between registration and actual engagement highlights critical challenges that may hinder the scheme's intended impact on skilling and employability.

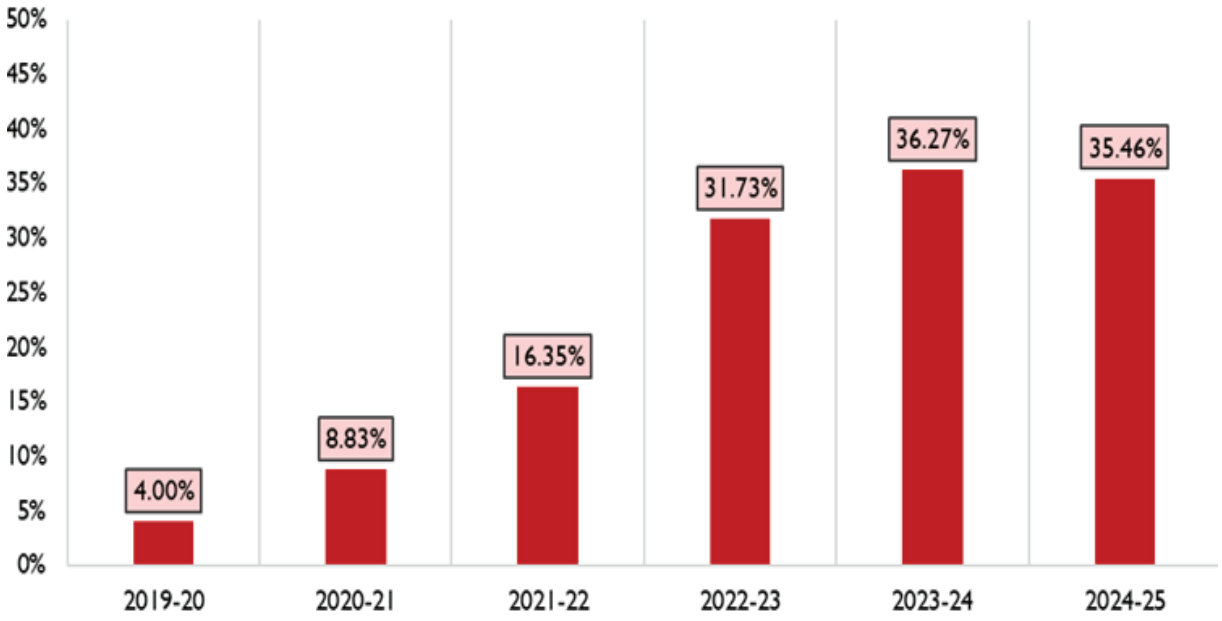
Figure 3.7 reveals a consistent improvement in engagement efficiency over the years. In FY 2018–19, nearly all registered apprentices (about 97%) failed to engage in training, suggesting a major disconnect between registration and actual participation. However, there has been a steady reduction in this gap, with the non-engagement rate declining year after year. By FY 2021–22, the proportion had fallen to FY 2023–24 to nearly half and by FY 2024-25, it reduced further to around one-fourth of registrants. Thus, indicating significant progress in converting registrations into training participation.

Fig. 3.7 Apprentices Registered and did not engage in training under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Fig. 3.8 Percentage of dropouts from Engaged Apprentices under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

3.3.3 Dropouts under NAPS

The data in Fig. 3.7 also reflects a marginal drop in registrations in recent years, warranting focused efforts to sustain youth interest and institutional outreach. Continuous monitoring of drop-out rates between registration, engagement, and completion are crucial for ensuring quality outcomes.

The percentage of dropouts (Fig. 3.8) rose markedly from 4% in 2019-20, 8.83% in 2020-21 to 16.35% in 2021-22, further escalating to 31.73% in 2022-23, and reaching its peak at 36.27% in 2023-24. Although there is a marginal decline in 2024-25 to 35.46%, the dropout rate remains considerably high with more than one-third of all engaged apprentices not completing their training despite initial engagement.

3.3.4 Trends among establishments and apprentices engaged by enterprise size under NAPS

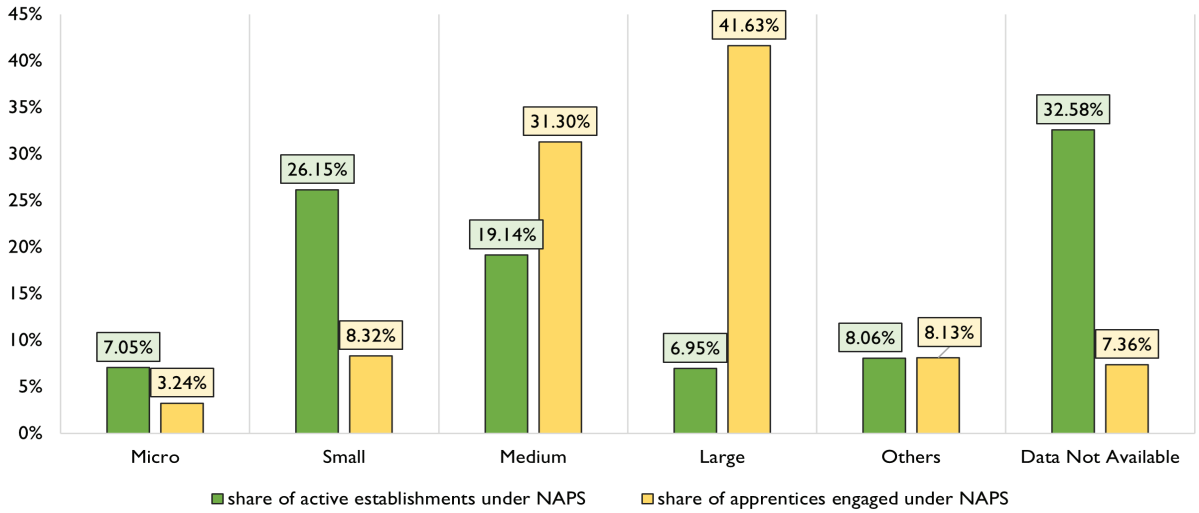
Fig. 3.9 presents a consolidated view of the share of AEs under NAPS and the corresponding share of apprentices engaged by enterprise size. This juxtaposition highlights critical mismatches between enterprise engagement and apprenticeship delivery, offering valuable insights into the structural dynamics of India's skilling ecosystem.

The data (Fig. 3.9) reveals a stark asymmetry between the size of establishments and their contribution to apprenticeship training. Despite comprising only 26.09% of active establishments (AEs), medium and large enterprises account for a disproportionate 72.93% of total apprentice engagement under NAPS. This stark imbalance highlights the decisive influence of enterprise scale on apprenticeship absorption capacity.

In contrast, micro and small enterprises collectively constitute over one-third of active establishments (33.20%) but engage only 11.56% of apprentices. Medium enterprises, representing 19.14% of establishments, engage 31.30% of apprentices, indicating relatively balanced participation.

Moreover, the significant proportion (32.58%) of establishments for which size data is unavailable (as per NAPS dashboard) indicates improvement in data collection and quality of enterprise classification requires attention. The trends in apprentice

Fig. 3.9 Active Establishments and Apprentices engaged by Enterprise Size under NAPS
(Cumulative from FY 2018-19 to FY 2024-25)



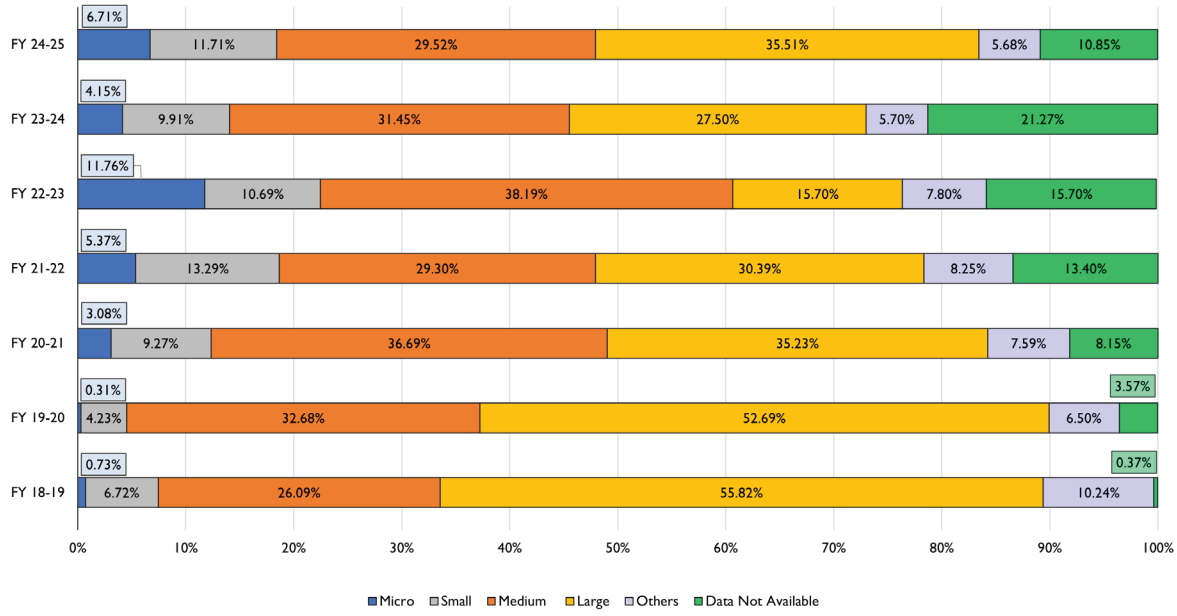
(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

engagement by enterprise size under NAPS offers insights into the dynamics of industry participation and the distributional pattern of skilling efforts across sectors. The data reveals a significant shift in participation patterns over time, particularly between large enterprises and others such as small, medium, and micro units.

Fig. 3.10 highlights that in the initial phase (FY 2018–19), large enterprises accounted for the majority of apprentice engagements (55.82%). However, their share declined sharply in subsequent years, dropping to 15.70% in 2022–23 before partially recovering to 35.51% in 2024–25. In contrast, the category labelled "Others" (as mentioned on NAPS portal) consistently increased its share, peaking at 38.19% in 2022–23. This suggests a broadening of participation beyond traditional large players.

Micro enterprises remain marginal contributors, although starting from a smaller base, rising from 0.73% in 2018–19 to 11.76% in 2022–23 as well as Medium enterprises showing fluctuatuing growth in their share as well. Small enterprises have slowly increased

Fig. 3.10 Share of apprentices engaged by Enterprise Size (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Table 3.1 Trade preferences of apprentices under NAPS according to educational qualifications (Cumulative from FY 2018-19 to FY 2024-25)		
Education Qualification	**Designated Trade**	**Optional Trade**
Below Metric	6535	164101
10th	71960	576394
11th	217	9172
12th	33095	797079
Diploma	4745	246210
Graduate	45273	481759
Post Graduate	5756	47676
ITI	1048977	216484
Others	6524	22841
Data Not Available	1729	9334
Total	**1224811**	**2571050**

(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

their engagement of apprentices from 6.72% in FY 2018-19 to 11.71% in FY 2024-25.

The "Data Not Available" category's rising share, especially 21.27% in 2023–24, flags a need for improved data availability and classification to enhance policy targeting. Trend analysis by enterprise size is essential to assess the inclusivity, compliance, and scalability of apprenticeship implementation under NAPS. It helps identify gaps, strengthen sector-specific strategies, and align interventions to ensure equitable skill development across India's diverse industrial landscape.

3.3.5 Trends among apprentices about trade preferences under NAPS in India

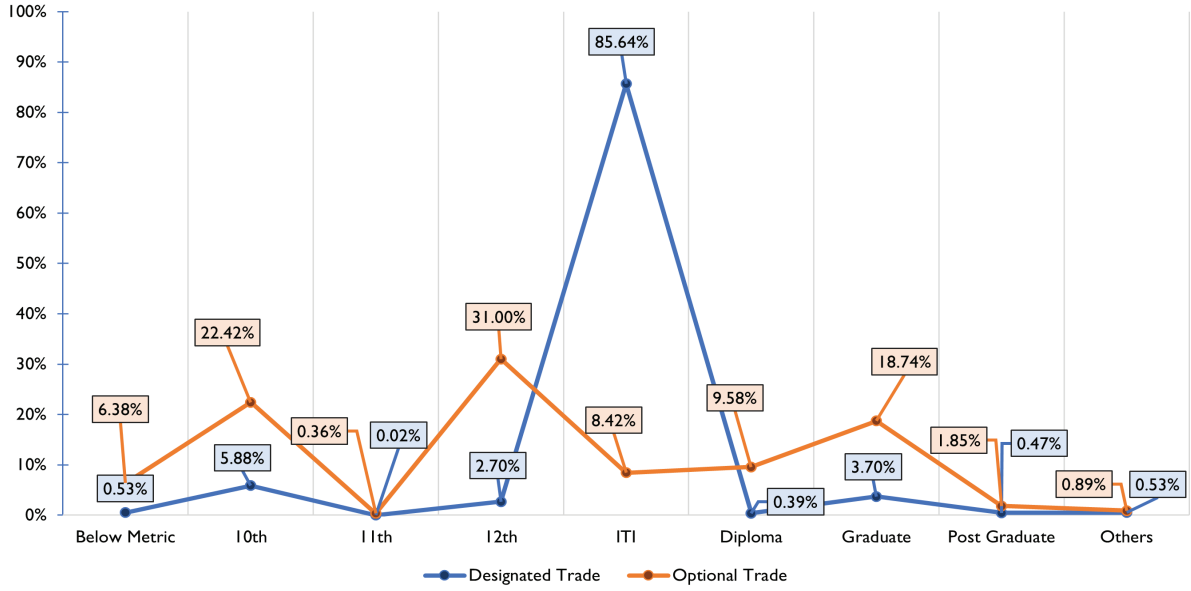
The data (Table 3.1) on educational qualifications of apprentices across designated and optional trades reveals significant insights for NAPS. The overwhelming majority of apprentices in designated trades are from Industrial Training Institutes (ITIs), comprising over 10 Lakh apprentices, accounting for approximately 90% of all apprentices in this category. In contrast, optional trades witness a more diverse educational representation. The data in (Table 3.1) on the educational qualifications of apprentices under designated and optional trades reveals a stark contrast in participation patterns. Optional trades account for over twice the enrolment compared to designated trades (25.7 lakh vs. 12.2 lakh)

The largest group in optional trades comes from the 12th pass category (7,97,079 apprentices), followed closely by 10th pass (5,76,394) and graduate-level participants (4,81,759). Notably, individuals with below metric, diploma, and postgraduate qualifications also show substantial engagement in optional trades, which suggests that these trades are accessed by a wider variety of educational backgrounds.

Under the designated trade, ITI graduates overwhelmingly dominate (Fig. 3.11) with a share of 85.64%, reflecting the scheme's historical alignment with vocational training. However, participation from other education levels remains marginal, especially for those with higher education such as graduates (3.70%) and postgraduates (0.47%), and almost negligible from 11th pass candidates (0.02%).

Conversely, optional trades showcase a more diverse educational representation, with 12th pass candidates forming the largest group at 31%, followed by 10th pass (22.42%) and graduates (18.74%). This shift indicates that optional trades offer greater flexibility and appeal to a wider talent pool, including general education students.

Fig. 3.11 Trade preference by apprentices under NAPS (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

The contrast highlights a potential need to restructure or expand designated trades to accommodate broader educational backgrounds and tap into underutilized human resources, particularly from general academic streams. The trends in trade preferences under NAPS reveal a strong continuity between institutional training and apprenticeship choices, with 96.9% of engineering apprentices and 85.3% of non-engineering apprentices pursuing trades aligned with their original ITI specialisations[2].

This alignment underscores the role of apprenticeships as extensions of formal ITI training rather than avenues for diversification or trade-switching, which, while reinforcing trade-specific skills, limits flexibility for graduates seeking broader exposure. Placement dynamics further demonstrate the centrality of institutional mediation, as ITI faculty or principals account for nearly two-thirds of apprenticeship placements, with digital portals and personal networks playing secondary roles[3].

3.3.6 Gender-wise trends among apprentices under NAPS in India

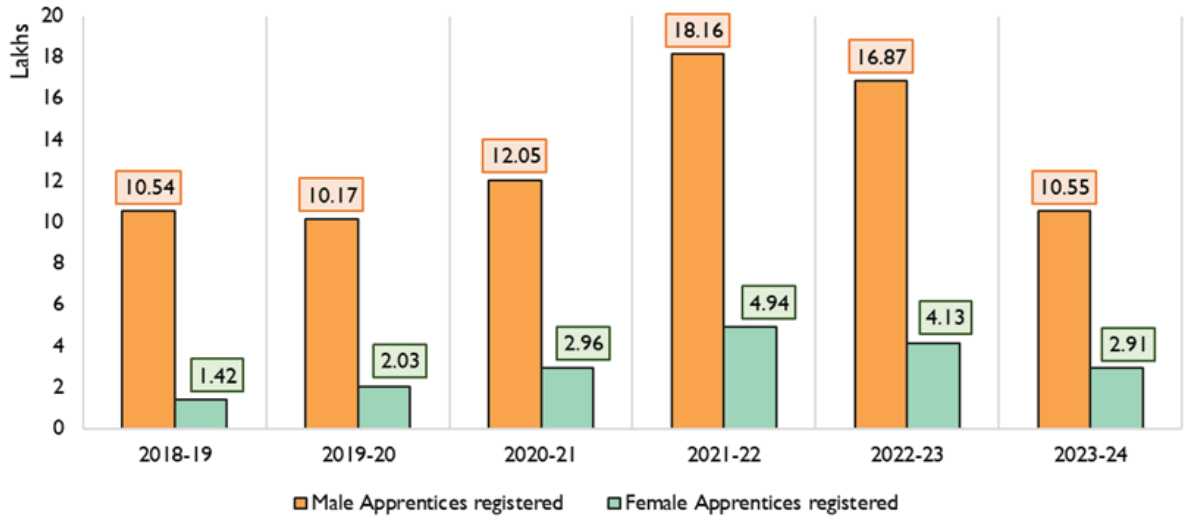
NAPS plays a pivotal role in strengthening India's skill development ecosystem by promoting apprenticeships across sectors. As the nation moves towards achieving inclusive and sustainable economic growth, it is critical to ensure equitable access to apprenticeship opportunities for all demographic groups, particularly women. Conducting a gender-wise analysis of apprentices engaged under NAPS is instrumental in assessing the level of women's participation, identifying prevailing gender disparities, and evaluating the impact of policy interventions designed to foster inclusivity (MSDE, 2022). The gender-wise distribution of apprenticeships under NAPS reflects a clear imbalance, with male participation (10.2%) exceeding female participation (7.4%). Women constitute just 18.2% of the overall apprentice pool, pointing to strong male dominance in access to opportunities[4].

While this indicates that women are not

[2] Tracer Study to Assess Employment Outcomes of ITI Pass Outs from Skills Strengthening for Industrial Value Enhancement (STRIVE) Project, 2024"

[3] The "Other" category is as given on NAPS dashboard

Fig. 3.12 Apprentices registered under NAPS (All India - Gender-wise)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

absent from the apprenticeship system, their participation remains limited in both scale and scope. The smaller female base suggests that when women do engage in apprenticeships, they are often concentrated within a restricted set of trades or institutional contexts, which constrains their overall visibility and absolute numbers.

3.3.7 Comparative analysis of registration of male and female apprentices under NAPS

Male apprentices have consistently constituted the majority of total registrations under NAPS across all financial years (Fig. 3.12). Registrations for male apprentices stood at approximately 10.54 lakh in FY 2018–19 and peaked at 18.16 lakh in FY 2021–22.

This growth trajectory reflects the greater involvement of male candidates to formal skilling pathways. However, a notable decline followed in the subsequent years, with registrations dropping to 16.87 lakh in FY 2022–23 and further to 10.55 lakh in FY 2023–24.

Female apprentice registrations (Fig. 3.12) increased markedly from 1.42 lakh in FY 2018–19 to 4.94 lakh in FY 2021–22. Despite this progress, the trend reversed post-2021–22, with registrations falling to 4.13 lakh in FY 2022–23 and further to 2.91 lakh in FY 2023–24.

Throughout the six-year period, a substantial gender gap has persisted. In FY 2023–24, the difference between male and female apprentice registrations was approximately 7.63 lakh, reflecting continued underrepresentation of women in the apprenticeship landscape.

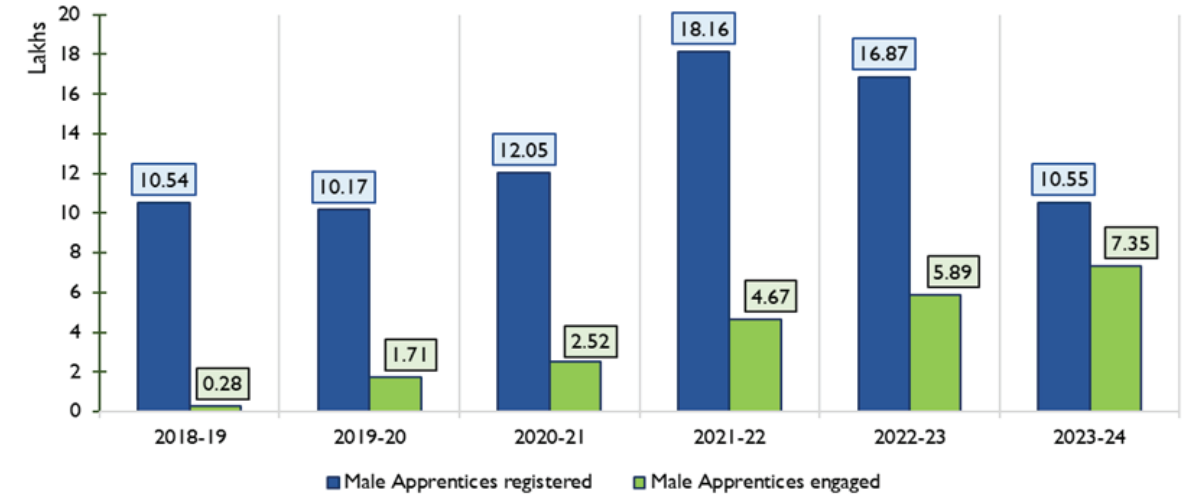
A comparative analysis of gender-wise apprenticeship engagement data reveals distinct trends in the number of apprentices registered and engaged under NAPS from FY 2018–19 to FY 2023–24. The figures shed light on the growing involvement of both male and female apprentices and highlights areas requiring targeted interventions for achieving gender equality in skill development.

3.3.8 Comparative analysis of engagement under NAPS among male and female apprentices

Male apprentices have consistently accounted for a larger proportion of both registrations and engagements. In FY 2023–24, male apprentices constituted approximately 79% of total engagements. Registrations reached a peak (Fig. 3.13) of approximately 18.16 lakh

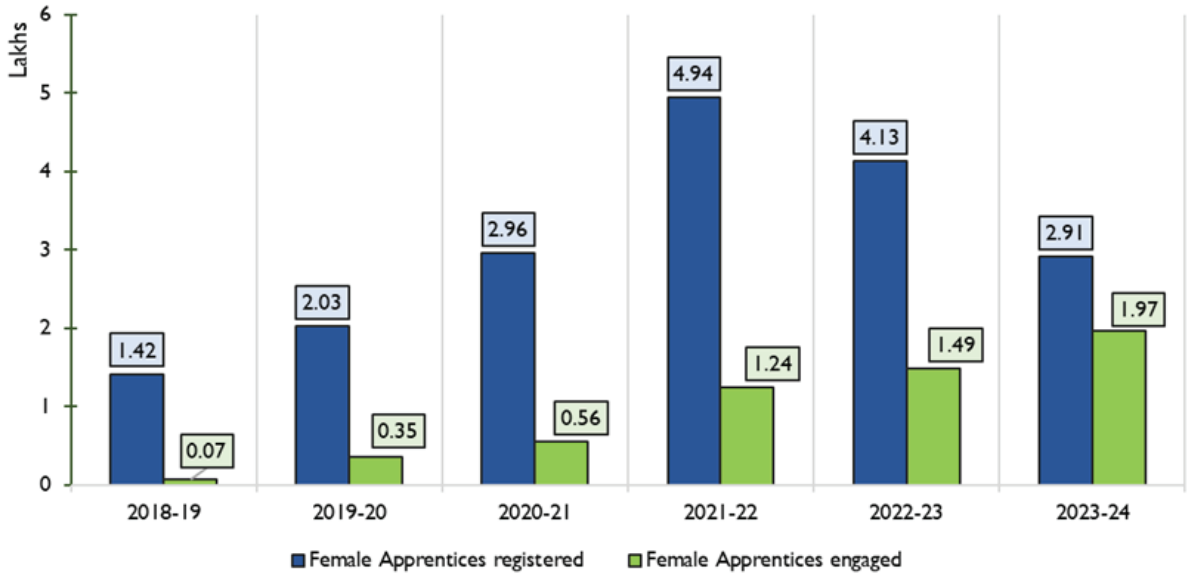
[4] Tracer Study to Assess Employment Outcomes of ITI Pass Outs from Skills Strengthening for Industrial Value Enhancement (STRIVE) Project, 2024

Fig. 3.13 Number of male apprentices registered and engaged under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Fig. 3.14 Number of female apprentices registered and engaged under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

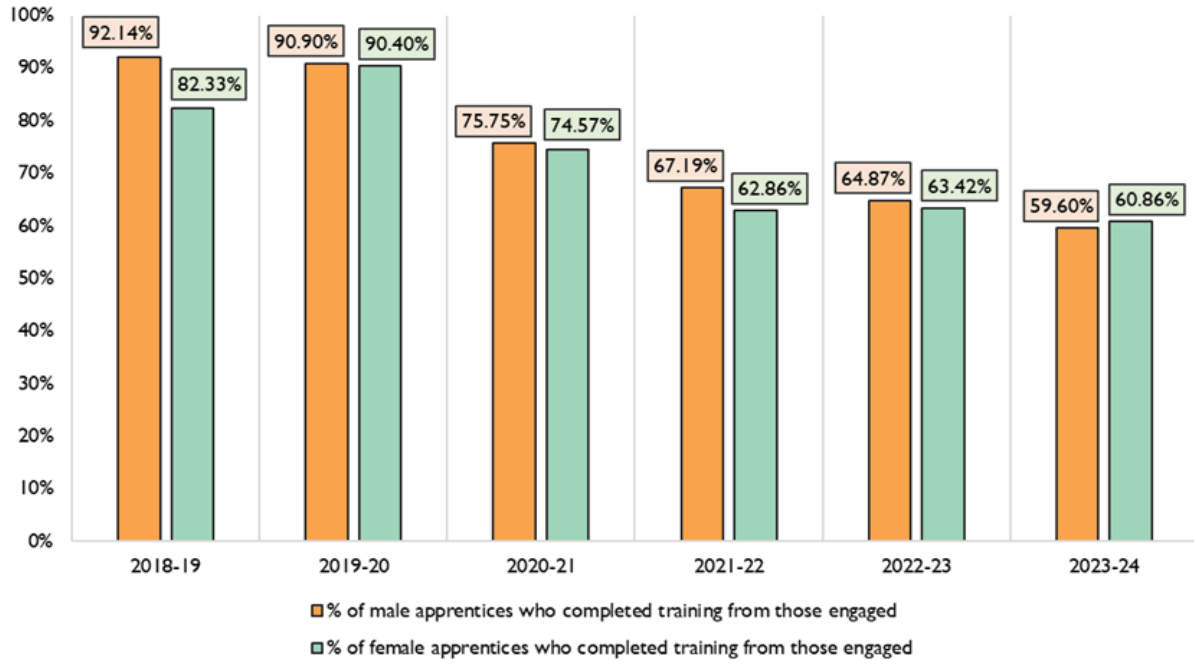
in FY 2021–22, before declining to 10.55 lakh in FY 2023–24.

However, the number of male apprentices engaged exhibited sustained growth, increasing more than 26-fold from 28,281 in FY 2018–19 to 7.35 lakh in FY 2023–24. This trend indicates an improving absorption of male apprentices into the workforce. Female participation, though initially limited, has shown encouraging progress (Fig. 3.14). Registrations rose steadily from 1.42 lakh in FY 2018–19 to a peak of 4.94 lakh in FY 2021–22. Engagements similarly increased from 7,232 in FY 2018–19 to 1.97 lakh in FY 2023–24, reflecting an almost 27-fold improvement.

3.3.9 Comparative trends in completion rates among male and female apprentices under NAPS

The completion rates of apprentices from FY 2018–19 to FY 2023–24, disaggregated by gender, exhibit a consistent declining trend for both male and female apprentices (fig. 3.15). In FY 2018–19, 92.14% of male apprentices and 82.33% of female apprentices who were engaged

Fig. 3.15 Percentage of apprentices who completed training from those engaged under NAPS (All India - Gender-wise)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

under NAPS successfully completed their training. These figures reflected a relatively high level of retention and completion, particularly among males. The following year, FY 2019–20, witnessed a significant convergence in gender completion rates, with 90.90% of males and 90.40% of females completing their training. This near parity marked a brief phase of gender-balanced outcomes under the scheme.

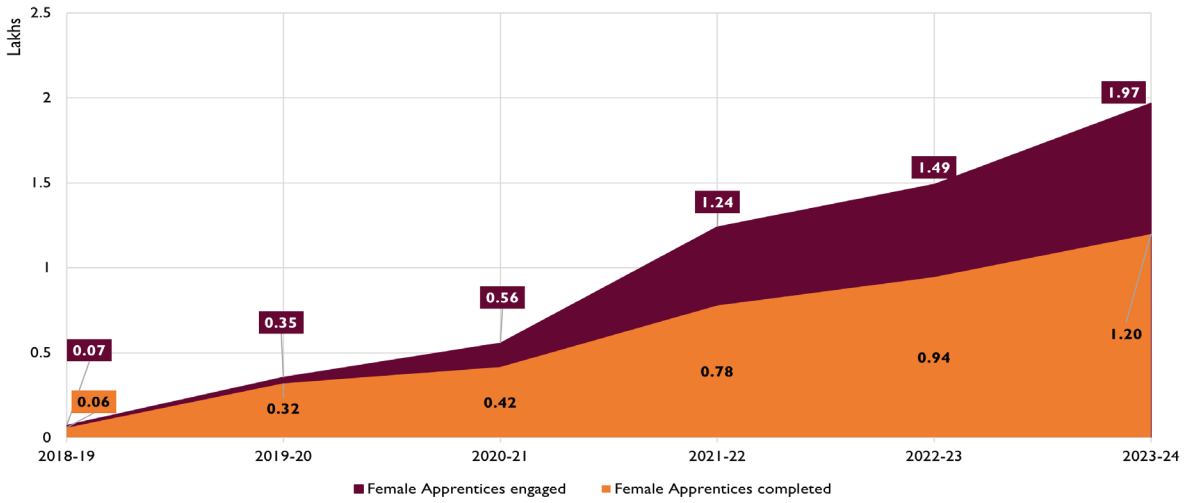
However, beginning in FY 2020–21, both male and female completion rates began to decline sharply. For male apprentices, the completion rate fell to 75.75%, and for females, it decreased to 74.57%. This downward trend persisted in subsequent years, with male completion rates declining to 67.19% in FY 2021–22, 64.87% in FY 2022–23, and ultimately 59.60% in FY 2023–24. Female completion rates followed a similar trajectory, falling to 62.86% in FY 2021–22, 63.42% in FY 2022–23, and 60.86% in FY 2023–24. While both genders experienced consistent declines, the male completion rate exhibited a steeper fall, dropping by more than 32% over six years, compared to a 21.5% decline among female apprentices.

Notably, FY 2023–24 marks a reversal in the gender trend, wherein the completion rate for female apprentices (60.86%) marginally exceeded that of their male counterparts (59.60%). This shift may indicate either improvements in female apprenticeship retention or a sharper deterioration in male completion performance. The convergence of male and female completion rates in recent years points to a narrowing gender gap, although it is driven more by the decline in male participation than by substantial gains in female outcomes. The overall decline in completion rates across genders warrants critical policy attention, particularly in light of the scheme's objective to create a skilled workforce through structured on-the-job training. These trends suggest a need to examine the factors contributing to attrition and to formulate targeted interventions that address the evolving challenges in apprenticeship implementation.

3.3.10 Trends among engagement and completion of training of female apprentices under NAPS

In FY 2018–19, a total of 7,232 female apprentices were engaged, of whom 5,954 completed the training, resulting in a completion rate of 82.33% (Fig. 3.16). This

Fig. 3.16 Number of female apprentices engaged and completed training under NAPS



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

figure improved significantly in FY 2019–20, when 35,464 female apprentices were engaged and 32,058 completed the training, yielding a completion rate of 90.40%. This year marked the highest female completion efficiency during the observed period. From FY 2020–21 onwards, however, the trend shifted. Although the absolute number of female apprentices engaged continued to rise, from 55,783 in FY 2020–21 to 196,913 in FY 2023–24, the corresponding completion rates declined steadily. In FY 2020–21, 41,597 female apprentices completed training, reflecting a reduced completion rate of 74.57%. This decline continued into FY 2021–22, where the number of engaged female apprentices more than doubled to 124,002, yet only 77,953 completed their training, lowering the completion rate to 62.86%.

A similar pattern persisted in the subsequent years, with completion rates of 63.42% in FY 2022–23 and 60.86% in FY 2023–24, despite record-high engagement levels of 1,48,981 and 1,96,913 female apprentices, respectively. This data points to a significant divergence between scale and outcomes. While the expansion of female participation in apprenticeships reflects progress in outreach and enrolment, the declining percentage of completions suggests challenges related to retention, quality assurance, and support mechanisms during training. Therefore, policy efforts must focus not only on enhancing female participation but also on strengthening the quality and continuity of training to ensure that engagement leads to meaningful skill acquisition and employability.

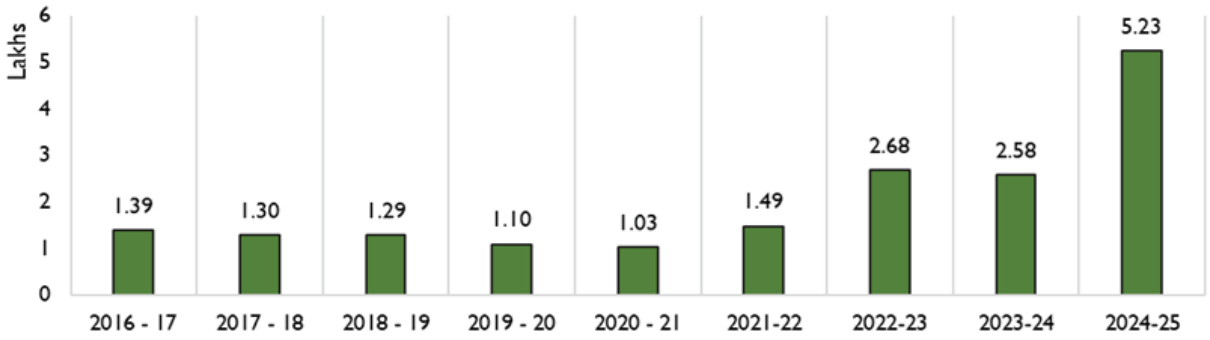
3.4 Trends among apprentices engaged under NATS

NATS implemented by MoE serves as a crucial mechanism for skilling India's youth and linking formal education with workplace training. The all-India data (fig. 3.17) on apprentices engaged under NATS from FY 2016–17 to FY 2024–25 indicates considerable fluctuation over the nine-year period, with an overall upward trajectory in recent years.

Engagement peaked initially at 38,612 apprentices in 2016–17, but declined over the next three years, reaching 1,02,943 in 2020–21, reflecting a contraction in engagement levels. From FY 2021–22 onwards, there is a marked recovery and expansion, with engagement rising sharply to 1,48,512, followed by 2,68,234 in 2022–23, 2,57,705 in 2023–24, and reaching a record high of 5,23,289 in 2024–25.

Cumulatively, 18,08,031 apprentices were engaged under NATS over the nine-year period, demonstrating the scheme's growing scale and its increasing capacity to absorb apprentices nationally. The data highlights a

Fig. 3.17 Number of Apprentices engaged under NATS (all India)



(Source: NATS Dashboard, as on 25 April 2025)

period of initial stagnation followed by rapid acceleration in engagement, underscoring both the expansion of programme outreach and the enhanced participation of industry and institutions in recent years. This long-term trend suggests that, despite early fluctuations, NATS has gained significant momentum and is establishing a stronger presence in India's apprenticeship ecosystem.

3.4.1 Women Beneficiaries under NATS

Gender-wise distribution reveals very low participation of women in NATS (~ 20%) (NILERD, 2019). However, the limited data available on women beneficiaries under the NATS indicates an upward trajectory (Rajya Sabha session - 254 unstarred question no. 1976). In FY 2019–20, the number of women beneficiaries stood at 27.04% of total apprentices under NATS (29,715). The share of women beneficiaries increased marginally to 27.19% (27,993) in FY 2020–21.

Although the absolute number of beneficiaries increased to 39,381 in FY 2021-22, the share of women declined to 26.52% as the total beneficiaries increased by 45,569 (only 11,388 of them being women). An increase in participation occurred in FY 2022-23 with 82,121 beneficiaries and the share crossing the 30% mark for the first time. However, where the share of women beneficiaries declined to 27.64% (71,228) in 2023-24 from 30.62% in FY 2022-23. The share of women under NATS increased to 35.67% (1,86,660 participants) in 2024-25.

Conclusion

The analysis underscores the growing prominence of apprenticeship as a strategic instrument in India's skill development architecture. The trends observed across various indicators, from establishment registration and activation to apprentice engagement and completion, reflect both progress and persistent challenges in realizing the full potential of schemes like NAPS and NATS.

While the consistent growth in engagement and the increasing participation from diverse educational and gender groups point towards enhanced outreach and operational maturity, the high proportion of inactive establishments, dropout rates, and uneven sectoral participation reveal structural constraints that merit targeted policy intervention. Furthermore, the evolving role of the private sector, differentiated patterns of enterprise-size engagement, and widening participation in optional trades collectively signal towards an evolving apprenticeship ecosystem.

The focus in the chapter that follows, shifts from national aggregates to the granular dynamics of State and district-level performance. Such a comparative analysis helps understand regional strengths and weaknesses thereby enabling more geographically nuanced and evidence-informed strategies to strengthen India's apprenticeship landscape.

4

Trends and Insights under NAPS and NATS (States and Special Districts)

4.1 Introduction

This chapter presents a structured analysis of apprenticeship engagement across India under the two major national schemes - NAPS and NATS.

The analysis of NAPS is structured to examine State-wise and special region-specific trends, thereby enabling a granular understanding of regional disparities in apprenticeship implementation. It explores trends in the number of establishments registered and those actively engaged in apprenticeship training from FY 2018–19 to FY 2024–25, identifying spatial imbalances and emerging patterns.

Particular emphasis is placed on the performance of the top 10 and bottom 10 States in FY 2024–25, along with a separate examination of the UTs and NER, which have distinct policy and institutional contexts. The chapter also analyses the contribution each State/UT to growth of REs, AEs and apprentices engaged from FY 2020–21 to FY 2024–25 in all India, offering insights into the pace and consistency of apprenticeship expansion across different geographies.

In the case of NATS, the chapter provides a State-wise assessment of apprentice engagement from FY 2019–20 to FY 2024–25. This includes a comparative review of the top and bottom performing States based on engagement volumes, as well as the performance of UTs and NER States. Although the scope of analysis under NATS is narrower due to data limitations, it nevertheless contributes valuable insights into spatial disparities and institutional participation.

The final section examines the contribution of each State/UT in growth of apprentices engaged under NATS over the six-year period, highlighting dynamic shifts in participation and identifying States that demonstrate sustained progress or stagnation. Collectively, these analyses seek to support the development of more equitable, inclusive, and regionally tailored strategies to enhance the effectiveness and reach of India's apprenticeship ecosystem.

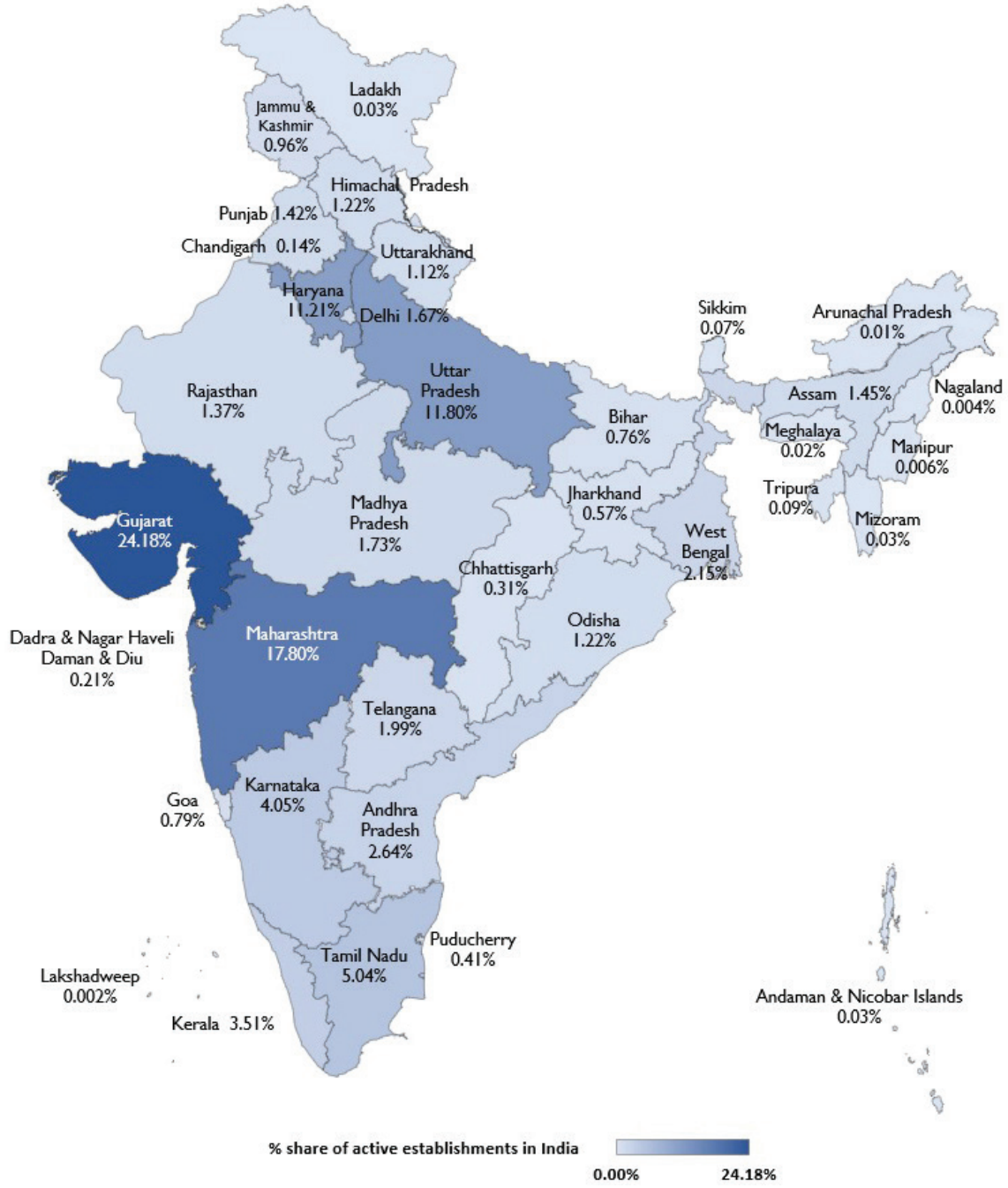
In analysing apprenticeship implementation at State-level, active establishments serve as a more accurate and meaningful indicator. They capture real-time employer engagement, operational readiness, and programme adoption. A high Active to Registered Establishment percentage suggests efficient conversion from intent to action, while a low ratio may signal challenges faced by the establishments. The chapter includes analysis of share of registered and active establishments, share of apprentices that are registered, engaged in training and completed training under NAPS in all States/UTs, and special regions such as NER, aspirational districts, LWE, Border, and Tribal districts from FY 2018-19 to 2024-25. It also covers analysis of the share of apprentices engaged under NATS in all States/UTs from FY 2016-17 to 2024-25.

4.1.1 Active Establishments (AEs) under NAPS in India

An analysis of the distribution of AEs in FY 2024–25 for NAPS reveals significant inter-State disparities. Fig. 4.1 depicts the distribution of AEs under NAPS spread across each State and UT. The bulk of apprenticeship engagement is concentrated in a few industrially advanced states. Gujarat dominates with 24.18%, followed by Maharashtra (17.80%) and Uttar Pradesh (11.80%). Together, these three states account for over half of India's total apprenticeship engagement. The top 5 States cover 70% of the AEs in India whereas, the bottom 10 States (excluding UTs and NE States) cover 10% of the AEs in India.

Haryana (11.21%) also demonstrates strong performance, followed by Tamil Nadu (5.04%) and Karnataka (4.05%). Other contributors include Kerala (3.51%), Andhra Pradesh (2.64%), and West Bengal (2.15%). Mid-range contributors such as Telangana (1.99%), Madhya Pradesh (1.73%), Punjab (1.42%), Rajasthan (1.37%), and Odisha (1.22%) reveal fewer AEs. Smaller States like Goa (0.79%) and Uttarakhand (1.12%) show modest shares, while Bihar (0.76%), Jharkhand (0.57%), and Chhattisgarh (0.31%) remain underrepresented.

Fig. 4.1 Proportion of Active Establishments in each State/UT in FY 2024-25



The Union Territories collectively account for a very small share (3.45%) of All-India AEs in FY 2024–25. Delhi emerges as the leading contributor at 1.67% among UTs, reflecting its relatively large industrial and service sector base. Puducherry contributes 0.41%, while Dadra and Nagar Haveli and Daman and Diu, which host significant industrial clusters, record 0.21%. Chandigarh follows with 0.14%, and the Andaman & Nicobar Islands, Ladakh, and Mizoram each contribute only 0.03%. Lakshadweep reports negligible engagement (0.002%). Overall, the UTs remain peripheral contributors, with Delhi as the only significant player.

The North Eastern Region shows a modest contribution (1.67%) to the national AE

pool. Assam leads with a share of 1.45%, reflecting its relatively stronger industrial base compared to other NE states. Tripura contributes 0.09%, Sikkim 0.07%, Mizoram 0.03%, and Meghalaya 0.016%. Arunachal Pradesh and Manipur possess only 0.01% and 0.006% each, while Nagaland reports 0.0039%, indicating negligible engagement. The NER collectively contributes less than 2% to the national total, implying a need to take proactive steps towards increasing the number of AEs.

4.2 State/UT wise comparison of REs and AEs under NAPS

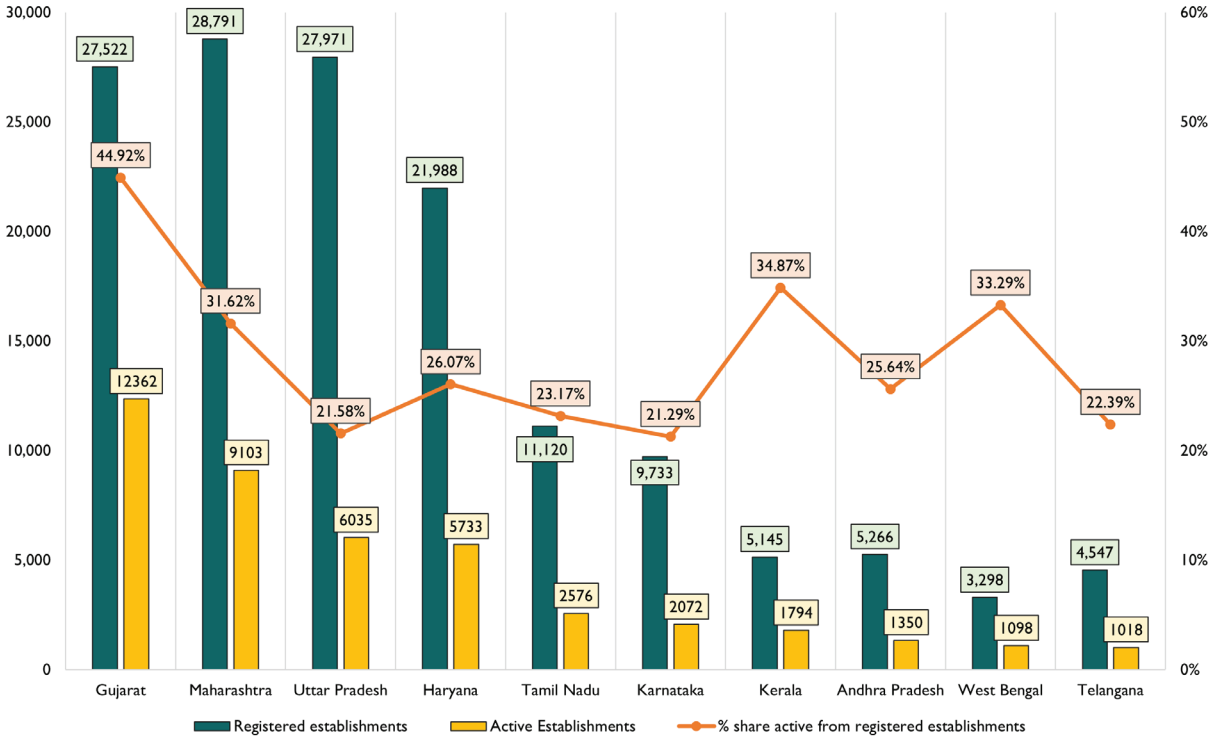
A State-wise exploration using the Active to Registered Establishment (AE-RE) percentage as a key performance indicator to indicate conversion from registered to active establishment serves as a critical metric to evaluate the actual penetration of apprenticeship schemes and emphasizes the need for tailored interventions in underperforming regions to enhance India's skilling ecosystem. 25.72% of AEs are active from the total REs in India as of FY 2024-25.

4.2.1 Top 10 States with highest share of Active Establishments (AEs) under NAPS

The top ten States account for 84.37% of the total AEs under NAPS in FY 2024–25, thereby underscoring their leading role in shaping India's apprenticeship landscape. Fig. 4.2 on the top 10 States by volume of AEs under NAPS offers critical insights into the effectiveness of State-level implementation.

Gujarat leads in both absolute numbers and efficiency at 44.92%, indicating nearly half of its REs are active, contributing to 24.18% of the national total AEs. Maharashtra, while having the highest number of REs (28,791), follows with an AE to RE of 31.62%, contributing significantly (17.80%) to the national total. Uttar Pradesh, despite a similarly high registration base, has a much lower ratio at 21.58%, suggesting underutilization of potential apprenticeship capacity. Haryana and Kerala exhibit relatively strong ratios at 26.07% and 34.87% respectively, reflecting more efficient AE-RE ratio.

Fig. 4.2 Top 10 States (by active establishments under NAPS in FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Top 10 States with highest share Tamil Nadu, Karnataka, and Telangana all demonstrate Registered Establishment to Active Establishment Ratios just above or below 22%. Andhra Pradesh and West Bengal also show moderate ratios (25.64% and 33.29%), suggesting comparatively better mobilization of registered capacity. Overall, this data emphasizes the importance of not only expanding registration but also ensuring high AE-RE percentage. Gujarat's model, in particular, merits deeper examination as a potential benchmark for policy replication in lagging States.

4.2.2 Bottom 10 States with lowest share of Active Establishments (AE) under NAPS

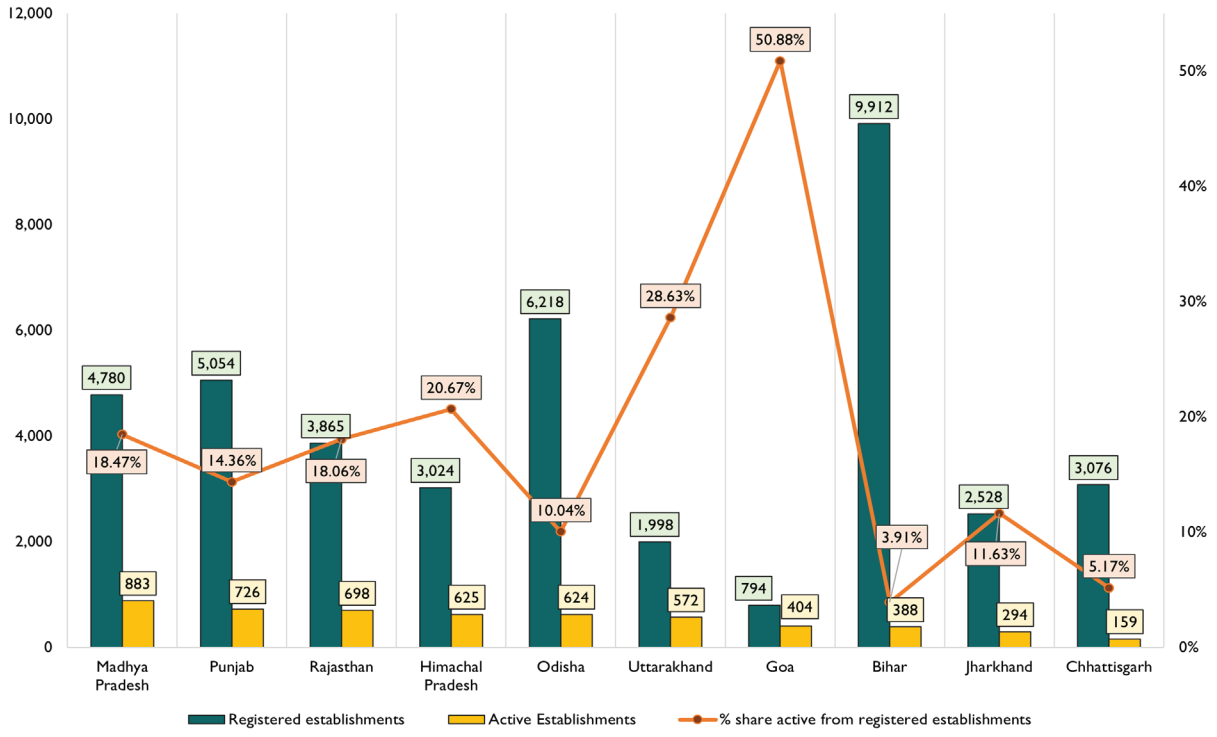
Fig. 4.3 on the bottom ten States by the number of AEs under NAPS reveals significant inefficiencies in the AE-RE percentage. These States account for 10.51% of total AEs in India and include Madhya Pradesh, Punjab, Rajasthan, Himachal Pradesh, Odisha, Uttarakhand, Goa, Bihar, Jharkhand, and Chhattisgarh.

Odisha presents another case of underperformance, where only 624 out of 6,218 REs are active (AE to RE of 10.04%). Similarly, Chhattisgarh, with 3,076 REs, has only 159 AEs (5.17%). Bihar, despite having a substantial number of 9,912 REs, reports 388 AE (3.91%).

In contrast, Goa, though it contributes only 0.79% of India's AEs, exhibits the highest AE-RE percentage in this group, with 404 out of 794 REs being active (50.88%). Uttarakhand also demonstrates moderate effectiveness, with 572 AEs out of 1,998 registered, yielding a percentage of 28.63%. Other States in this category such as Punjab (14.36%), Rajasthan (18.06%), Himachal Pradesh (20.67%), and Jharkhand (11.63%) continue to face challenges in mobilizing registered entities towards active apprenticeship engagement. Despite ranking 11th to 24th nationally in terms of AEs, these States show a wide variance in AE-RE percentage.

Addressing these gaps requires targeted State-specific strategies and proactive interventions by respective State Governments that are aimed at improving institutional outreach, employer facilitation, and compliance mechanisms to increase AEs.

Fig. 4.3 Bottom 10 States (by active establishments under NAPS in FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

4.2.3 Establishments under NAPS in Northeastern States

The NER displays (Fig. 4.4) limited but gradually emerging engagement under NAPS. Assam stands out with 740 AEs out of 2,043 registered, translating to AE-RE ratio of 36.22%. This relatively high percentage places Assam 13th nationally in terms of AEs and accounts for 1.45% of the country's total AEs, by far the highest among Northeastern States.

Sikkim also demonstrates promising efficiency, with 36 AEs out of 88 registered, yielding an AE to RE of 40.91%, although it contributes only 0.070% to the national total due to its small establishment base. Similarly, Arunachal Pradesh and Mizoram, despite very low absolute numbers (5 out of 15 and 13 out of 46, respectively), show reasonably strong AE-RE (33.33% and 28.26%), indicating a degree of institutional engagement.

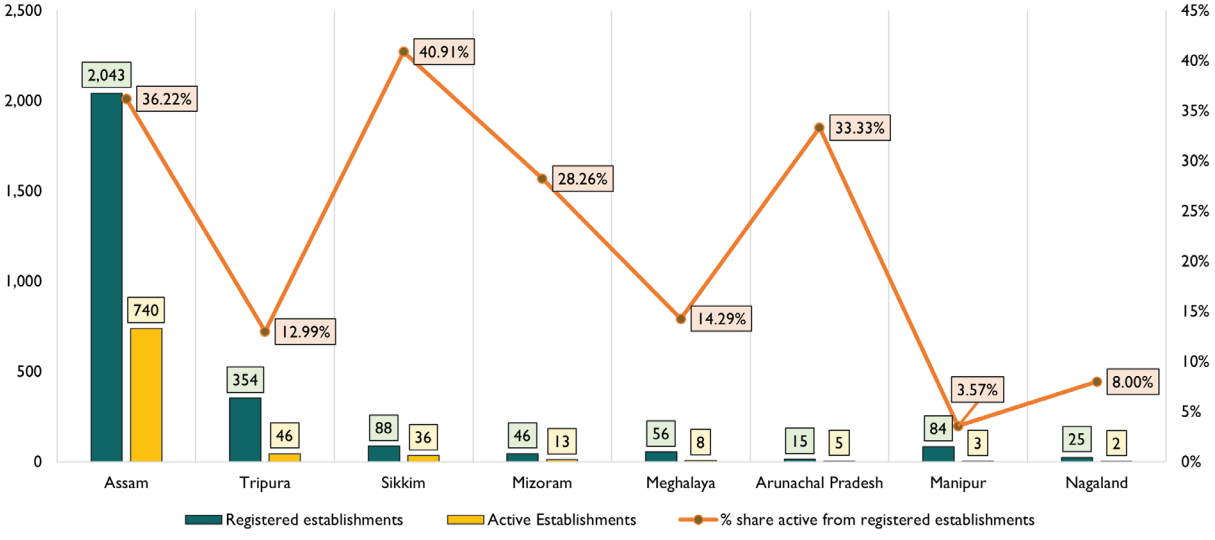
Conversely, the NER also includes some of the lowest performers nationally. Manipur and Nagaland exhibit particularly deficient outcomes, with only 3 out of 84 and 2 out of 25 establishments active, respectively, resulting in dismal AE-RE of 3.57% and 8%, and contributing almost nominally to the national apprenticeship ecosystem (less than 0.01% each). Meghalaya and Tripura also reflect weak performance, with only 8 out of 56 (14.29%) and 46 out of 354 (12.99%) active establishments.

Overall, while States like Assam and Sikkim display relatively higher AE-RE percentage, the NER as a whole remains marginal in terms of absolute contributions to India's apprenticeship infrastructure. These trends point to the need for region-specific policy interventions and proactive steps by respective State Governments towards strengthening apprenticeship adoption and improvement in registered to active establishment conversion.

4.2.4 Establishments under NAPS in UTs

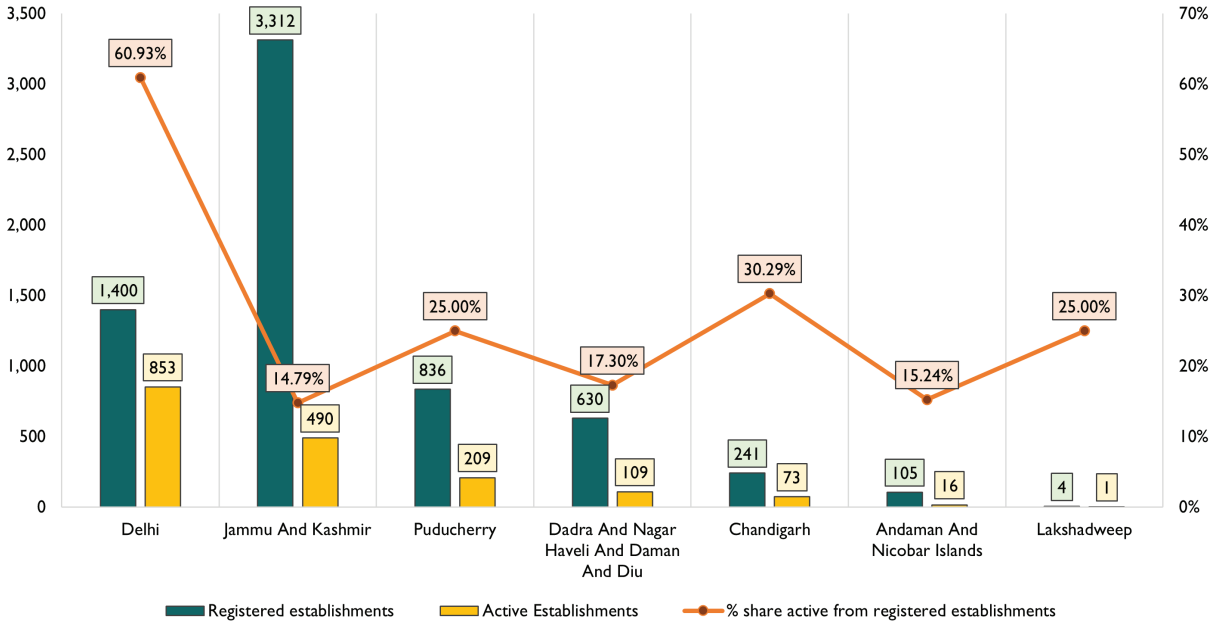
Fig. 4.5 shows the heterogeneous patterns in participation of establishments under NAPS among UTs. Delhi demonstrates the strongest institutional engagement among UTs, with 853 active establishments, accounting for 60.93% of its 1,400 registered establishments. This high AE-RE percentage, coupled with Delhi's 1.67% share in India's total active establishments, places it 12th nationally, far ahead of other UTs. Its performance suggests robust implementation and industry engagement with apprenticeship schemes aligned with its status as the National Capital.

Fig. 4.4 Northeast States (Establishments under NAPS in FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Fig. 4.5 Union Territories (Establishments under NAPS in FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Jammu and Kashmir shows the highest number of REs (3,312), yet only 14.79% are active. Despite this low AE-RE percentage, its contribution to the national total (0.96%) is relatively substantial, ranking it 19th. This indicates significant untapped potential, where improving institutional activation could yield considerable gains in apprenticeship uptake.

Puducherry and Lakshadweep both display a 25% AE-RE ratio, though their scale differs significantly. Puducherry has 209 active establishments, contributing 0.41% nationally (ranked 23rd), while Lakshadweep has just one active establishment, contributing only 0.002%, placing it last (36th). These figures reflect both limited industrial presence and need for higher push in smaller UTs.

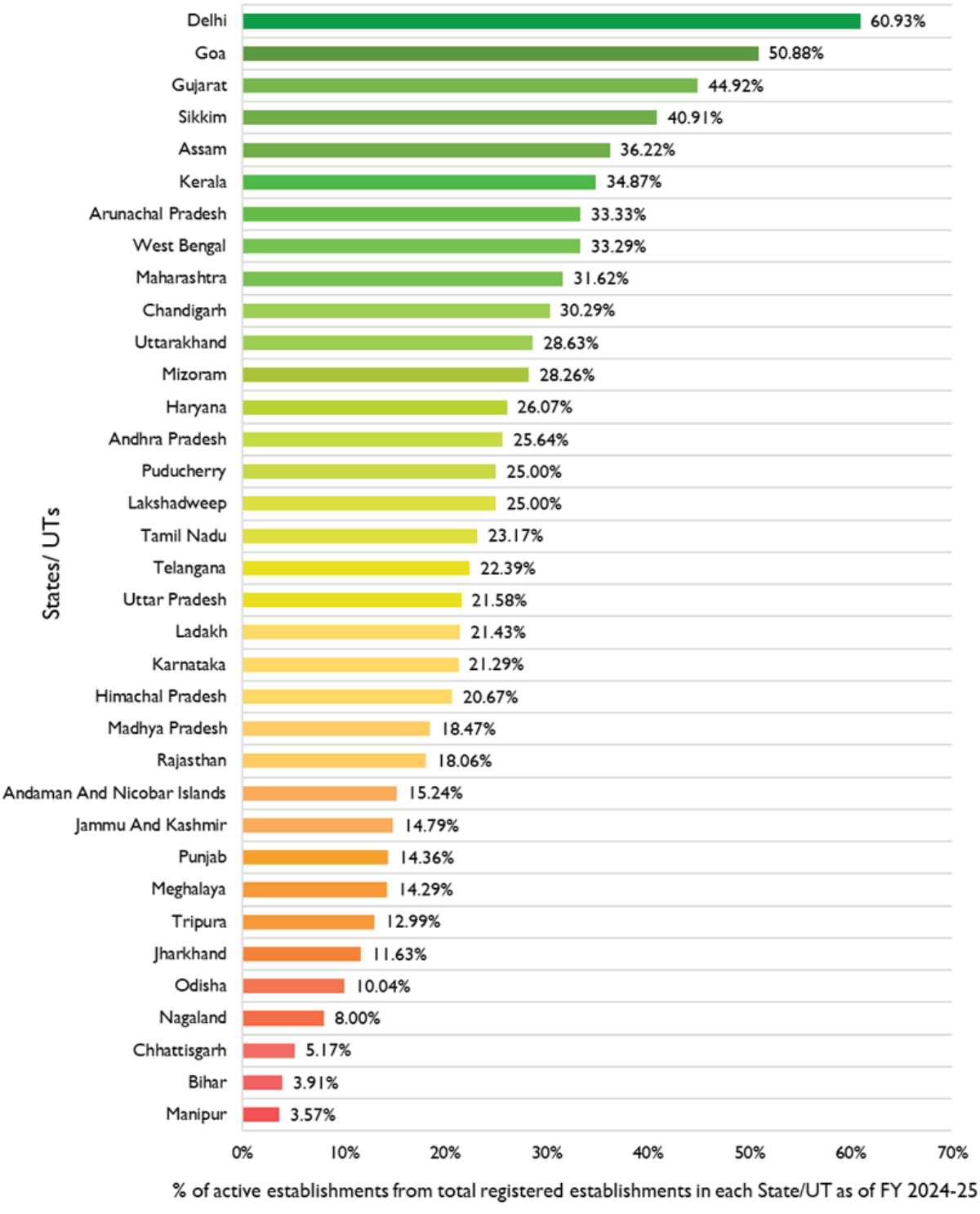
Dadra and Nagar Haveli and Daman and Diu show a modest AE-RE of 17.30%, with 109 active establishments, contributing 0.21% nationally (ranked 25th). Chandigarh, despite a smaller base of 241 registered establishments, shows better AE-RE (30.29%) than most UTs but contributes only 0.14% nationally (ranked 26th), suggesting a small absolute scale. Andaman and Nicobar Islands have a low AE-RE (15.24%) and minimal national contribution (0.031%), ranking 29th.

4.3 AE-RE Percentage for all States/UTs (FY 2024-25)

The data (Fig. 4.6) on the percentage of AEs out of total REs in FY 2024-25 reveals significant inter-State variation in the implementation and operationalization of the NAPS. The leading States and UTs include Delhi (60.93%), Goa (50.88%), Gujarat (44.92%), and Sikkim (40.91%), which demonstrate exceptional AE-RE efficiency. These regions have been able to convert a significant share of registered establishments into active contributors, thereby positioning themselves as benchmarks of institutional responsiveness and private sector participation.

Among the better performing States, Assam (36.22%), Kerala (34.87%), West Bengal (33.29), Maharashtra (31.62%), Haryana (26.07%), and Andhra Pradesh (25.64%), reflect comparatively stronger outcomes. These states exhibit higher-than-average AE-RE percentages. A middle tier of States, including Tamil Nadu (23.17%), Telangana (22.39%), Uttar Pradesh (21.58%), Karnataka (21.29%), Himachal Pradesh (20.67%), Madhya Pradesh (18.47%), and Rajasthan (18.06%), show moderate engagement,

Fig. 4.6 AE-RE percentage in each State/UT (FY 2024-25)



where roughly one-fifth to one-quarter of registered establishments are active.

At the lower end of the spectrum, states such as Manipur (3.57%), Bihar (3.91%), Chhattisgarh (5.17%), Nagaland (8.00%), Odisha (10.04%) and Jharkhand (11.63%) demonstrate very limited conversion of registered establishments into active participants. Union Territories such as Puducherry and Lakshadweep (25.00% each), Chandigarh (30.29%), and Ladakh (21.43%) also show relatively higher conversion compared to many larger states, with Delhi emerging as the only UT with an AE to RE above 50%.

4.4 State-wise insights into Apprentices under NAPS

Understanding the State-wise and Union Territory wise trends in apprentices engaged under NAPS is critical for evidence-based policymaking, targeted skilling strategies, and balanced regional development. This section examines the top 10 and bottom 10 States, and also provides separate analyses for UTs and Northeastern States, offering a nuanced perspective on spatial disparities in apprenticeship engagement under NAPS across India.

The data from NAPS Dashboard presents a comprehensive overview of the distribution and engagement of registered apprentices across Indian States and UTs, highlighting both the scale of registration and the proportion of apprentices engaged. Nationally, 78,43,822 apprentices are registered, of whom 37,75,729 are engaged, resulting in an overall engagement rate of 48.14%. This indicates that while nearly half of all registered apprentices are successfully engaged, there remains significant variation across States in both scale and efficiency of engagement.

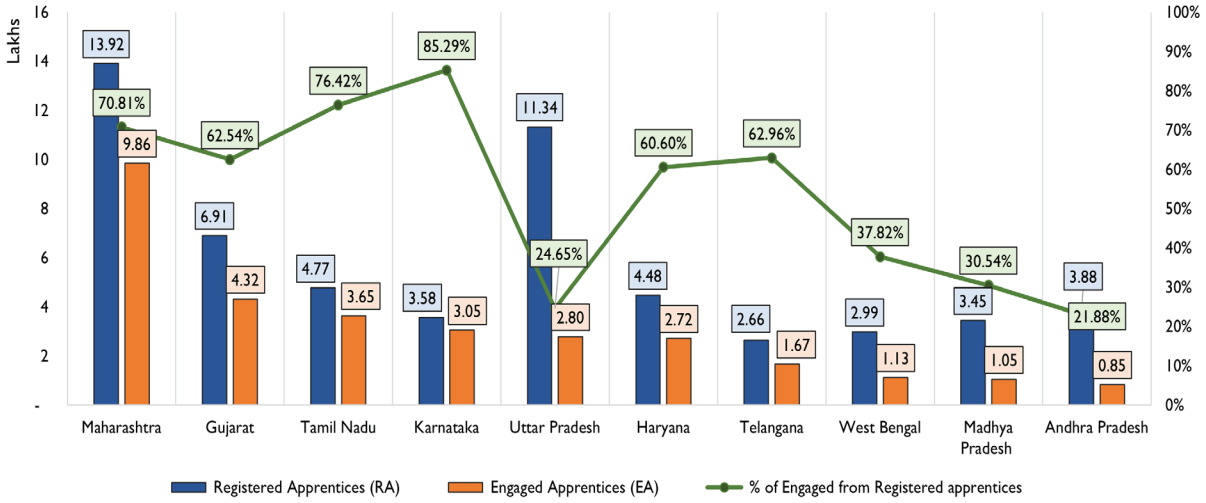
4.4.1 Top 10 States: Apprentices Engaged under NAPS

The Fig. 4.7 shows the top ten States and UTs by number of apprentices engaged under NAPS and reveals significant variations between the volume of registered apprentices and actual engagement levels. The data on the top ten States and UTs by apprenticeship engagement reveals notable variations in both scale and efficiency of participation. Maharashtra emerges as the clear leader, with the highest number of registered apprentices (13,92,306) and engaged apprentices (9,85,919), reflecting a strong alignment between registration and training uptake, as indicated by a substantial engagement rate of 70.81%.

Gujarat follows in second place with 4,32,146 engaged apprentices out of 6,91,033 registered, achieving a comparatively high engagement rate of 62.54%. Tamil Nadu demonstrates even greater efficiency with a 76.42% engagement rate, engaging 3,64,898 apprentices from 4,77,492 registered, ranking third overall. Karnataka stands out as a key performer with the highest engagement rate among these top States at 85.29%, engaging 3,05,469 apprentices from 3,58,140 registered, placing it fourth in total engagement despite ranking eighth in registrations.

Uttar Pradesh, which holds the second-highest registration volume (11,34,065), exhibits a comparatively low engagement rate of 24.65%, securing fifth place in engagement. Haryana demonstrates strong performance with 2,71,586 engaged

Fig. 4.7 Top 10 States by Apprentices Engaged (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

apprentices and a 60.60% engagement rate, ranking sixth in engagement despite its fifth position in registrations.

Telangana, with 2,65,669 registered apprentices, ranks seventh in engagement, reflecting efficiency at 62.96%. West Bengal, Madhya Pradesh, and Andhra Pradesh, ranked eighth, ninth, and eleventh in engagement respectively, show mixed performance, with engagement rates of 37.82%, 30.54%, and 21.88%. Andhra Pradesh, despite ranking sixth in registrations, records the lowest engagement rate among this group, highlighting gaps between apprenticeship registration and training absorption.

Overall, the data illustrates that while larger States such as Maharashtra and Gujarat dominate in scale, States like Karnataka and Tamil Nadu demonstrate exceptional efficiency, whereas others, notably Andhra Pradesh and Uttar Pradesh, face considerable challenges in converting registrations into active apprenticeships.

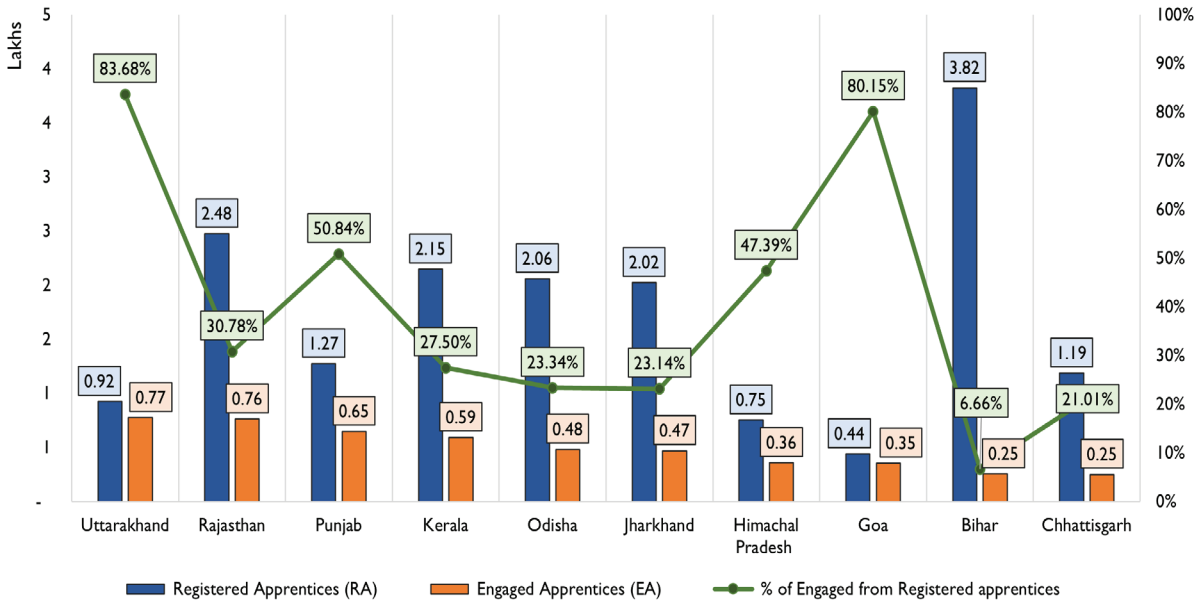
4.4.2 Bottom 10 States: Apprentices Engaged under NAPS

Fig. 4.8 showing the bottom ten States and UTs in apprenticeship engagement under NAPS highlights significant disparities between registration and actual engagement. Uttarakhand demonstrates remarkable efficiency, engaging 77,356 apprentices from 92,445 registrations, achieving an engagement rate of 83.68%, the second highest among all States despite its lower registration rank (20th). Goa similarly exhibits high efficiency, with an engagement rate of 80.15% and 35,248 apprentices engaged out of 43,977 registered.

In contrast, Rajasthan, while ranking 12th in registrations (2,47,522), secures only the 13th position in engagement (76,195), with a moderate engagement rate of 30.78%, indicating gaps between outreach and absorption. Punjab performs moderately well, with 50.84% engagement, translating 1,27,362 registrations into 64,757 active apprentices.

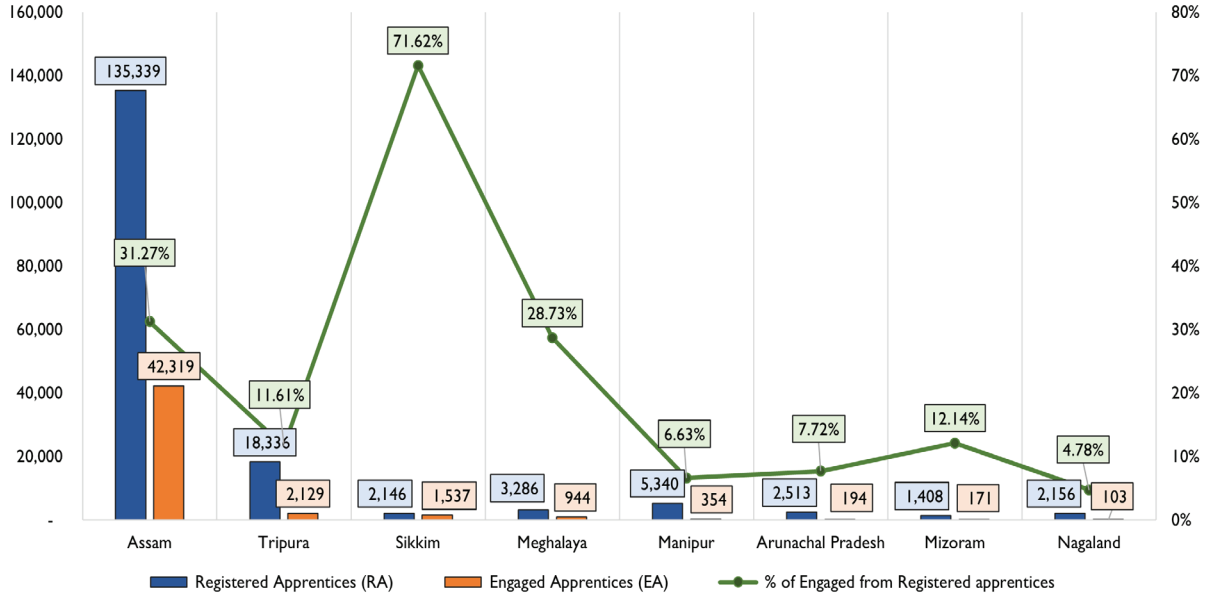
Other States display considerable inefficiencies in apprenticeship conversion. Kerala (27.50%), Odisha (23.34%), and Jharkhand (23.14%) each rank high in registrations but exhibit comparatively low engagement, placing them at 15th, 16th, and 17th in engagement respectively. Himachal Pradesh shows moderate performance with a 47.39% engagement rate, engaging 35,705 apprentices from 75,339 registered. Bihar, despite having the seventh-highest registration volume

Fig. 4.8 Bottom 10 States by Apprentices Engaged (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Fig. 4.9 Northeast States by apprentices engaged (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

(3,82,437), records the lowest engagement rate of 6.66%, securing only the 21st position in engagement. Chhattisgarh, with 1,18,536 registered apprentices, also demonstrates limited training absorption with a 21.01% engagement rate.

Overall, this distribution reveals that while smaller States like Goa and Uttarakhand excel in efficiency, several larger States with higher registration volumes are unable to achieve proportional engagement.

4.4.3 Northeastern States: Apprentices Registered and Engaged under NAPS

The Fig. 4.9 and analysis of apprenticeship performance in the NER reveals significant disparities in both scale and efficiency.

Assam dominates the region in absolute numbers, with 1,35,339 registered apprentices and 42,319 engaged, reflecting an engagement rate of 31.27% and placing the State 16th in registrations and 18th in engagement nationally. Tripura follows distantly with 18,336 registrations and 2,129 engaged apprentices, but with a modest engagement rate of 11.61%, ranking 24th in registrations and 27th in engagement. Sikkim demonstrates exceptional efficiency in contrast, with a 71.62% engagement rate, the highest in the region, despite its small scale, engaging 1,537 apprentices from just 2,146 registered, ranking 32nd nationally in registrations and 28th in engagement.

Other States in the region face considerable challenges in apprenticeship absorption. Meghalaya achieves a moderate engagement rate of 28.73%, with 944 engaged apprentices out of 3,286 registered. Manipur, Arunachal Pradesh, Mizoram, and Nagaland all record engagement rates below 15%, with Nagaland performing the weakest at 4.78% engagement, ranking 35th in engagement nationally.

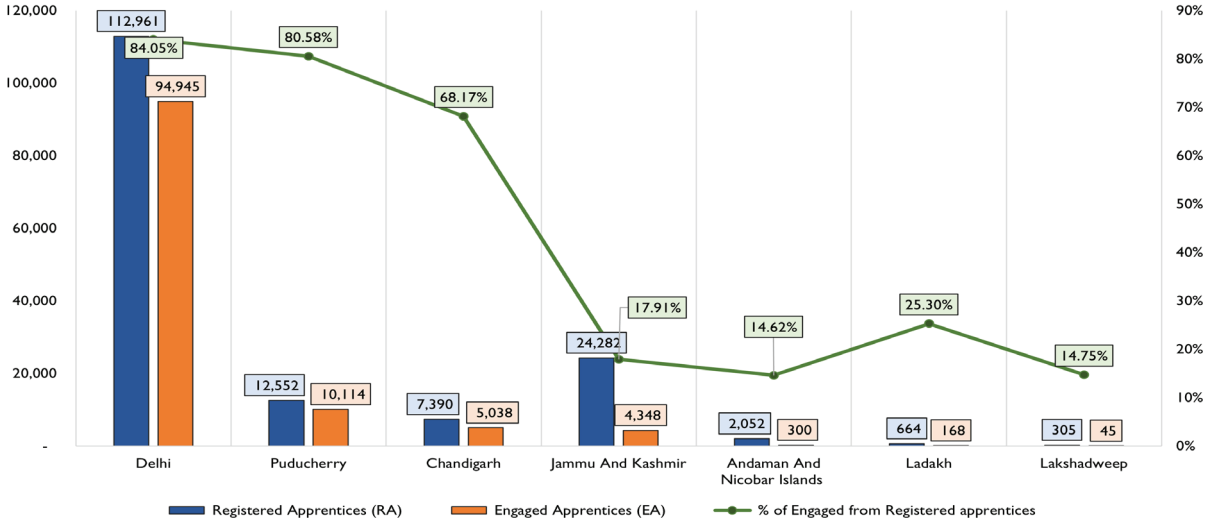
These figures indicate that while smaller States such as Sikkim are efficient in converting registrations into training opportunities, much of the region lags behind national averages in both scale and absorption, underscoring the need for targeted policy interventions.

4.4.4 Union Territories: Apprentices Registered and Engaged under NAPS

The analysis[5] (Fig. 4.10) of apprenticeship engagement in UTs under NAPS reveals considerable variation in efficiency and scale.

[5] Dadra and Nagar Haveli has been excluded from this analysis due to inconsistencies in the reported data

Fig. 4.10 Union Territories by apprentices engaged (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Delhi emerges as the leading UT, with 1,12,961 registered apprentices and 94,945 engaged, achieving an engagement rate of 84.05%, which places it 10th nationally in engagement despite ranking 19th in registrations. Puducherry also demonstrates strong performance, engaging 10,114 apprentices from 12,552 registered, translating to an engagement rate of 80.58%. Chandigarh follows with a relatively high engagement rate of 68.17%, engaging 5,038 apprentices from 7,390 registered, showcasing effective utilisation of its smaller registration base.

In contrast, several UTs record low engagement levels. Jammu and Kashmir, with 24,282 registered apprentices, engages only 17.91%, while Ladakh achieves a modest 25.30% engagement rate from its limited base of 664 registrations. Andaman and Nicobar Islands and Lakshadweep reflect the lowest levels of engagement, at 14.62% and 14.75% respectively, highlighting significant gaps in apprenticeship implementation. Overall, while Delhi and Puducherry stand out for their efficiency and scale, other UTs demonstrate a need for targeted efforts to enhance participation and align training uptake with registration drives.

4.4.5 Apprentices Engaged and Completed Training under NAPS among States/UTs

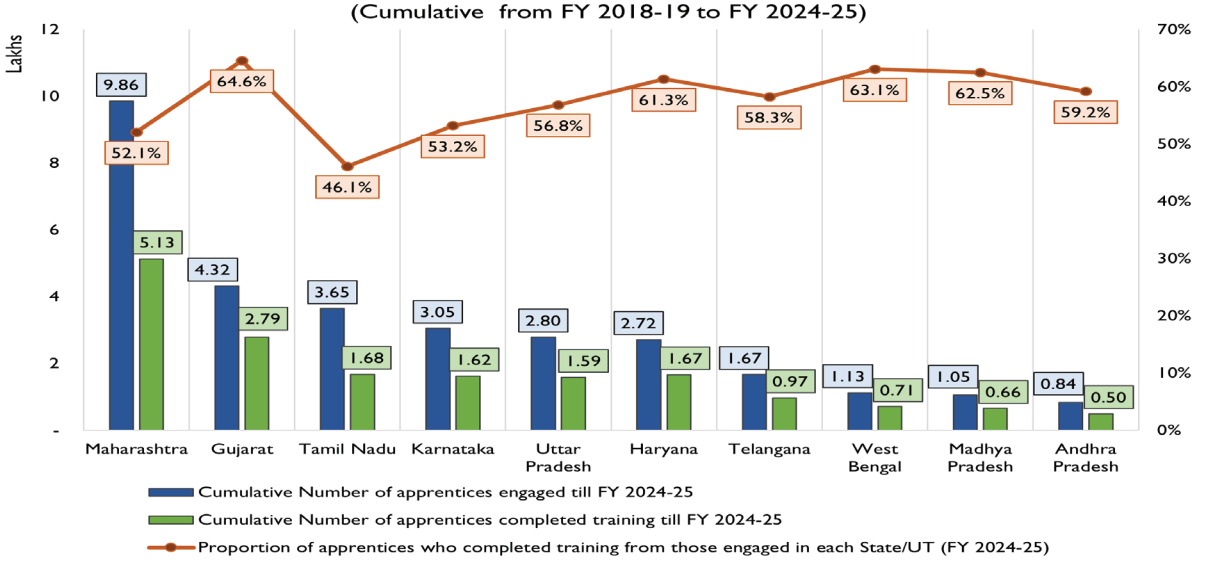
Analysing apprentices engaged and those who have completed training at the state and UT level is highly useful for evidence-based policymaking, programme monitoring, and resource allocation. Such analysis provides granular insights into the performance and outreach of NAPS across diverse regions.

4.4.6 Top 10 States: Apprentices Engaged and Completed Training under NAPS

The top ten states (Fig. 4.11) by cumulative apprentice engaged under NAPS till FY 2024–25 collectively account for a significant share of India's apprenticeship ecosystem, yet they exhibit considerable variation in training completion efficiency.

As of FY 2024-25, Maharashtra leads with 9,85,919 apprentices engaged, but its completion rate of 52.1% highlights a gap between enrolment and successful training outcomes. Gujarat follows with 4,32,146 engaged apprentices and a comparatively high completion rate of 64.6%, indicating stronger programme efficiency. Tamil Nadu, despite ranking third with 3,64,898 engaged apprentices, has one of the lowest completion rates at 46.1%, suggesting challenges in sustaining apprenticeship completion. Karnataka, Uttar Pradesh, and Haryana form a mid-tier cluster with engagement levels above 2.7 lakh and completion rates ranging from 53.2% to 61.3%, positioning Haryana as a State with better engagement rates.

Fig. 4.11 Top 10 States by number of apprentices engaged under NAPS (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Telangana, West Bengal, and Madhya Pradesh contribute meaningfully to national total with moderate engagement volumes and high completion rates above 58%, reflecting a strong focus on training outcomes. Andhra Pradesh rounds out the list with 84,323 engaged apprentices and a 59.2% completion rate, maintaining balance between participation and programme delivery. Overall, these trends reveal a concentration of apprenticeship activity in a few States, with Gujarat, West Bengal, Madhya Pradesh, and Haryana demonstrating better outcome efficiency compared to higher-volume but less efficient States like Maharashtra and Tamil Nadu. This highlights the need for State-specific interventions to close the completion gap while sustaining engagement growth.

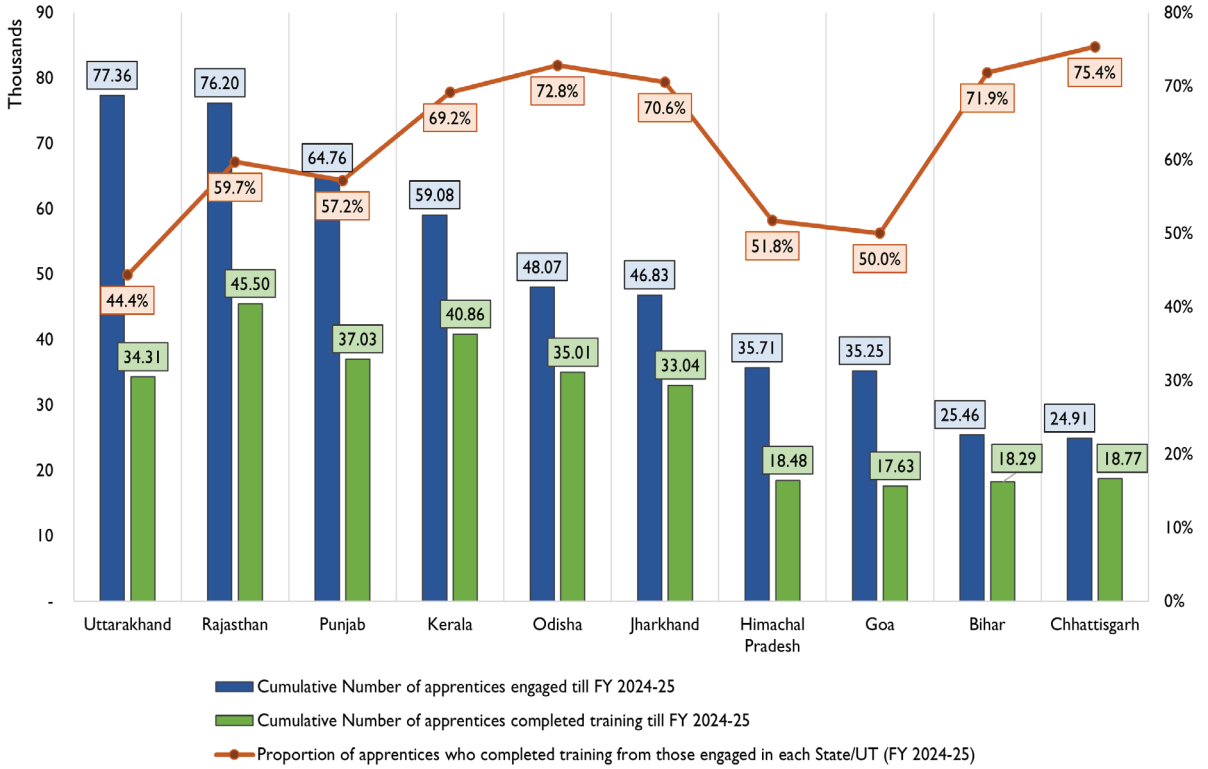
4.4.7 Bottom 10 States: Apprentices Engaged and Completed Training under NAPS

Fig. 4.12 shows the ten States with the lowest cumulative apprentice engagement under the NAPS in FY 2024–25. Uttarakhand, Rajasthan, and Punjab lead this cohort in terms of absolute engagement, with cumulative engagement figures of 77,356, 76,195, and 64,757 respectively; however, their completion rates remain modest at 44.4%, 59.7%, and 57.2%, indicating scope for enhancing training efficiency. Kerala, Odisha, and Jharkhand demonstrate comparatively stronger performance, recording completion rates of 69.2%, 72.8%, and 70.6%, suggesting that despite lower engagement volumes than the top-performing states nationally, these states maintain a higher proportion of successful training outcomes.

Notably, Chhattisgarh stands out with the highest completion rate in this group at 75.4%, reflecting effective implementation despite having the lowest engagement figure of 24,908 apprentices. Bihar similarly achieves a high completion rate of 71.9%, underlining efficiency in training delivery relative to its engagement base.

Conversely, Himachal Pradesh and Goa, while having moderate engagement levels of 35,705 and 35,248 respectively, display relatively lower completion efficiencies of 51.8% and 50.0%. Overall, this analysis underscores that States with lower absolute engagement volumes, such as Chhattisgarh, Bihar, and Odisha, demonstrate comparatively stronger outcome-oriented approaches, whereas some higher-engagement States like Uttarakhand and Punjab face challenges in translating enrolment into completions. This highlights the need for differentiated

Fig. 4.12 Bottom 10 States by number of apprentices engaged under NAPS (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

strategies focusing on scaling participation in smaller states while improving completion efficiency in states with higher apprentice engagement but weaker training outcomes.

4.4.8 Northeastern States: Apprentices Engaged and Completed Training under NAPS

The Fig. 4.13 on apprenticeship participation in Northeast India under the NAPS reveals distinctive trends in engagement, training completion, and state-wise performance. Although Northeast States collectively represent a small fraction of national apprenticeship figures, several demonstrate exceptional training completion rates.

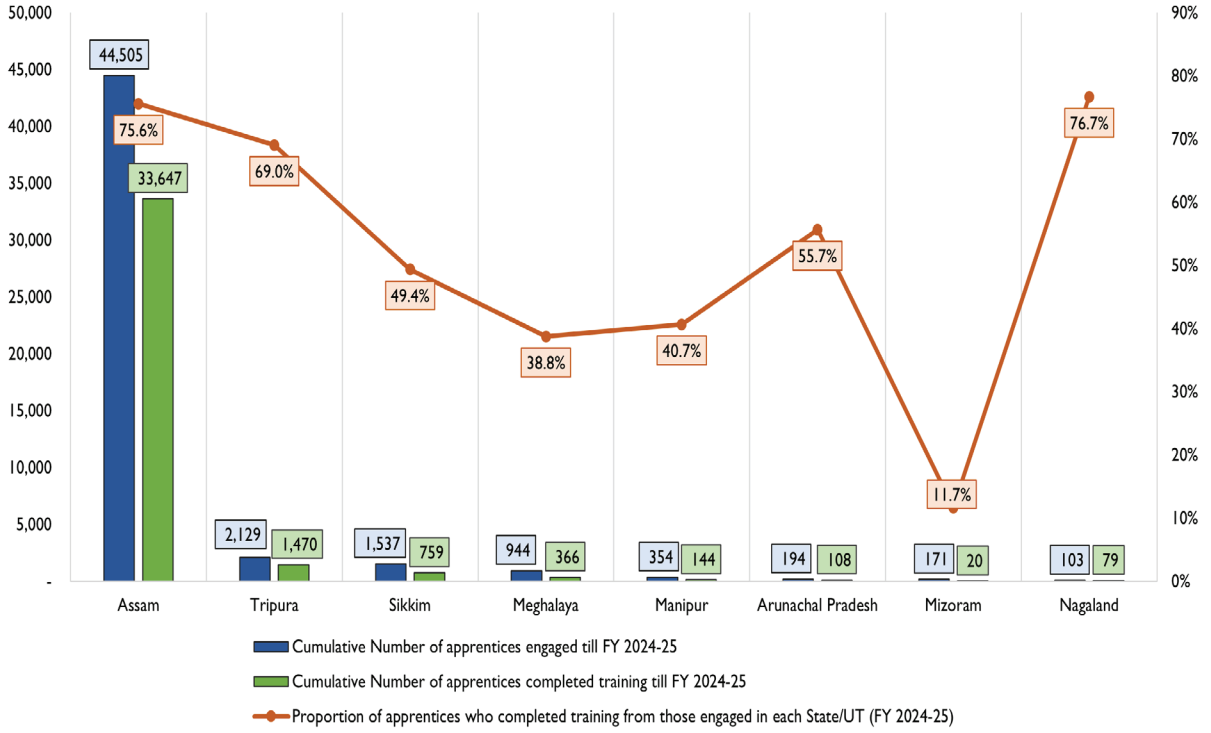
Assam dominates the region, with 44,505 apprentices engaged, accounting for the majority of participation, and it also demonstrates high training completion efficiency at 75.6%, ranking third nationally. Tripura and Nagaland, though having lower engagement volumes of 2,129 and 103 respectively, exhibit strong completion performance, with rates of 69.0% and 76.7%, reflecting highly effective training delivery relative to scale. Sikkim and Arunachal Pradesh show moderate engagement, with 1,537 and 194 apprentices engaged, and completion rates of 49.4% and 55.7%, respectively, indicating stable implementation.

Conversely, Meghalaya and Manipur register low engagement and relatively weak completion efficiency at 38.8% and 40.7%, respectively. Mizoram, despite notable growth trends, records both low engagement (171 apprentices) and the lowest regional completion rate (11.7%), highlighting need for focussed interventions.

4.4.9 UTs: Apprentices Engaged and Completed Training under NAPS

Fig. 4.14 on apprenticeship engagement in India's UTs under the NAPS reveals significant variation across regions, with performance measured by both scale (engagement and completions) and

Fig. 4.13 Apprentices under NAPS in Northeast States (Cumulative from FY 2018-19 to FY 2024-25)

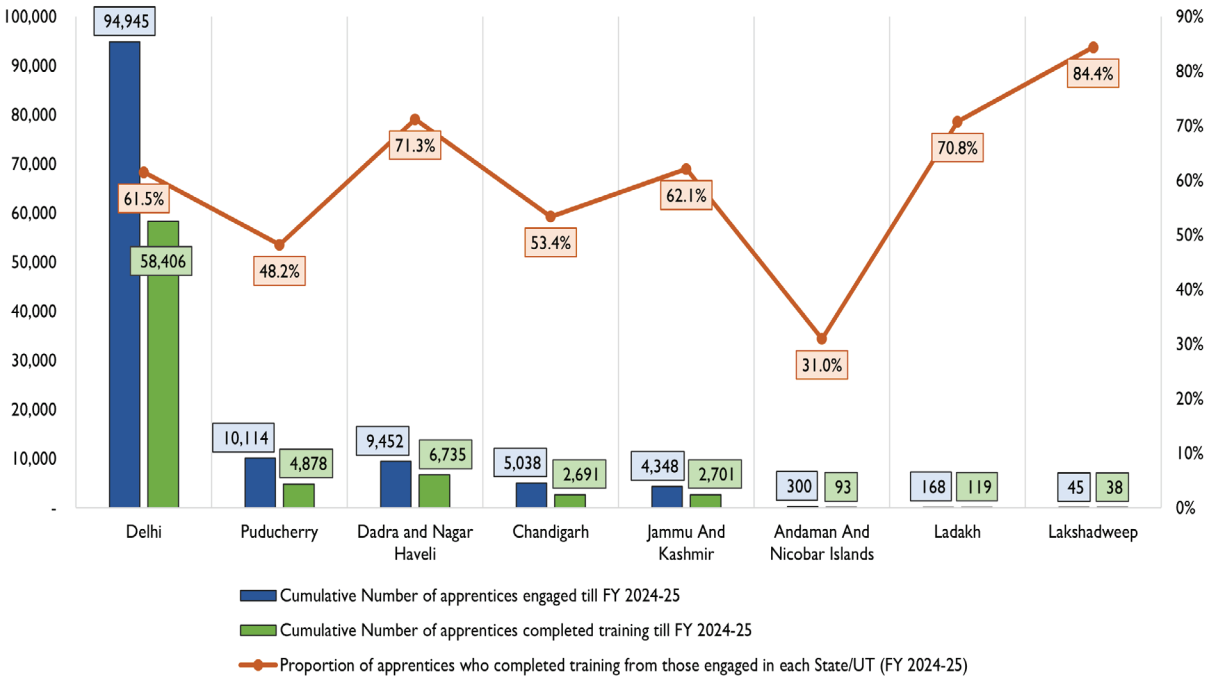


(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

effectiveness (completion rate).

Delhi leads with the highest cumulative apprentice engagement at 94,945, contributing substantially to the national total, and maintains a strong completion rate of 61.5%, reflecting balanced participation and efficiency. Puducherry follows distantly

Fig. 4.14 Apprentices under NAPS in Union territories (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

with 10,114 engaged apprentices, though its completion rate of 48.2% indicates room for improvement in training effectiveness. Dadra and Nagar Haveli and Ladakh stand out for high completion rates of 71.3% and 70.8%, respectively, demonstrating strong efficiency despite smaller engagement volumes of 9,452 and 168 apprentices. Chandigarh and Jammu & Kashmir, with engagement levels of 5,038 and 4,348 apprentices, show moderate completion performance at 53.4% and 62.1%, respectively, highlighting consistent though limited outreach.

Smaller UTs display contrasting trends, with Lakshadweep achieving an exceptional completion rate of 84.4%, the highest nationally, despite having only 45 apprentices engaged, signifying high training quality and individualized focus. Conversely, Andaman and Nicobar Islands record a notably low completion rate of 31% from just 300 engaged apprentices, underscoring systemic challenges in implementation. Overall, Delhi dominates in scale, while smaller UTs like Lakshadweep, Ladakh, and Dadra and Nagar Haveli exemplify high training efficiency, indicating that while larger territories have succeeded in outreach, smaller ones excel in outcome quality, thereby reflecting a dual challenge of scaling engagement without compromising completion performance.

4.5 Trends among States/UTs in apprentices registered, engaged, and completed training under NAPS in the last five years

Table 4.1[6] shows a comparative analysis of rankings across States and UTs from FY 2020–21 to FY 2024–25 in under NAPS reveals patterns in apprenticeship registration, apprentices engaged, and apprentices completed training. Comparing rankings across registration, engagement, and completion stages is especially insightful because it reveals mismatches in performance at different stages of the apprenticeship pipeline, states that rank high in registrations but low in completions, for example, may face challenges in employer absorption, training quality, or learner retention, that can be further explored.

This layered analysis enables targeted interventions, ensuring that resources, incentives, and technical support are directed to states that need them most. It also helps track progress over time, evaluate policy effectiveness, and encourage healthy competition among states to improve rankings. Furthermore, rank-based comparisons simplify communication of performance data to stakeholders, making it easier for central and state governments to benchmark success, share best practices, and align efforts to achieve national skilling and employability targets more equitably.

Among larger States, Maharashtra consistently dominates all three metrics, ranking first in registration, engagement, and completion throughout FY 2020–21 to FY 2024–25, demonstrating both scale and operational efficiency. Uttar Pradesh ranks consistently high in registrations (2nd) but fluctuates in engagement and completion ranks, typically between 3rd and 6th, revealing persistent challenges in converting large registration volumes into active apprenticeship outcomes. Gujarat and Tamil Nadu show stable high rankings, with Gujarat maintaining top-five positions across all three indicators and Tamil Nadu achieving particularly strong engagement and completion performance despite slightly lower registration ranks.

Karnataka and Haryana reflect significant efficiency: Karnataka ranks sixth in registration (FY 2024–25) but appears consistently in the top three for engagement and completion, while Haryana, although 10th in registrations, achieves 6th rank in engagement and completion, signalling strong programmatic effectiveness. States such as Bihar and Andhra Pradesh, despite moderately high registration ranks (5th and 7th in FY 2024–25), show lower engagement and completion ranks, indicating gaps in converting registered apprentices into trained and completing participants.

[6] Source: National Apprenticeship Promotion Scheme Dashboard, as of 25 August 2025

Table 4.1		Rank of each State in RA*, EA, and CT from FY 2020-21 to 2024-25														
		2024-25			2023-22			2022-23			2021-23			2020-21		
Sr. no	States/UTs	RA	EA	CT	RA	EA	CT	RA	EA	CT	RA	EA	CT	RA	EA	CT
1	Maharashtra	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Uttar Pradesh	2	5	3	2	5	6	2	5	6	2	7	4	2	5	5
3	Tamil Nadu	3	2	5	3	2	3	4	3	4	4	3	3	6	4	4
4	Gujarat	4	4	4	4	3	2	3	2	2	3	2	2	3	2	2
5	Bihar	5	21	22	6	21	23	5	20	20	5	19	18	5	22	21
6	Karnataka	6	3	2	5	4	4	7	4	5	7	5	6	10	6	6
7	Andhra Pradesh	7	13	12	7	10	10	10	11	11	10	11	12	11	15	14
8	West Bengal	8	9	9	8	8	8	8	8	8	8	8	9	12	10	11
9	Madhya Pradesh	9	8	8	9	9	9	9	9	9	11	10	8	9	8	8
10	Haryana	10	6	6	10	6	5	6	6	3	6	4	5	4	3	3
11	Rajasthan	11	12	10	11	12	11	13	14	12	12	15	16	8	12	12
12	Kerala	12	15	14	14	15	16	14	15	13	13	16	13	15	11	9
13	Odisha	13	17	16	12	18	17	11	16	15	14	17	17	14	17	15
14	Jharkhand	14	18	21	13	17	18	15	18	18	16	18	15	7	13	13
15	Telangana	15	7	7	16	7	7	12	7	7	9	6	7	13	7	7
16	Assam	16	20	20	15	20	20	17	17	16	15	12	10	17	18	18
17	Delhi	17	11	11	19	13	13	19	12	10	17	9	11	18	9	10
18	Punjab	18	14	15	18	14	14	16	13	14	18	13	14	19	14	16
19	Chhattisgarh	19	22	18	20	22	22	20	21	21	19	22	21	16	21	23
20	Uttarakhand	20	10	13	21	11	12	18	10	17	20	14	19	20	16	17
21	Himachal Pradesh	21	19	17	22	19	21	21	19	19	21	20	20	21	20	19
22	Jammu And Kashmir	22	26	26	23	26	27	22	25	25	23	25	25	23	26	25
23	Goa	23	16	19	17	17	19	23	22	22	24	21	22	22	19	20
24	Tripura	24	27	27	24	27	28	24	27	27	22	28	28	24	27	27
25	Puducherry	25	23	24	25	24	25	25	23	24	25	24	24	26	24	24
26	Manipur	26	31	28	26	33	33	27	32	31	30	30	29	29	31	31
27	Dadra and Nagar Haveli	27	24	23	28	23	24	29	24	23	28	23	23	27	23	22
28	Chandigarh	28	25	25	27	25	26	26	26	26	26	26	26	25	25	26
29	Meghalaya	29	29	30	29	29	30	28	29	34	27	29	30	28	29	29
30	Arunachal Pradesh	30	33	31	32	31	31	30	30	30	31	33	33	31	34	33
31	Nagaland	31	35	34	30	34	34	31	34	34	33	31	31	33	36	35
32	Sikkim	32	28	29	31	28	29	33	28	28	32	27	27	30	28	28
33	Mizoram	33	32	33	34	35	36	34	36	36	34	36	36	34	36	35
34	Andaman And Nicobar Islands	34	30	35	33	32	32	32	31	29	29	34	34	32	34	35
35	Ladakh	35	34	32	35	30	15	36	33	32	35	33	33	35	32	32
36	Lakshadweep	36	36	36	36	36	35	35	35	35	36	36	36	36	30	30
	Union Territory Northeast State	*RA (Registered Apprentices); EA (Engaged Apprentices); CT (Completed Training)														

Madhya Pradesh, West Bengal, Rajasthan, Delhi, Telangana, Kerala, Punjab, Odisha, and Himachal Pradesh exhibit varying levels of efficiency, with engagement and completion ranks generally close to registration ranks, reflecting proportional outcomes. Goa, although low in registration, consistently demonstrates moderately higher engagement and completion ranks (16th–19th), suggesting effective management of apprenticeship programmes relative to scale.

The Northeastern Region displays marked heterogeneity in performance. Assam, with relatively higher registration ranks (16th in FY 2024–25), maintains moderate engagement and completion ranks (20th each). Sikkim, despite minimal registration numbers (32nd in FY 2024–25), achieves higher engagement and completion ranks (28th and 29th), reflecting strong conversion relative to its scale. Manipur, Meghalaya, Arunachal Pradesh, Mizoram, and Nagaland generally exhibit low registration, engagement, and completion ranks, with only modest fluctuations over the five-year period. Mizoram and Nagaland consistently occupy the bottom ranks in all three indicators, highlighting severe limitations in apprenticeship participation.

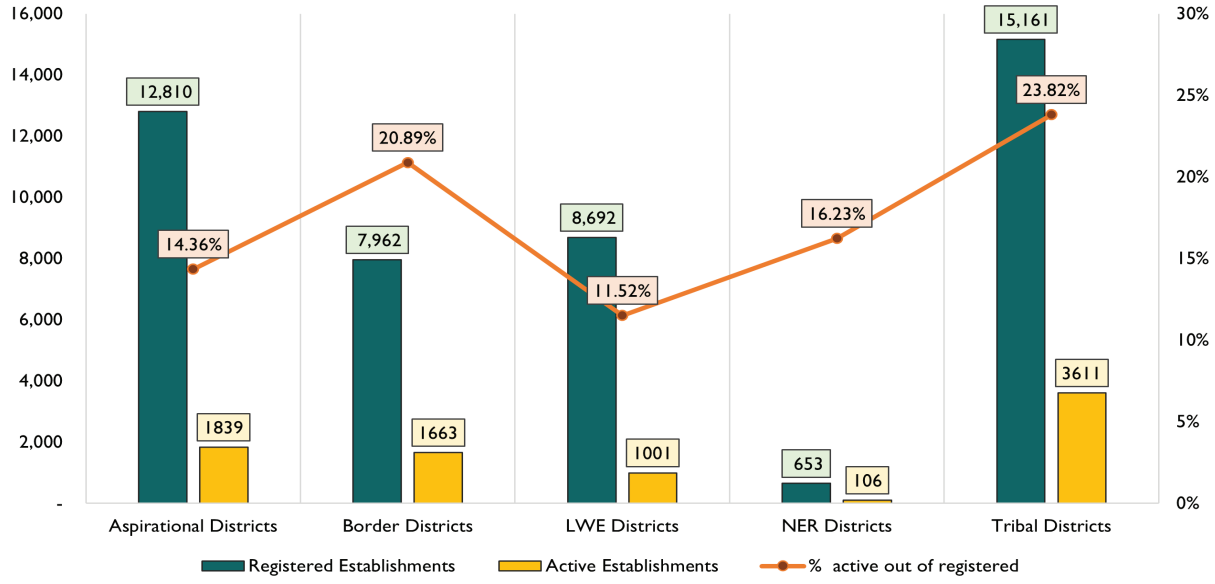
Among UTs, Delhi consistently demonstrates strong performance, ranking 17th in registered apprentices in FY 2024–25 while achieving 11th in engagement and 11th in training completion, reflecting high conversion efficiency relative to registration size. Puducherry and Chandigarh show moderate registration ranks (25th and 28th, respectively) but achieve higher relative ranks in engagement and completion, consistently in the low twenties, suggesting effective utilization of their limited apprentice base. Dadra and Nagar Haveli presents an unusual pattern in FY 2024–25, with its engagement and completion ranks (24th and 23rd) exceeding its registration rank (27th), indicating potentially significant post-registration participation.

Andaman & Nicobar Islands and Lakshadweep consistently occupy the lowest ranks in registration, engagement, and completion across all years, with minimal variation, highlighting persistent challenges in generating apprenticeship activity in smaller UTs. Ladakh exhibits low registration ranks (35th) and moderate engagement and completion performance, with some improvements noted in FY 2023–24, reflecting marginal gains in participation.

4.6 Trends in REs and AEs among special regions under NAPS

NAPS has shown notable expansion across India, yet the performance of special

Fig. 4.15 REs and AEs in Special Districts (Cumulative from FY 2018-19 to FY 2024-25)



(National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

districts, presents a mixed picture (Fig 4.15). On the NAPS dashboard, special districts include Aspirational, Border, LWE, NER and tribal districts. As shown in Fig. 4.15, as of FY 2024, there remains a considerable gap between REs and AEs across India's special category districts, underscoring persistent barriers in translating policy outreach into operational apprenticeship engagement.

Tribal Districts lead among special regions, with 23.82% of the 15,161 REs actively engaged in apprenticeship programmes. Border Districts follow with 20.89% activation, with 1,663 of 7,962 REs active. Aspirational Districts show a lower AE-RE of 14.36%, with only 1,839 of 12,810 REs active.

The gap highlights the need for focused interventions to sustain apprenticeship programmes in these districts. NER Districts (103 districts) report an AE-RE percentage of 16.23%. 38 LWE-affected districts register the lowest AE-RE of just 11.52%, with 1,001 out of 8,692 REs active.

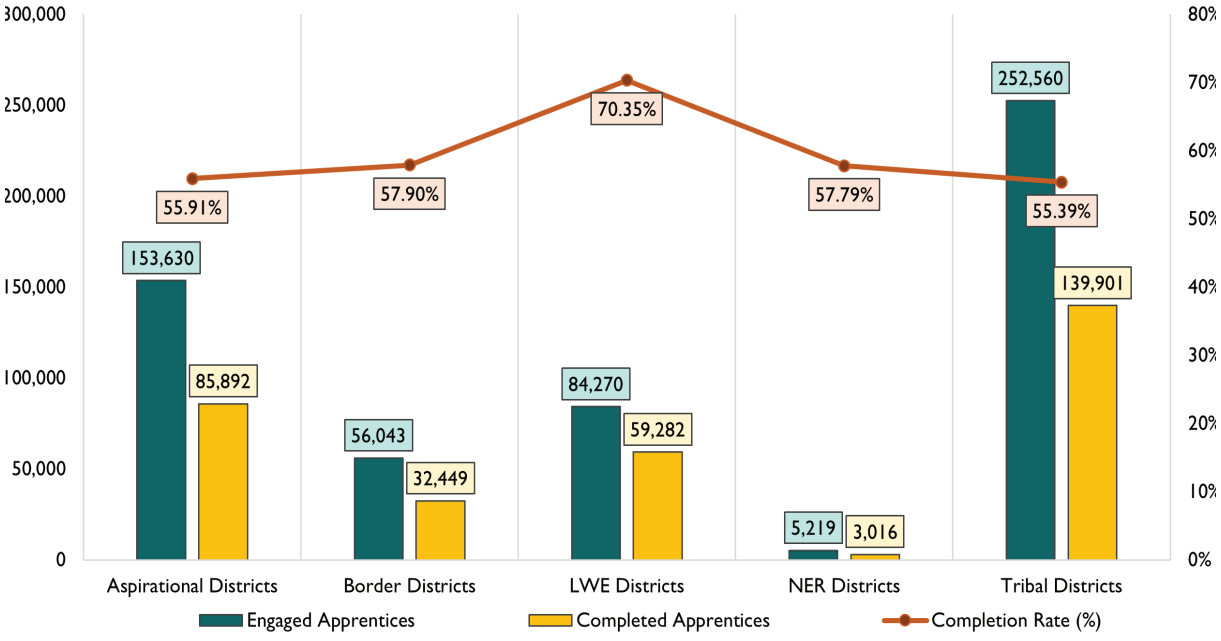
4.6.1 Trends in apprentices engaged and completed training among special regions under NAPS.

Fig. 4.16 reveals significant regional variations in apprenticeship engagement and completion outcomes under NAPS, underscoring critical policy insights.

Aspirational districts, with 1,53,630 engaged apprentices and a completion rate of 55.91%, demonstrate substantial participation but slightly below-average completion efficiency compared to the national rate of 56.79%. Border districts show a smaller volume of apprentices (56,043 engaged) yet achieve a relatively higher completion rate of 57.90%.

LWE districts stand out with a high completion rate of 70.35%, the highest among all regions. The NER reports 5,219 engaged apprentices with a completion rate of 57.79%, slightly above the national average, suggesting training quality is maintained despite the region's logistical and infrastructural constraints.

Fig. 4.16 Apprentices in Special Districts (Cumulative from FY 2018-19 to FY 2024-25)



(Source: National Apprenticeship Promotion Scheme Dashboard, as on 10 April 2025)

Tribal districts account for the largest regional share after All India totals, with 2,52,560 engaged apprentices, but their completion rate of 55.39% falls slightly below the national average, pointing to challenges in retention and completion despite large-scale engagement. These insights help prioritise regions not only by participation but also by efficiency, ensuring that apprenticeship programmes achieve both inclusivity and quality.

4.7 Insights on trends in apprentices under NATS (States and UTs)

NATS serves as a crucial mechanism for skilling India's youth and linking formal education with workplace training. NATS maintains public dashboards and publishes State-wise and sectoral data, offering insights into apprentice engagement from which performance trends, growth rates, and regional variations can be analysed. At present[7], publicly available data on apprentice engagement under NATS is restricted to just two financial years, FY 2024–25 and FY 2025–26. Moreover, granular data on registered and active establishments, apprentices disaggregated by sector, geography, industry, gender, and qualifications, and details of participating educational institutions are not accessible.

The performance of Indian States and UTs under NATS reveals considerable heterogeneity in apprenticeship engagement, measured through both the absolute numbers from FY 2019–20 to FY 2024–25 and the percentage share from all India.

The 20 States, 8 UTs and 8 Northeastern States are analysed separately with a ranking among them based on their apprentices engaged in each year. The data reveals a diverse pattern of engagement and growth across States, with some regions demonstrating rapid acceleration in apprenticeship uptake, while others reflect steady but moderate increases. The ranking figures provide empirical evidence of state-level performance, which holds significance for comparative policy assessment, inter-state benchmarking, and the design of targeted interventions to enhance apprenticeship participation. The data for Andhra Pradesh and Telangana is combined as well the data for Kerala and Lakshadweep at the source.

4.7.1 Top ten States by share of apprentices under NATS (FY 2019-20 to 2024-25)

Fig. 4.17 shows that apprenticeship engagement under NATS is highly concentrated in a few states, with Maharashtra and Tamil Nadu alone accounting for over one-third of the national total. West Bengal also emerges as a significant contributor, bringing the combined share of the top three states to more than half of all apprentices engaged nationally. Odisha, with 1,19,747 apprentices, contributes 8.52%, and Haryana engages 96,872 apprentices, representing 6.89% of the total, demonstrating significant regional variation in scale.

As per the combined data at source, Andhra Pradesh and Telangana contribute 72,665 apprentices (5.17%), followed by Karnataka (65,325; 4.65%), Uttar Pradesh (64,567; 4.59%), and Gujarat (47,217; 3.36%). These figures illustrate that while a few states account for a substantial share of national apprenticeship engagement under NATS, engagement is uneven across the country.

4.7.2 Bottom ten States by share of apprentices under NATS

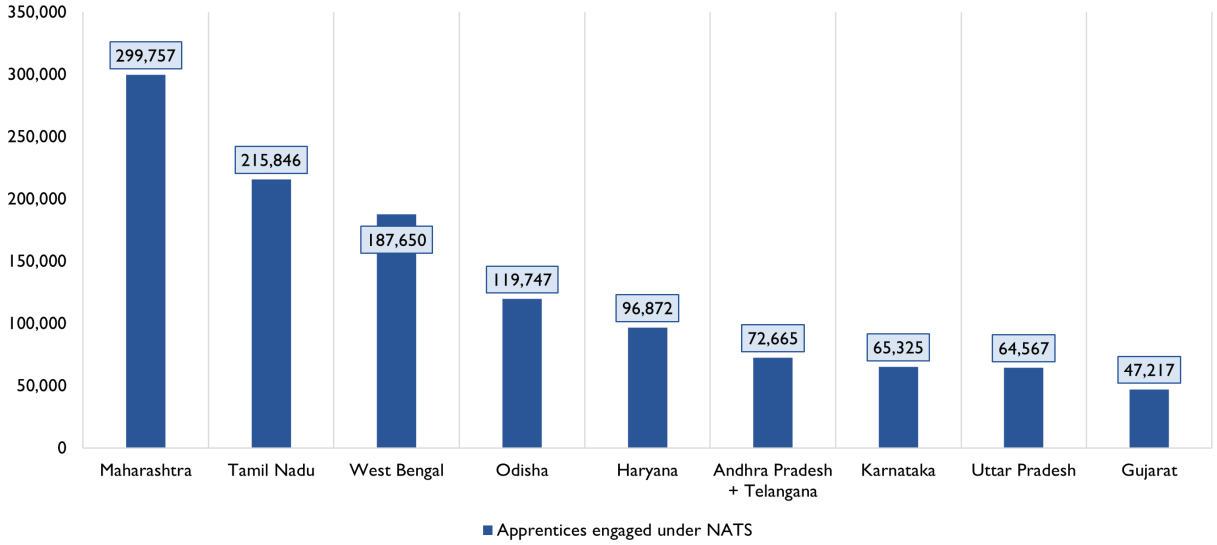
The data (Fig. 4.18)[8] from FY 2019-20 to 2024-25 on the bottom ten States in terms of apprentices engaged under NATS reveals critical insights into regional disparities and growth dynamics.

Fig. 4.18 on the bottom ten States in apprentice engagement under NATS highlights significant inter-state disparities in participation and outreach of the programme. Kerala, along with Lakshadweep, despite

[7] September 2025

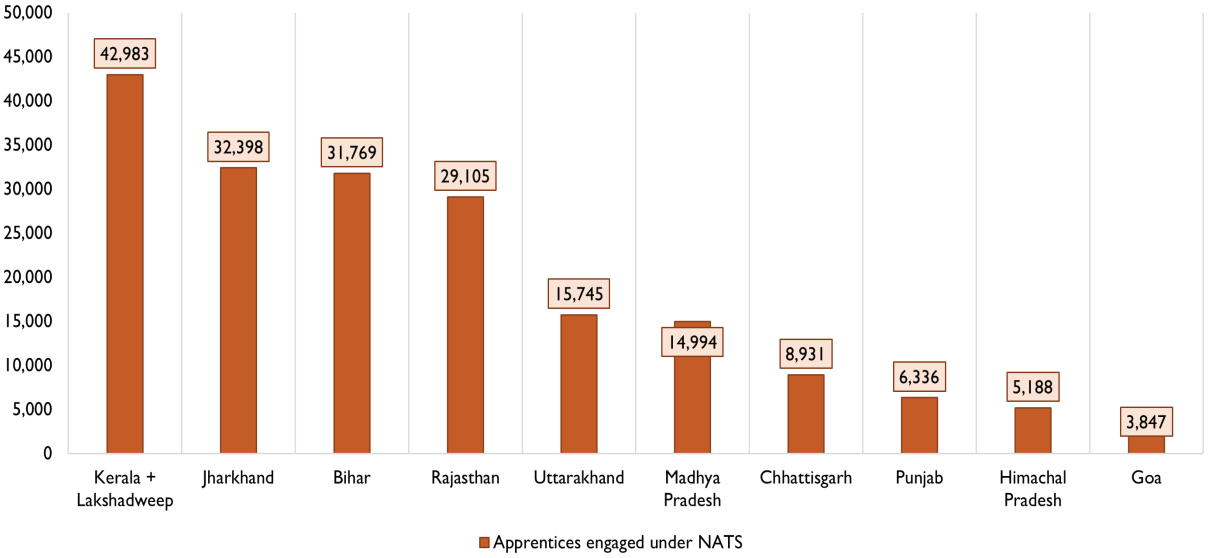
[8] Data for Kerala and Lakshadweep is combined in Fig. 4.18 and Fig. 4.21 (3.10% share of both in India)

Fig. 4.17 Top 10 States in Apprentices Engaged under NATS
(Cumulative from FY 2019-20 to 2024-25)



(Source: National Apprentice Training Dashboard, as on 25 April 2025)

Fig. 4.18 Bottom 10 States in Apprentices engaged under NATS
(Cumulative from FY 2019-20 to 2024-25)

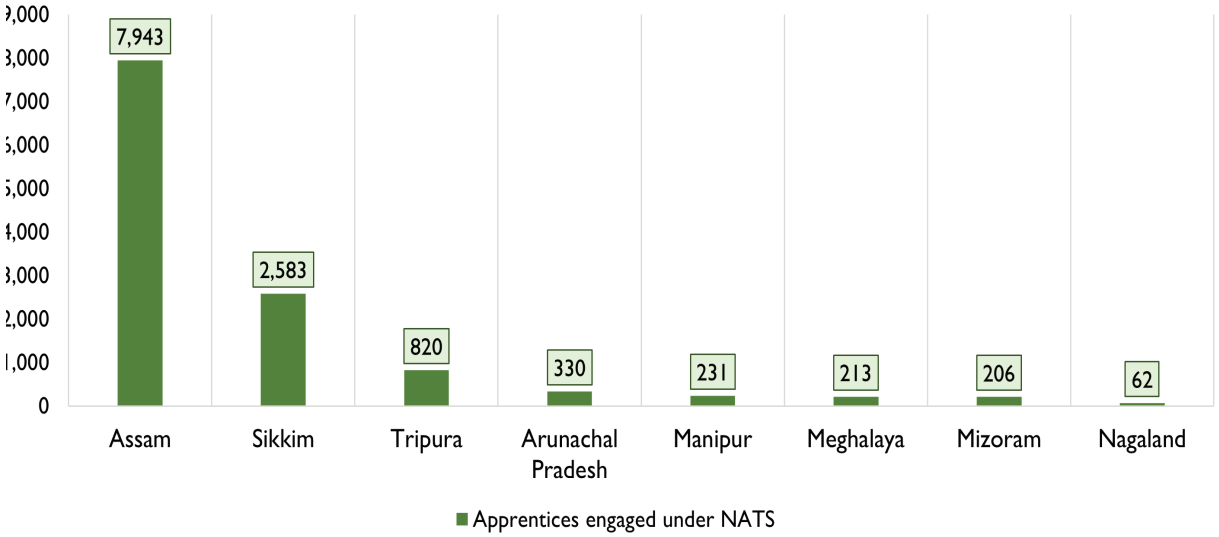


(Source: National Apprentice Training Dashboard, as on 25 April 2025)

being at the top of this lower segment, accounts for only 3.06% of all India engaged, while States like Goa, Himachal Pradesh, and Punjab contribute less than 0.5% each. Large States such as Bihar, Jharkhand, and Madhya Pradesh also appear in this group.

This distribution shows that apprentice engagement is concentrated in a few leading States, while a considerable number of States remain underrepresented. Analysing these figures can help identify regions requiring targeted capacity building, stronger industry linkages, and increased institutional outreach. It also points to the need for differentiated strategies, as challenges in industrialised states may differ significantly from those in smaller States or Union Territories with lower industrial bases. Overall, this comparison provides a valuable evidence base for allocating resources, designing state-specific interventions, and achieving more balanced growth in skill development outcomes under NATS.

Fig. 4.19 Apprentices engaged under NATS in Northeast States
(Cumulative from FY 2019-20 to FY 2024-25)



(Source: National Apprentice Training Dashboard, as on 25 April 2025)

4.7.3 Performance of Northeastern States

The Fig. 4.19 on Northeastern States' participation in NATS (FY 2019-20 to 2024-25) reveals stark disparities and mixed growth patterns.

The analysis of apprenticeship engagement under NATS in the NER reveals the region's comparative contribution to the national apprenticeship ecosystem, both in terms of absolute engagement numbers and percentage share of the all-India total. Assam leads the region with 7,943 apprentices engaged, accounting for 0.57% of the national total, which highlights its comparatively stronger industrial and training infrastructure. Sikkim follows with 2,583 apprentices, contributing 0.18%, reflecting its focus on skill development despite geographical constraints. Other States, including Tripura, Arunachal Pradesh, Manipur, Meghalaya, and Mizoram, show minimal engagement levels, each contributing less than 0.1% to the national total, underscoring persistent challenges in industrial outreach and apprenticeship implementation. Nagaland's engagement is the lowest at only 62 apprentices (0.004%), highlighting a stark gap in institutional capacity and employer participation.

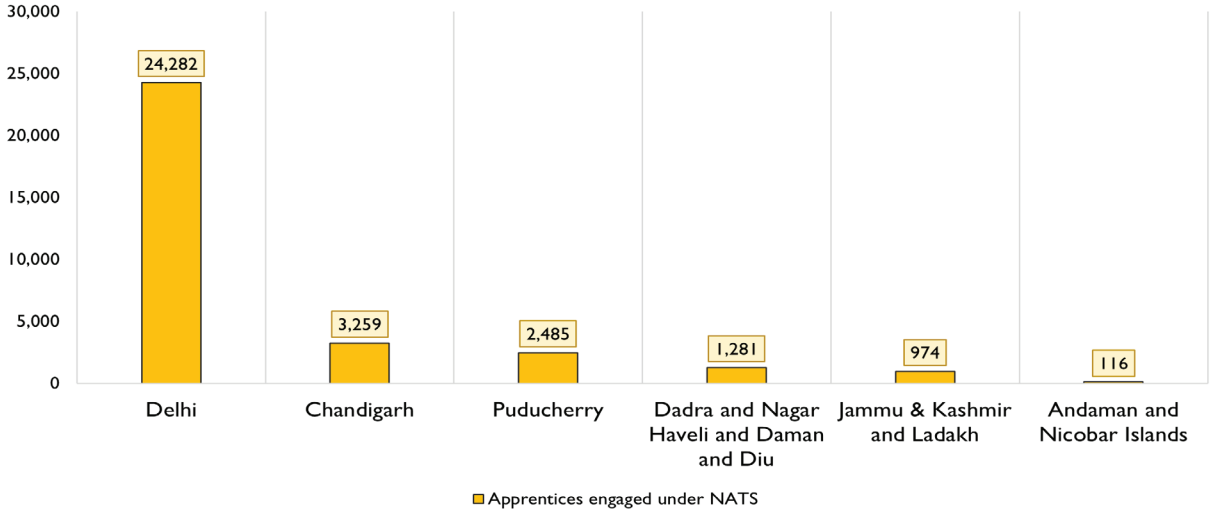
4.7.4 Performance of UTs

The Fig. 4.20 shows the number of apprentices engaged under NATS across the UTs of India (FY 2019-20 to 2024-25).

The engagement of apprentices under NATS in UTs reflects a highly concentrated distribution, with Delhi emerging as the dominant contributor. Delhi, with 24,282 apprentices engaged (1.73% of the all-India total), significantly outperforms other UTs, benefitting from its dense industrial base and concentration of higher education institutions that facilitate apprenticeship linkages. Chandigarh follows distantly with 3,259 apprentices (0.23%), while Puducherry records 2,485 apprentices (0.18%), both reflecting moderate engagement levels relative to their smaller economic and industrial ecosystems.

Smaller UTs, such as Dadra and Nagar Haveli and Daman and Diu (1,281 apprentices, 0.09%) and Jammu & Kashmir and Ladakh (974 apprentices, 0.07%),

Fig. 4.20 Apprentices engaged under NATS in Union Territories (Cumulative from FY 2019-20 to FY 2024-25)



(Source: National Apprentice Training Dashboard, as on 25 April 2025)

demonstrate limited participation, which may indicate structural constraints such as weaker industry presence and fewer training institutions. Andaman and Nicobar Islands, with only 116 apprentices (0.01%), illustrate the lowest engagement nationally, highlighting geographic isolation and infrastructural limitations.

4.8 Trends in apprentices engaged under NATS among States/UTs in last five years

The ranking trends of States and UTs in apprenticeship engagement under NATS between 2020–21 and 2024–25 reveal both stability among leading states and variation among mid- and lower-ranking regions.

Tamil Nadu and Maharashtra maintain consistent top-tier positions, with Tamil Nadu occupying first or second rank across all five years and Maharashtra holding the first rank from 2022–23 onwards, demonstrating sustained leadership in apprenticeship absorption. West Bengal and Odisha also display stable performance, ranking within the top five consistently, highlighting effective engagement strategies. Several States exhibit upward mobility in engagement rankings, reflecting improvements in programme implementation or industry participation. Andhra Pradesh and Telangana rise from the 10th position in 2020–21 to the 5th position in 2024–25, while Haryana improves from 8th to 4th. Kerala and Lakshadweep maintain moderate but steady performance, consistently ranking between 9th and 11th.

Northeastern States, including Arunachal Pradesh, Mizoram, Meghalaya, and Nagaland, remain at the lower end of the rankings. Manipur shows notable fluctuations, dropping to the 33rd position in 2023–24 before rising back to 28th in 2024–25. Jharkhand and Bihar demonstrate variable performance, with Jharkhand moving from 5th to 13th and Bihar from 14th to 10th over the period. Smaller UTs such as Andaman and Nicobar Islands and Dadra and Nagar Haveli and Daman and Diu generally occupy the lowest ranks.

4.9 Proportion of apprentices engaged under NATS in each State/UT

Fig. 4.21[9] shows a snapshot of apprentice engagement under NATS based on cumulative data from FY 2016–17 to FY 2024–25 across States/UTs. It reveals substantial inter-State variation in participation, both in terms of total numbers and percentage

[9] Combined data published at source (NATS Dashboard) for Kerala and Lakshadweep, Jammu & Kashmir and Ladakh (formed after 2019) is combined in Fig. 4.18, 4.20, 4.21 and 4.24.

share of national engagement. The cumulative engagement of apprentices under the National Apprenticeship Training Scheme (NATS) from FY 2016–17 to FY 2024–25 demonstrates a pronounced concentration among a few leading states, reflecting both industrial capacity and institutional efficiency. Maharashtra leads decisively, engaging 3,87,551 apprentices and accounting for 21.44% of the national total, followed by Tamil Nadu with 3,17,774 apprentices (17.58%) and West Bengal with 2,14,216 apprentices (11.85%). Odisha (1,60,924; 8.90%) and Haryana (1,17,487; 6.50%) complete the top five, together highlighting the apprenticeship engagement capacity of these States.

Other States with moderate contributions include Uttar Pradesh (92,119; 5.10%), Karnataka (89,534; 4.95%), Gujarat (59,196; 3.27%), Kerala[9] (55,984; 3.10%), and Telangana (51,834; 2.87%), reflecting effective but comparatively smaller-scale engagement. States/UTs such as Andhra Pradesh, Bihar, Jharkhand, Rajasthan, and Delhi contribute between 1.5% and 2% of total engagement, indicating limited participation relative to the national scale.

The remaining States, particularly those in the Northeastern Region, and UTs, contribute minimally, with Nagaland engaging only 64 apprentices (0.00%) and Andaman and Nicobar Islands engaging 163 apprentices (0.01%), highlighting persistent regional disparities. Collectively, the data underscore a skewed distribution in NATS engagement, with a few States accounting for the majority of apprentices and smaller or less industrialized regions contributing marginally.

4.10 Proportion of apprentices engaged under NAPS in each State/UT

The fig. 4.22 cumulative distribution of apprentices engaged under NAPS until FY 2024–25 demonstrates substantial concentration among a limited States, reflecting the uneven engagement of apprentices across the country. Maharashtra emerges as the clear leader, engaging 9,85,919 apprentices, which constitutes 26.10% of the all-India total, underscoring the State's robust apprenticeship ecosystem and strong industry participation. Other high-contributing States include Gujarat (4,32,146; 11.44%), Tamil Nadu (3,64,898; 9.66%), and Karnataka (3,05,469; 8.09%), which together with Maharashtra account for over half of the national cumulative engagement.

Mid-level contributors include Uttar Pradesh (2,79,516; 7.40%), Haryana (2,71,586; 7.19%), and Telangana (1,67,265; 4.43%), reflecting moderate efficiency in bridging registration and training uptake. West Bengal (1,12,905; 2.99%), Madhya Pradesh (1,05,495; 2.79%), Andhra Pradesh (84,323; 2.23%), Uttarakhand (77,356; 2.05%), and Rajasthan (76,195; 2.02%) occupy intermediate positions, highlighting variable regional implementation outcomes.

States such as Punjab (64,757; 1.71%), Kerala (59,076; 1.56%), Odisha (48,065; 1.27%), Jharkhand (46,829; 1.24%), Assam (44,505; 1.18%), Himachal Pradesh (35,705; 0.95%), Goa (35,248; 0.93%), Bihar (25,458; 0.67%), and Chhattisgarh (24,908; 0.66%) collectively account for a small proportion of national engagement, indicating relatively limited scale and absorption capacity.

UTs contribute marginally to total apprentices engaged, reflecting both their smaller population and constrained industrial base. Puducherry leads among UTs with 10,114 apprentices (0.27%), followed by Dadra and Nagar Haveli (9,452; 0.25%) and Chandigarh (5,038; 0.13%). Jammu & Kashmir engages 4,348 apprentices (0.12%), Tripura 2,129 (0.06%), and Sikkim 1,537 (0.04%).

Remaining States and UTs, including Meghalaya (944; 0.02%), Manipur (354; 0.01%), Andaman & Nicobar Islands (300; 0.01%), Arunachal Pradesh (194; 0.005%), Mizoram (171; 0.005%), Ladakh (168; 0.004%), Nagaland (103; 0.003%), and Lakshadweep

Table 4.2 Rank of each State/UT in Apprentices Engaged under NATS from FY 2020-21 to 2024-25					
State/UT	2024-25	2023-24	2022-23	2021-22	2020-21
Maharashtra	1	1	1	1	2
West Bengal	2	2	4	4	4
Tamil Nadu	3	3	2	2	1
Haryana	4	4	6	9	8
Andhra Pradesh and Telangana	5	8	7	8	10
Odisha	6	5	3	3	3
Karnataka	7	7	8	6	6
Uttar Pradesh	8	6	5	5	9
Kerala + Lakshadweep	9	10	10	11	11
Bihar	10	12	11	17	14
Gujarat	11	9	9	7	7
Rajasthan	12	11	12	16	17
Jharkhand	13	14	13	10	5
Delhi	14	13	14	12	13
Uttarakhand	15	17	15	18	18
Madhya Pradesh	16	16	17	14	15
Himachal Pradesh	17	19	21	20	19
Chhattisgarh	18	20	16	15	12
Chandigarh	19	21	24	27	26
Punjab	20	15	22	22	21
Assam	21	18	18	13	16
Goa	22	22	19	19	20
Puducherry	23	24	20	23	23
Sikkim	24	23	23	21	22
Dadra and Nagar Haveli and Daman and Diu	25	26	26	25	24
JandK and Ladakh	26	25	27	30	30
Tripura	27	27	25	24	27
Manipur	28	33	31.5	28	28
Mizoram	29	29	29	31	32
Nagaland	30	32	33	33	33
Meghalaya	31	28	31.5	29	29
Andaman and Nicobar Islands	32	30	30	32	31
Arunachal Pradesh	33	31	28	26	25
Union Territories		Northeast States			

(Source: National Apprentice Training Dashboard, as on 25 August 2025)

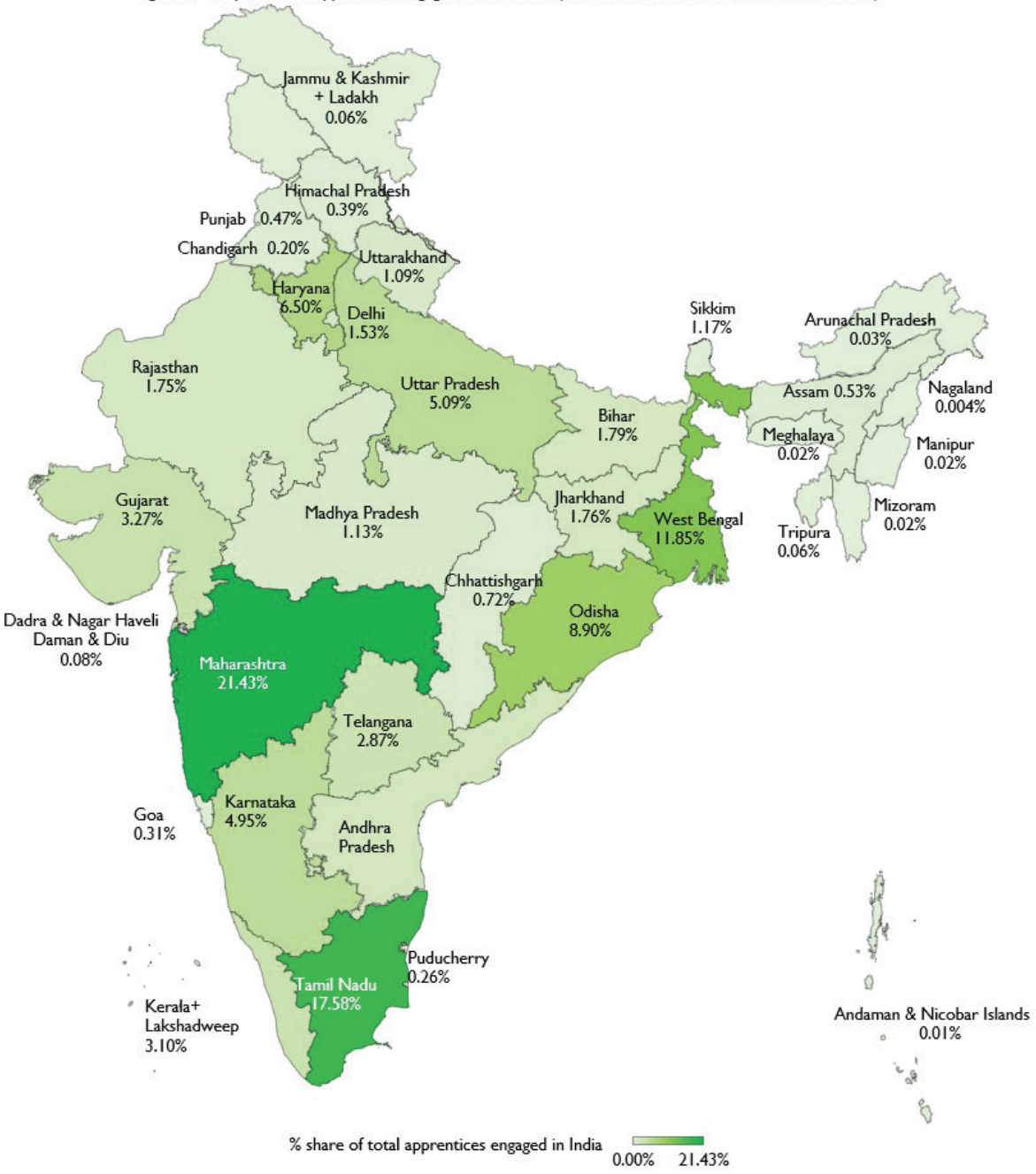
(45; 0.001%), collectively contribute a small share, highlighting persistent disparities in apprenticeship engagement.

Overall, the data underscores a pronounced concentration of NAPS engagement in industrially advanced States, moderate participation in mid-tier States, and minimal engagement in smaller States and UTs, pointing to several factors influencing apprenticeship uptake across India.

4.11 Comparative analysis of NAPS and NATS among apprentices engaged

A comparative assessment (fig 4.23 and 4.24) of apprenticeship engagement under NAPS and NATS reveals both convergence and divergence in the performance of States and Union Territories. Industrially advanced states such as Maharashtra, Gujarat, Tamil Nadu, Karnataka, and Haryana consistently occupy the top positions in both schemes,

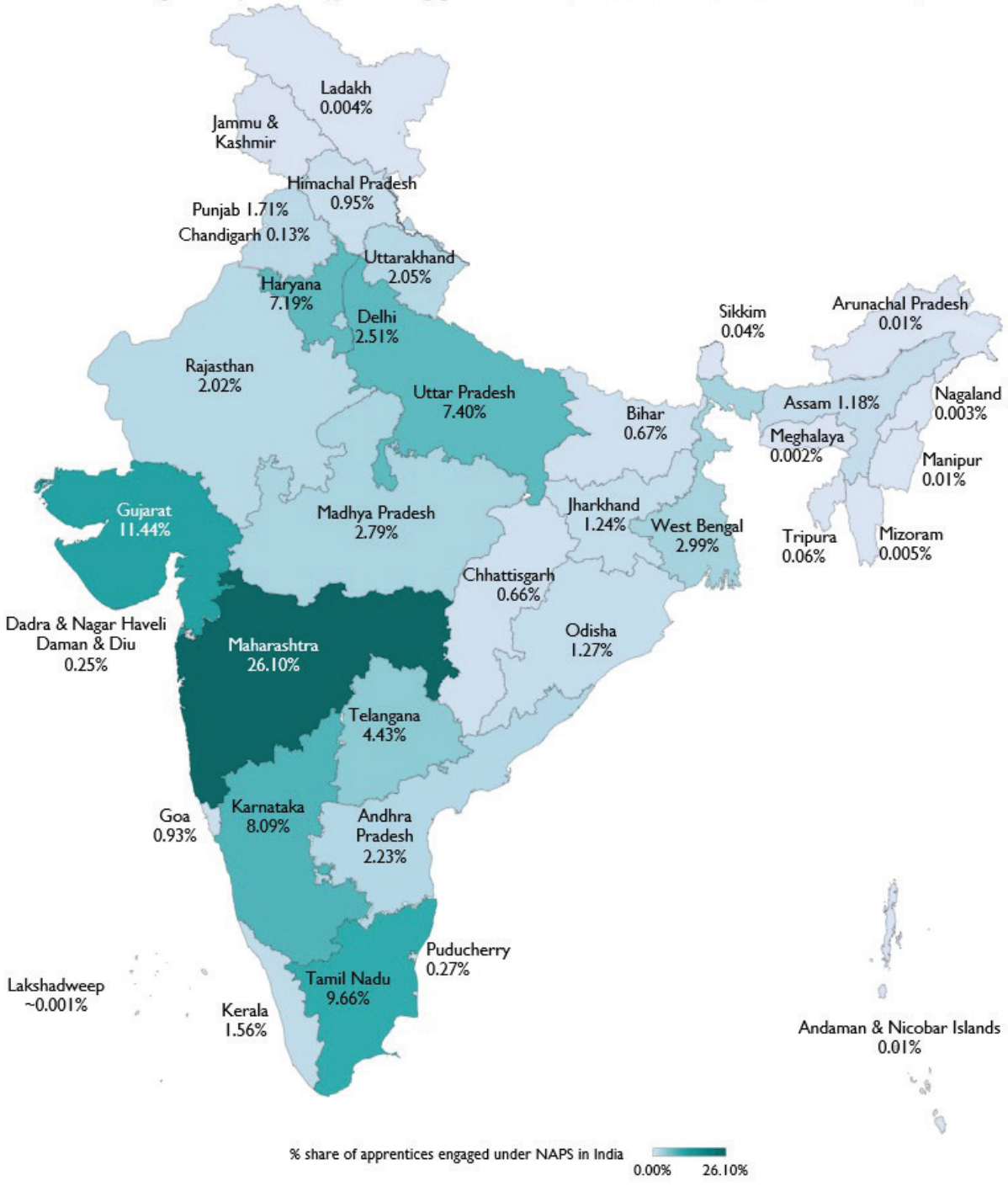
Fig. 4.21 Proportion of Apprentices engaged under NATS (Cumulative from FY 2016-17 to FY 2024-25)



indicating that strong institutional frameworks, industry absorption capacity, and well-established apprenticeship linkages allow these States to maintain leadership irrespective of the scheme modality. These States demonstrate high relative efficiency, translating registrations into meaningful engagement, and their dominance is evident across multiple years.

Mid-tier States, including Uttar Pradesh, Telangana, West Bengal, Madhya Pradesh, Andhra Pradesh, Rajasthan, and Punjab, generally hold moderate ranks in both schemes. However, relative differences emerge in some cases: certain states perform better under NATS than NAPS, whereas others exhibit stronger relative positioning under NAPS. States such as Bihar, Jharkhand, Chhattisgarh, and Himachal Pradesh, consistently remain at the lower tier in both schemes.

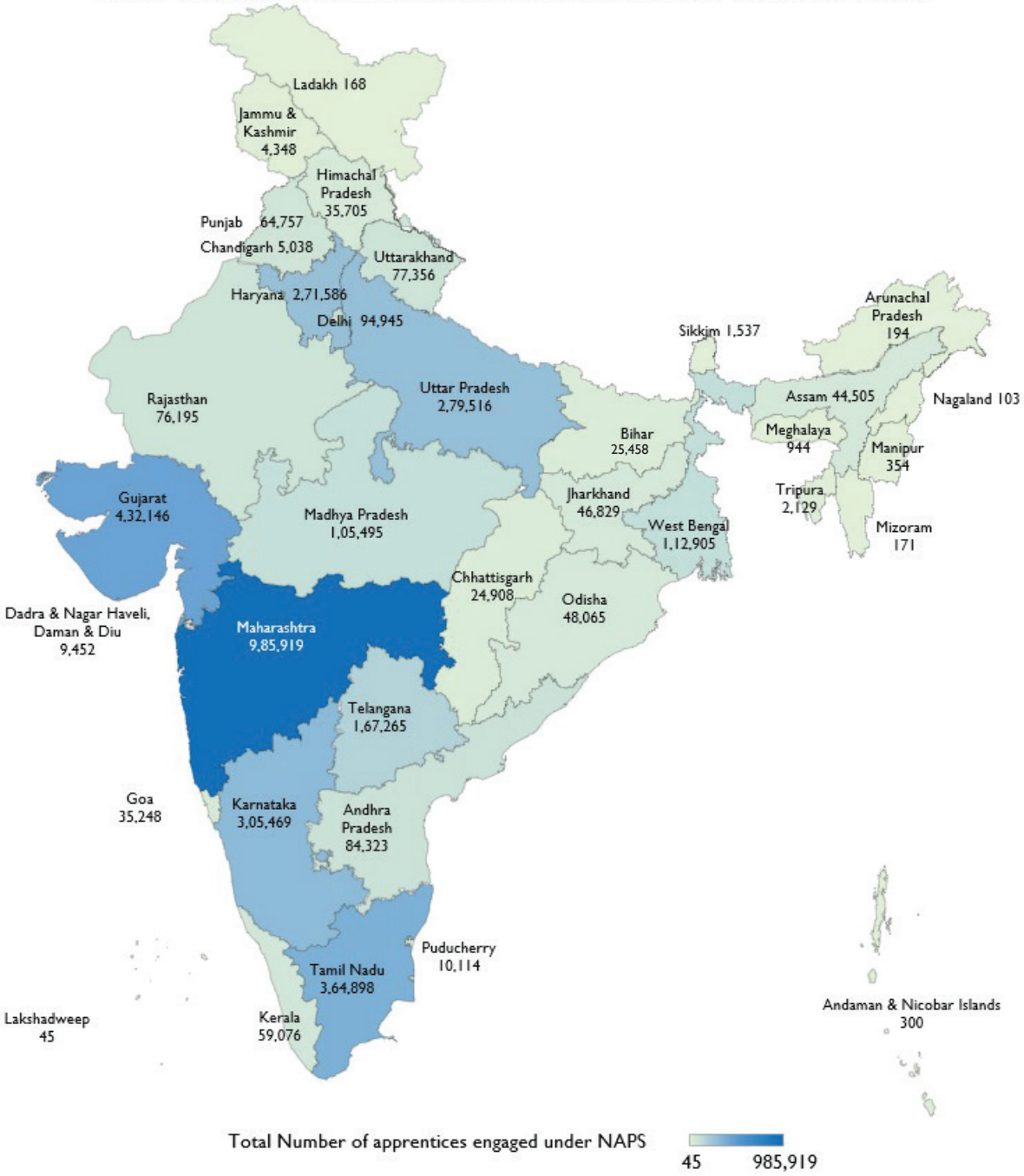
Fig. 4.22 Proportion of apprentices engaged under NAPS (Cumulative from FY 2018-19 to FY 2024-25)



Union Territories generally mirror their relative positions across both schemes. Delhi consistently ranks highest among UTs, reflecting a relatively mature industrial and training ecosystem. Puducherry, Dadra and Nagar Haveli, and Chandigarh maintain mid-tier positions relative to other UTs, while smaller territories such as Andaman & Nicobar Islands, Lakshadweep, and Ladakh remain at the bottom in both schemes, with negligible shifts in rank. This suggests that structural constraints, such as limited industrial presence and small population size, dominate over scheme-specific differences.

The North Eastern States exhibit a distinct pattern. Assam occupies a relatively

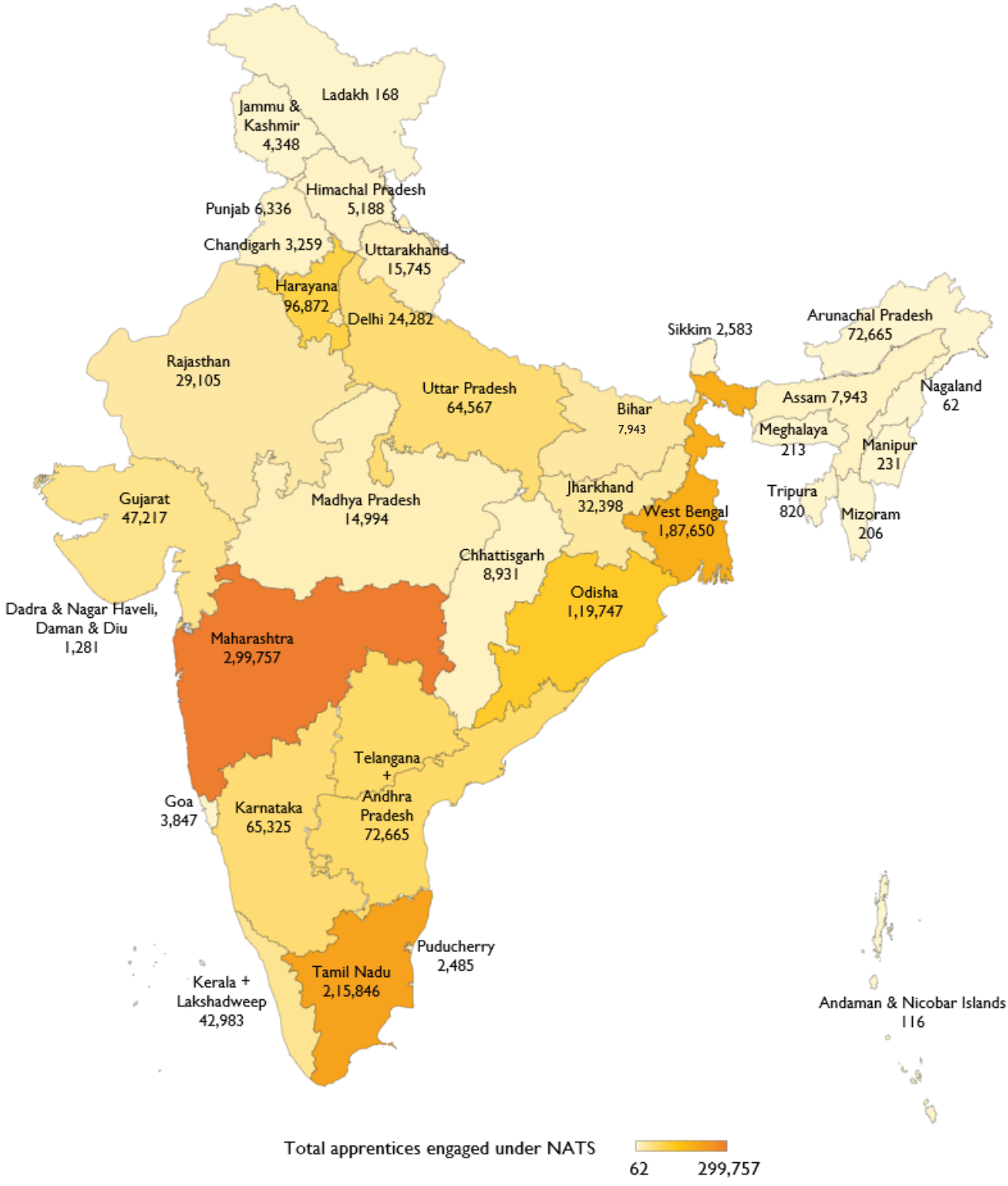
Fig. 4.23 Number of Apprentices Engaged under NAPS (Cumulative from FY 2018-19 to FY 2024-25)



higher position among the region's States in both NAPS and NATS, while other States such as Tripura, Sikkim, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, and Nagaland consistently remain near the bottom nationally. Their relative positions across schemes show minimal variance.

Overall, while top-performing and bottom-tier states largely retain their relative positions across both NAPS and NATS, mid-tier States and UTs show some scheme-specific variation, reflecting the influence of local industrial ecosystems, programme design, and operational effectiveness. The comparison underscores that scheme-specific factors can slightly alter relative engagement positions, but structural and regional determinants remain dominant in shaping overall apprenticeship outcomes.

Fig. 4.24 Number of Apprentices Engaged under NATS (Cumulative from FY 2016-17 to FY 2024-25)



Conclusion

This chapter has presented an empirical analysis of the trends and patterns observed under NAPS and the NATS from FY 2018–19 to FY 2024–25. The analysis has focused on establishment-level participation, apprenticeship engagement, and training completion across States, UTs, and special geographies such as Aspirational Districts and NER. The findings indicate significant variations in the extent to which registered establishments have transitioned into active engagement under NAPS, suggesting differential levels of operational uptake across States.

With respect to apprenticeship engagement, the data reveals that Maharashtra, Gujarat, and Tamil Nadu, which account for a substantial share of the national apprentice pool are the leading States. However, high engagement levels do not necessarily correspond to high training completion rates. States such as Dadra and Nagar Haveli, Assam, Odisha, Kerala, and Jharkhand have recorded consistently higher completion rates, whereas some high-engagement States have reported lower-than-average training completion. This divergence between engagement volume and completion rate highlights inefficiencies in the apprenticeship lifecycle across different geographies.

Furthermore, the analysis of special districts indicates modest yet uneven progress. While targeted interventions have facilitated increased registrations in several Aspirational Districts and parts of the NER, overall engagement and completion remain limited. The share of apprentices from these regions in the national completion pool is comparatively low, underscoring the need for sustained institutional and industrial engagement to enhance participation and outcomes.

Collectively, these insights reflect substantial spatial disparities in the implementation and effectiveness of apprenticeship programmes. While India's apprenticeship ecosystem under NAPS and NATS has made commendable progress in terms of outreach and institutional participation, regional imbalances persist. High-volume States must improve training completion, while low-engagement regions, particularly in the NER and special districts, require targeted support to enhance scale without compromising on quality.

The analysis on establishment activation, apprentice engagement, and training completion rates across States/UTs and districts indicates the complexity of the apprenticeship ecosystem in India. The evidence presented in this chapter lays a foundation for the subsequent discussion on the key challenges in the apprenticeship ecosystem. The next chapter critically examines these challenges through the lens of stakeholder consultations.

5

Stakeholder Consultations

5.1 Introduction

As part of this study, a series of stakeholder consultations were undertaken with representatives from industry bodies, government agencies, skill development experts, State officials, and multilateral organizations. The sectoral challenges, best practices, and policy recommendations presented in this report are substantially based on the insights gained from these discussions.

5.2 Stakeholder discussion on apprenticeship with Industry Representatives

The first stakeholder consultation was held on 9th September 2024 with industry experts, organized by the SDE Division of NITI Aayog. The consultation aimed to evaluate the current state of apprenticeship schemes in India and to explore actionable pathways for strengthening the education-to-employment (E-to-E) transition, particularly through enhanced industry participation. Industry stakeholders emphasized the need for a unified, integrated portal and pathways for vertical and horizontal mobility for candidates to move between skill training and education.

Another point of discussion was the lack of awareness regarding apprenticeship schemes such as NAPS and NATS. Both students and employers, especially in some States with lower apprenticeship participation, were reported to have limited knowledge of these schemes and the opportunities they offer. This awareness gap was seen as a major barrier to increased participation in apprenticeships across sectors.

The industry consultation underscored the importance of digital integration, stakeholder awareness, and coordinated policy support for improving apprenticeship outcomes. Insights from this discussion informed the broader set of recommendations presented in this report, particularly concerning digital infrastructure, outreach strategies, and systemic reforms to facilitate a smoother E-to-E pathway. A complete list of participants and snapshots from the meeting are included in Annexure 1.

5.3 Roundtable on strengthening apprenticeship training

SDE Division of NITI Aayog, organized a multi-stakeholder roundtable discussion on 18th February 2025 chaired by Dr. Arvind Virmani, Member, NITI Aayog. The roundtable served as a platform for engagement among representatives from government bodies, industry, SSCs, international organizations, and academia. The primary objective was to deliberate upon key challenges and emerging opportunities within India's apprenticeship ecosystem.

States presented notable best practices. Gujarat was acknowledged for its financial incentives and transport support mechanisms. Maharashtra shared its proposals for legal amendments to scale up apprenticeship implementation. Tamil Nadu highlighted its National Skills Qualifications Framework (NSQF)-aligned training models and commendable placement outcomes.

Recommendations from industry and SSCs focused on enhancing digital portals and promoting apprentice engagement through CSR-linked incentives and MSME-oriented models.International perspectives contributed insights on the importance of quality assurance in apprenticeship standards, inclusive participation of women, and structured trainer development initiatives.

The roundtable concluded with policy recommendations aimed at strengthening implementation. These included consolidating digital platforms, increasing stipends, expanding sectoral and regional coverage, and developing robust monitoring and evaluation frameworks.

The complete list of participants and select snapshots from the roundtable are provided in Annexure 2.

5.4 State Consultation for Strengthening Apprenticeship

The third stakeholder consultation on strengthening apprenticeship training was held on 16th April 2025 with representatives from SSDMs. The consultation was chaired by Programme Director (SDE), NITI Aayog. The primary objective of this engagement was to gather state-level insights and implementation experiences to inform the revitalization of India's apprenticeship ecosystem.

The consultation began with a national overview covering the NAPS, NATS, and the roles of various stakeholders. The discussion was structured around eight guiding questions addressing implementation challenges, identification of best practices, gender inclusion, MSME participation, and employment outcomes post-apprenticeship.

The perspectives shared by participating States, including Telangana, Andhra Pradesh, Delhi, Uttar Pradesh, Karnataka, Odisha, Madhya Pradesh, Assam, Jharkhand and Haryana, provided valuable, implementation-focused insights. These contributions have played a critical role in shaping the analysis and policy recommendations in this report. The consultation ensured that the voices of state-level actors were meaningfully integrated into the development of a robust, responsive, and inclusive apprenticeship policy framework.

A complete list of participants and snapshots from the meeting are included in Annexure 2.

6

Unpacking the Roadblocks: Challenges in India's Apprenticeship Ecosystem

6.1 Introduction

India's apprenticeship ecosystem stands at a critical juncture as the country aims to equip its burgeoning youth population with industry relevant skills and bridge the gap between education and employment. Despite multiple policy interventions and initiatives by different stakeholders such as Central and State Governments, industry and employers several challenges continue to affect the scale and effectiveness of the apprenticeship programme. There is an immense potential to leverage and strengthen the apprenticeship model in India, which is globally recognized for its ability to create a skilled workforce through experiential and on-the-job learning.

Several key challenges were identified based on the analysis as detailed in the previous chapters and extensive consultations with multiple stakeholders such as representatives from Central and State Governments, ministries and departments, industry leaders, experts from international organizations, and academia. This chapter outlines these challenges by categorizing them into five pillars viz. policy and system related, structural and regulatory, region specific, industry/employer-related, and challenges from the perspective of aspirants and apprentices.

By unpacking these roadblocks, this report seeks to provide an understanding of the existing bottlenecks and suggest pathways for revitalizing India's apprenticeship framework to meet the demands of the rapidly evolving labour market.

6.2 Policy and Systemic Challenges

6.2.1 Multiplicity of schemes and processes

As discussed in chapter two of the report, the apprenticeship ecosystem includes different Central and State Government initiatives, target groups, norms, modalities, and diverse institutional arrangements. This may lead to the creation of multiple brands and processes for both employers and candidates.

6.2.2 Low apprenticeship stipend

Stakeholders were of the view that the overall stipend amounts received by apprentices from employers remain low. As the cost of living rises, many apprentices may find that their earnings are insufficient to cover basic expenses, making apprenticeship opportunities less attractive.

6.2.3 Potential for smaller establishments to engage apprenticeships

Stakeholder discussions indicated that smaller and medium sized establishments are often not aware of apprenticeship schemes and initiatives. To scale up apprenticeship adoption, smaller/medium sized establishments could be made aware and incentivised through distinct awareness campaigns/initiatives.

6.2.4 Need for mobility pathways and integration between apprenticeships and education

Since apprenticeships provide experiential and on-the-job training, linkages between apprenticeships and education are important. Multiple entry and exit pathways for a candidate can ensure that a person undergoing academic education has the option to transition to apprenticeship and for an apprentice or a skilled candidate to come back to mainstream education at any point in time. Initiatives like the NCrF and Apprenticeship Embedded Degree Programme (AEDP) are important in this regard and need to be implemented across education and skilling institutions.

6.3 Structural and Regulatory Challenges

6.3.1 Need for standardization of certification

Both designated and optional trades under NAPS have a different certification process. Designated Trades are specifically notified by DGT and have fixed standards for training and certification. Certification for designated trades is regulated and awarded under the official apprenticeship portal. The certificate for optional trades is awarded after the completion of employer-designed or sector skill council-approved training, and is distinct from designated trade certification. Stakeholders were of the view that standardization of certification norms may help further streamline the process and enhance the value of the apprenticeship certificate.

6.3.2 Improving availability of Data

Enhancing the granularity and accessibility of data under both the NAPS and NATS scheme is critical for strengthening evidence-based policy formulation and sectoral analysis across geographies. Despite being one of the older components of the apprenticeship ecosystem, NATS continues to face limitations in terms of data availability.

6.3.3 Improving training quality at the ITIs

A large number of candidates take up apprenticeships after training at ITIs. The infrastructure and facilities at both Government and Private ITIs can be upgraded to cater to changing demands of industry and the job market. The National Scheme for ITI Upgradation is a significant step in this regard.

6.4 States/UTs and special district specific challenges

6.4.1 Leveraging DSCs in apprenticeship programme

The District Skill Committees (DSCs) set up by MSDE under SANKALP form the backbone for localized skill development. DSCs can help strengthen district-driven apprenticeship ecosystem which can effectively address regional employment and skill challenges.

6.4.2 Need to address State-wise disparity in participation of establishments under NAPS

The state-wise data on AEs under the Apprenticeship Scheme in FY 2024–25 reveals a stark regional disparity, with Gujarat (24.18%) and Maharashtra (17.80%) alone accounting for about 42% of total active participation. In contrast, several States and UTs, including North East States like Nagaland (0.004%), Manipur (0.006%), and Arunachal Pradesh (0.01%), as well as UTs like Lakshadweep (0.002%) and Andaman & Nicobar Islands (0.03%), contribute negligibly to the scheme (Refer Map 4.1). While industrialized States have higher rates of apprenticeship engagement, low participation from other regions indicates several bottlenecks that require deliberate interventions from all stakeholders.

6.4.3 Low active to registered establishment ratio among States/UTs

Fig. 4.3 on the percentage of AEs from registered ones in FY 2024–25 indicates a trend of underutilization of the apprenticeship framework. While some States/UTs like Delhi (60.93%), Goa (50.88%), and Gujarat (44.92%) show high registered to active establishment rates,

others such as Bihar (3.91%), Manipur (3.57%), and Chhattisgarh (5.17%) indicate a disconnect between registration and actual implementation of apprenticeships. This mismatch reflects a key challenge: a large number of REs are not translating into active apprenticeship opportunities.

6.4.4 Regional disparities among States/UTs in apprentices' engagement and completion

While States like Maharashtra and Gujarat have high numbers of apprentices engaged and completed training, the highest completion rate out of those engaged among apprentices under NAPS is in States like Manipur (84.46%), Chhattisgarh (75.35%), etc. The distribution of apprentices in India indicates a concentration of apprenticeship engagement in a few States, while a large number of States and UTs account for marginal shares.

6.4.5 Apprenticeship participation in special districts

The share of total apprentices from FY 2019 to FY 2025 by special districts (Fig. 4.16) and completion rates, reveals a persistent and multifaceted challenge of achieving balanced and sustained growth in apprenticeship engagement across all regions. Significant disparities remain, with Aspirational Districts consistently outperforming others, while NER and Tribal Districts continue to lag with minimal participation. LWE affected and Border Districts face stagnant or declining shares, reflecting structural, and socio-economic barriers that hinder broader engagement. These trends highlight the difficulty of uniformly scaling up apprenticeship programmes.

6.5 Industry and Employer Challenges

6.5.1 Lower ratio of Active Establishments under NAPS

The analysis of NAPS data reveals 51,133 active establishments, which are 26.10% of the total registered establishments. This indicates that despite robust registration numbers, a significant proportion of firms remain inactive.

6.5.2 Potential for Greater Participation of MSMEs

MSMEs, despite their significant role in employment and output, MSMEs show inconsistent and limited participation in NAPS. Micro and small enterprises collectively constitute over one-third of active establishments (33.20%) but engage only 11.56% of apprentices. Medium enterprises, representing 19.14% of establishments, engage 31.30% of apprentices, indicating relatively balanced participation. Key constraints include low awareness, limited HR capacity, compliance burden, and inadequate infrastructure (FICCI, 2019). Large firms also show declining engagement, from 55% in 2014–19 to 15.70% in 2022-23, rising again to engaging 35.51% of apprentices, suggesting underutilization of capacity. Stronger MSME integration and renewed large-firm participation would be the key to scaling up apprenticeships.

6.5.3 Start-ups in India's apprenticeship ecosystem

There is potential to incorporate start-ups in the apprenticeship ecosystem. Early-stage start-ups can be provided support and motivation to engage apprentices.

6.5.4 Industry perception on Low "Return on Investment"

A major barrier to widespread adoption of apprenticeship programmes by employers is the prevailing perception of low return on investment, as cited by employers (TeamLease, 2024). Industries, especially MSMEs, often view apprentices as an additional cost rather than a productive resource due to the time and effort required for training, supervision, and compliance. Another concern, especially for MSMEs, is the poaching of trained candidates after the completion of apprenticeship. As a result, many firms either refrain from participating in apprenticeship schemes or engage only minimally.

6.5.5 Need for greater alignment with industry needs

In general, the need for greater alignment of vocational and apprenticeship programmes to industry requirements was highlighted. Various industry stakeholders observed that graduates of skilling programmes often lack job-ready skills, requiring companies to invest in re-training even after certification. This disconnect may weaken the employability of young workers.

6.5.6 Addressing barriers related to technological and digital access

Digitalization of apprenticeship registration and tracking processes, as well as DBT for Government stipend contribution are major advancements in the apprenticeship ecosystem. Lack of access to internet devices such as smartphone, particularly for candidates from rural and underserved regions, multiple user interfaces, and lack of clarity around procedural steps could create obstacles during registration and on boarding. These barriers could be overcome through provision of user support, digital access, grievance redressal mechanisms, and regional language accessibility for the target population. The need for a robust integrated platform (in multiple languages with AI assistance) that is easy to access and use for participating enterprises, government, and prospective apprentices was emphasized by the stakeholders in the discussions.

6.6 Apprentice and Aspirant Challenges

6.6.1 Low completion rates of apprentices

While engagement levels have improved substantially, completion rates of apprenticeships need improvement. Some of the reasons mentioned in the NILERD (2019) report for low seat utilization under NATS included aspirant perception of no job guarantee after completion of training, low stipend as cost of living in the cities is high, and non-availability of training in the areas near their residence (NILERD, 2019).

6.6.2 Low participation of women in apprenticeships

Women face a multitude of challenges in accessing and participating in skill training through ITIs and apprenticeship programmes, as is evident from their lower rates compared to men in registration, engagement and completion. According to NILERD Report (2019) women constitute only 20% of the total apprentices under NATS. Female trainees often face a dual burden of household responsibilities and training commitments, leading to high dropout rates, recorded at an average of 23%. Financial barriers further compound the problem; high training fees, travel costs, and a preference among families to invest in sons' education over daughters restrict women's access to private ITIs and apprenticeship opportunities. To address these barriers, a multi-pronged strategy that includes gender-sensitive infrastructure, inclusive pedagogy, flexible training models, and stronger counselling and placement support is essential.

6.6.3 Limited awareness about international opportunities

Despite the growing recognition of vocational education, many young people still perceive it as less prestigious compared to academic routes. As pointed out in the stakeholder consultation, young aspirants may have limited exposure

to or awareness about international opportunities. Many aspirants are unfamiliar with foreign labour market requirements, face language and cultural barriers, and lack institutional backing for overseas placement. Stakeholders could together work on strengthening international apprenticeship pathways for connecting India's skilled workforce with global employment opportunities.

6.6.4 Need to strengthen career counselling and awareness

Youth are often unaware of the career pathways that apprenticeships can offer. Several stakeholders identified the need for structured counselling, mentorship, and placement support within ITIs, polytechnics, and higher education institutions. Lack of awareness regarding apprenticeship programmes and the benefits accruing from these programmes could be a key reason for slow adoption (FICCI, 2019). Counselling and guidance for students and candidates along the skilling lifecycle needs to be emphasised to create aspirations and help learners understand possible pathways.

6.6.5 Differentiating apprentices from regular employees

Another challenge in the apprenticeship ecosystem is the treatment of apprentices on par with regular employees in many workplaces, without commensurate benefits or protections. While apprentices are meant to be in a learning phase, they are often expected to deliver the same output as full-time employees, with little differentiation in workload or accountability. This undermines the core objective of apprenticeships as structured learning experiences and may discourage apprentices from completing the training.

Conclusion

This chapter has unpacked the challenges and helped identify barriers for strengthening apprenticeships in India. High dropout rates and low aspirations among youth need to be addressed through career counselling and awareness throughout the lifecycle of skilling. Lower female participation, though improving, reflects deep-rooted social and structural barriers. Regional disparities also need to be overcome and the potential of district planning and implementation can be leveraged. There is immense scope for more industries, including small and medium ones to engage apprentices.

Addressing these challenges requires a multi-pronged approach by different stakeholders. The next chapter seeks to build on this analysis by offering actionable recommendations aimed at overcoming roadblocks, thereby paving the way for a more robust, inclusive, and effectively revitalizing apprenticeship framework that aligns with the nation's aspirations for skill development and economic growth.

7

Building a Future-Ready Apprenticeship Framework: Key Recommendations

7.1 Introduction

As India accelerates its journey toward becoming a global economic powerhouse, the apprenticeship ecosystem must evolve to meet the demands of a rapidly changing workforce and industry landscape. The recommendations detailed in this chapter have emerged from the challenges identified in Chapter V and solutions proposed during the consultations held with Ministry representatives, State Government representatives, industry experts, SSCs and experts from academia and international organizations.

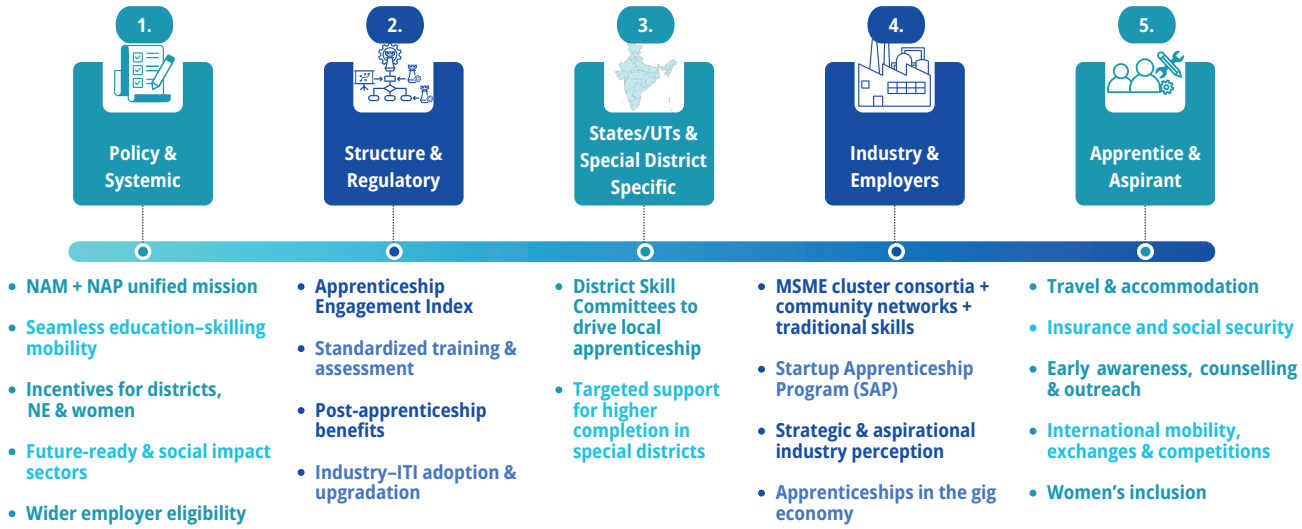
The recommendations are structured across five pillars named policy and system, structure and regulation, State and region specific, industry and employer engagement, and apprentice and aspirant empowerment. Examples of apprenticeship models in other countries and good practices by States and initiatives of the Central Government have also been highlighted.

The recommendations in the chapter place an emphasis on unifying and streamlining the country's diverse apprenticeship schemes. The recommendations suggest creating a single unified system, integrating apprenticeships with the startup ecosystem, and facilitating seamless transitions between education and skilling. These suggested initiatives could help the apprenticeship programme become more accessible, aspirational, and relevant to the evolving needs of both learners and employers.

The recommendations also focus on building robust mechanisms to support and monitor apprenticeship adoption and quality at every level. This includes the development of tools to benchmark performance across States and UTs, empowering local institutions such as District Skill Committees, and establishing district-level hubs to drive localized transformation.

For industry and employers, the recommendations in the chapter stress on deepening engagement and providing handholding support. This involves fostering greater participation from a diverse range of enterprises, including MSMEs, and enhancing the capacity of training institutions to meet the demands of strategic sectors. From the perspective of apprentices and aspirants, these recommendations suggest initiatives for clear pathways for mobility between skills and formal education, enhanced engagement and completion rates through holistic support to a candidate throughout his/her apprenticeship journey.

BUILDING A FUTURE-READY APPRENTICESHIP FRAMEWORK: KEY RECOMMENDATIONS



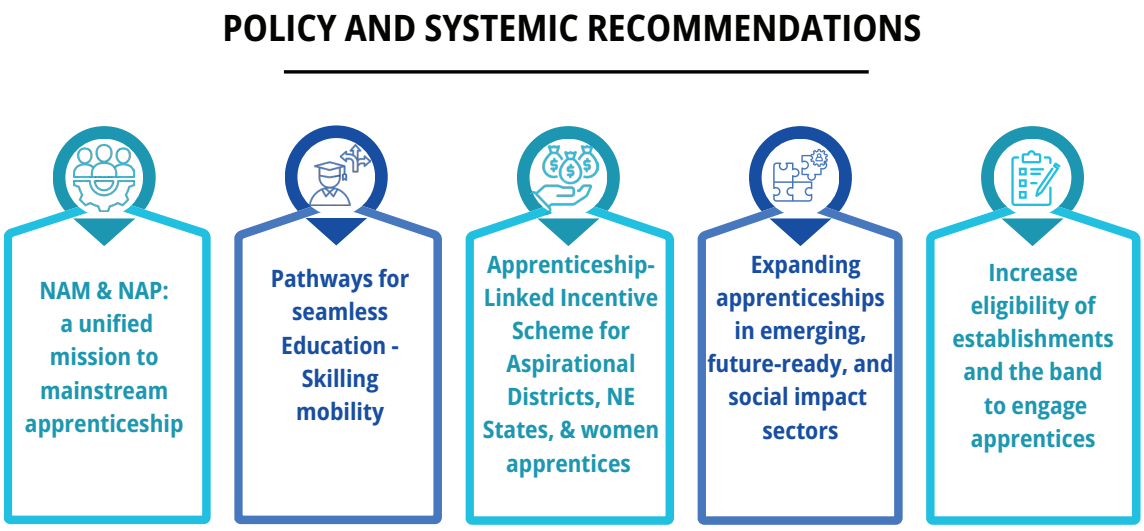
7.2 Policy and Systemic Recommendations

The recommendations also focus on building robust mechanisms to support and monitor apprenticeship adoption and quality at every level. This includes the development of tools to benchmark performance across States and UTs, empowering local institutions such as District Skill Committees, and establishing district-level hubs to drive localized transformation.

7.2.1 National Apprenticeship Mission (NAM) and National Apprenticeship Portal (NAP): a unified mission to mainstream apprenticeship in India

The apprenticeship ecosystem, at present, includes initiatives from different ministries and State Governments, diverse target groups, norms, modalities, and institutional arrangements. This often leads to the creation of multiple brands, possibly causing confusion for both candidates and employers. Hence, a unified apprenticeship mission and a digital platform could be launched to streamline and enhance apprenticeship engagement across the country. A mission such as the National Apprenticeship Mission (NAM) could serve as a common platform with information on various types of apprenticeship programmes accessible through a single gateway, the National Apprenticeship Portal (NAP). Under NAM, all major Central and State-run apprenticeship programmes could be harmonized under a common framework with unified branding, governance, and communication guidelines, leveraging existing infrastructure in ITIs, vocational institutions, tool rooms, and training centres.

The National Apprenticeship Portal could serve as a single gateway for the entire apprenticeship lifecycle from one-time registration for candidates and employers, to contract generation, assessments, certification, stipend disbursal, and performance monitoring. It could integrate with key platforms such as Skill India Digital Hub (SIDH), Udyam Portal, and academic credentials (NAD/ABC), incorporating biometric e-KYC, multilingual mobile interfaces, and AI-driven analytics for smart matching, drop-out tracking, and inclusion monitoring. The portal should be strengthened with AI-enabled chatbots, bulk action features, and an efficient grievance redressal mechanism. Additional functionalities could include post-training support, career counseling, and placement linkages.



Implementation can draw inspirations from model like Singapore's SkillsFuture initiative which serves as an integrated gateway for lifelong learning, including apprenticeships (Refer Box I and II).

Implementation Roadmap for National Apprenticeship Mission (NAM)

Short-Term (0–1 Year)

- Constitute a Steering Committee under MSDE to frame NAM's structure, mandate, and governance model.
- Map features of existing scheme and portals (NAPS, NATS) and design a unified architecture.
- Harmonize existing apprenticeship policies and schemes across ministries under a unified framework.
- Develop common branding, communication guidelines, and operating procedures for all government-led apprenticeship programmes.
- Launch awareness campaigns to reintroduce NAM as India's flagship apprenticeship mission.

Long-Term (1–3 Years)

- Institutionalize NAM through a Cabinet-approved policy or legislative framework.
- Establish a permanent mission office to oversee strategy, compliance, and performance evaluation.
- Align funding mechanisms of various schemes under NAM's strategic umbrella.
- Full-scale integration of all Central and State-run apprenticeship schemes.
- Enable smart matching between apprentices and establishments.
- Incorporate biometric e-KYC, contract generation, attendance, e-assessment, certification, and stipend processing.
- Incorporate AI-based analytics dashboard for policymakers to monitor uptake, dropouts, sector performance, and gender/disability inclusion.
- Develop mobile and multilingual interfaces to expand access.

Actors Responsible

- MSDE, SSDMs
- MoE (UGC,AICTE)
- MoLE
- MoMSME
- MoCI

Performance Success Indicators

- Launch of NAM within 12 months with unified identity for apprentices and strategic plan
- All major Central and States' apprenticeship schemes aligned under NAM
- Increase in total apprenticeship seats offered nationally by Year 3
- Consistent quarterly performance reporting by States and sectors

Box I: International Best Practices: Modular Apprenticeships & SkillsFuture Portal Initiative, Singapore

Key Features of Singapore Model

- Apprentices can complete short-term skill modules, earning credits toward higher certifications or degrees.
- The government subsidizes training costs, making skill development accessible to all citizens.
- Companies receive funding support for in-house training, ensuring continuous workforce development.

(Source: SkillsFuture Singapore: Skills-based modular courses for lifelong learning)

7.2.2 Pathways for Seamless Education–Skilling Mobility

In order to make apprenticeships more aspirational, emphasis needs to be given on its integration with education and facilitating pathways for mobility between skilling and education. Apprenticeships, as done under AEDP, must carry standardized and transferable academic credits, computed based on the duration of on-the-job training. This integrated model supports NEP 2020's vision of holistic, flexible, and employability-driven education, particularly for youth entering the workforce through alternate routes. Additionally, linking NATS participation with institutional assessment frameworks such as NAAC and NIRF rankings can incentivize Higher Education Institutions (HEIs) to increase engagement. Inspiration could also be drawn from the Employer-led & Degree Apprenticeships offered in UK and the Dual System of Training offered in Germany (Refer Box III and IV). Within India, inspiration can be drawn from Tamil Nadu's Education-Industry Integration Model (Refer Box V).

Implementation Roadmap

Short-Term (0–12 months)

- Embed NAPS/NATS modules into curricula of selected UG programmes, dedicating at least one semester to apprenticeship.
- Launch pilot AEDPs in HEIs integrating NCrF-aligned apprenticeship credits with NAPS/NATS registrations.
- Develop model tripartite MoUs among HEIs, industry partners, and apprentices, defining shared assessment and learning outcomes.
- Conduct training workshops for HEIs and industry partners on credit mapping, assessment protocols, and curriculum co-design with faculty and industry.
- Expand apprenticeship-linked pathways to postgraduate, diploma, and open learning programmes (IGNOU, SWAYAM).
- Initiate a national awareness campaign showcasing "Earn While You Learn" success stories.

Long-Term (1–3 years)

- Scale AEDPs across all NIRF/NAAC-qualified HEIs, mandating at least one semester of credit-bearing apprenticeship in degree programmes.
- Institutionalize apprenticeship-linked metrics in accreditation and ranking frameworks to incentivize adoption.
- Promote region-specific Industry–Academia Hubs to decentralize access in Tier 2/3 cities.

Actors Responsible

- MoE (UGC, AICTE, HEIs)
- MSDE (NCVET, NSDC, SSCs)

Performance Success Indicators

- Number of HEIs offering NCrF-aligned AEDPs
- Increase in learners completing NAPS/NATS-aligned credit-bearing apprenticeships
- Growth in horizontal/vertical academic mobility enabled via apprenticeship credits.
- Number of co-certification cases (degree + apprenticeship)
- Volume of tripartite MoUs with clear credit assessment norms

Box II: International Best Practices: Employer-Led & Degree Apprenticeships in the UK

Key Features of the UK Model

- The Apprenticeship Levy System, introduced in 2017, mandates large employers to contribute 0.5% of their payroll into an apprenticeship fund, which is then used for workforce training.
- The UK also introduced Degree Apprenticeships, where students earn a university degree while working full-time, making apprenticeships a mainstream alternative to higher education.
- Employers receive funding support from the government to train apprentices, ensuring financial sustainability.

(Source: Office for Students (UK). Degree apprenticeships: Guide for employers.)

Box III: International Best Practices: Dual Vocational Training System in Germany

Key Features of the German Model

- Apprentices split their time between schools and industries, typically spending 3-4 days per week in companies and the rest in vocational schools.
- The curriculum is industry-driven, and apprentices earn a stipend while they learn, making vocational education attractive.
- Over 50% of German students in upper secondary education participate in apprenticeships, and more than 60% secure full-time jobs post-training.

(Source: Federal Institute for Vocational Education and Training. Germany's dual vocational education and training system)

Box IV: Tamil Nadu: Education-Industry Integration Model

- Key Initiative: Dual System of Training (DST) / Embedded Course Framework
- "Earn While You Learn" Model: Integrates apprenticeships directly into educational curriculum
- Academic Credit: Apprenticeship hours count toward formal qualification requirements
- Progression Pathways: Clearly defined career advancement routes post-apprenticeship

(Source: Tamil Nadu Skill Development Corporation (TNSDC))

7.2.3 Apprenticeship-Linked Incentive Scheme (ALIS) for Aspirational Districts, North East States, and women apprentices

An Apprenticeship Linked Incentive Scheme (ALIS) with financial incentives for both employers and apprentices may be designed for Aspirational Districts, North East States, and women apprentices. This scheme could also be integrated as a component under NAPS. To encourage industry-wide adoption of apprenticeships, a performance-based incentive framework for employers based on apprentice retention, employment conversion, and diversity (gender, regional, marginalized groups) in apprenticeship cohorts may be effective. Along with a special focus on aspirational districts and North East States, this scheme could encourage recruitment of women apprentices. ALIS could play a significant role in making apprenticeships a strategic investment for firms while reinforcing the principles of social equity and workforce diversity.

Implementation Roadmap

Short-Term (0–12 months)

- Define a tiered incentive structure (e.g., additional stipend and travel allowances) for apprentices from aspirational districts, North East States, and women.
- Launch pilots in Aspirational Districts and North East States, targeting women apprentices. Partner with local industry clusters and women's self-help groups to identify candidates.
- Integrate incentive tracking into the NATS/NAPS portal and ABC/NAD platforms, enabling real-time disbursement and monitoring.
- Conduct district-level workshops with State Education Departments, DCs, and local NGOs to onboard HEIs, ITIs, and women's associations. Publish scheme guidelines in regional languages.

Long-Term (1–3 years)

- Expand the incentive scheme to all Aspirational Districts and North East States.

Actors Responsible

- MSDE (NSDC, SSCs)
- MoE (UGC,AICTE)
- MoCI
- MoDoNER

Performance Success Indicators

- Number of apprentices enrolled under the scheme in Aspirational Districts, North-East States, and women cohorts
- Percentage increase in women apprentices annually
- Apprenticeship completion rate among incentivized groups
- Conversion rate to full-time employment or continued higher education
- Growth in participation from SC/ST/OBC communities within special districts
- Number of formal MoUs signed between HEIs/ITIs and local industries for incentive-linked placements
- Volume of disbursed incentives vs. allocated budget
- Apprentice and employer satisfaction scores (through regular surveys)
- Case studies capturing career trajectories of women and rural apprentices

7.2.4 Expanding Apprenticeships in Emerging, Future-Ready, and Social Impact Sectors

To make apprenticeship training aspirational, inclusive, and industry-relevant, India must actively promote apprenticeships in both high-growth sunrise industries and other labour-intensive sectors. Emerging industries such as semiconductors, electric vehicles (EVs), drones, IT & BPM, healthcare, electronics, and telecommunications are driving technological and economic transformation, with the drone industry recording a Net Apprenticeship Outlook (NAO) of 86% and the EV & Mobility sector at 75% (TeamLease Degree Apprenticeships Report, 2024). This higher NAO signifies employer interest and commitment towards engaging apprentices in these sectors.

Simultaneously, the care economy including childcare, elder care, disability support, and community health services presents immense potential for job creation. However, this sector remains largely informal and excluded from structured skilling systems. Integrating these domains into the formal apprenticeship framework will professionalize the workforce, address acute skill gaps, and prepare India for both present and future workforce demands.

Government initiatives like Make in India, PLI scheme, and targeted policy measures can accelerate adoption. Sector-specific pilots could be launched in emerging urban hubs, while rural areas can be integrated through MSME clusters and agro-tech initiatives. Special focus must be placed on gender diversity, incorporating women in STEM-intensive trades (e.g., solar, semiconductors) and care-related sectors. Industry–academia partnerships, Centres of Excellence, and advanced digital platforms, will be critical to scaling impact. The integration of virtual reality (VR) training for specialized tasks, micro-credentials, and international collaboration can further enhance quality and mobility.

Implementation Roadmap

Short-Term Actions (0–12 Months)

- Identify and map apprenticeship opportunities across high-growth sectors (semiconductors, EVs, drones, IT/BPM, healthcare, electronics, telecom) and labour intensive, social impact sectors (care economy, education aides, geriatric/disability care, home healthcare).
- Add new optional trades in NAPS/NATS for care and allied services.
- Launch joint communication campaigns with State Directorates of Training, industry bodies (NASSCOM, SIAM, CII, FICCI), SSCs, and NGOs to raise awareness.
- Initiate pilot programmes in priority cities and rural clusters, prioritizing high youth unemployment areas or strong sectoral presence.
- Develop sector-specific curriculum modules and micro-credentials in collaboration with industry, academia, and NGOs.
- Expand and digitize apprenticeship registration, monitoring, and compliance

platforms along with AI-driven skill matching.

- Facilitate quick onboarding of MSMEs and micro-enterprises through cluster-based and simplified compliance models.

Long-Term Actions (1–3 Years)

- Develop a national industry–academia–government partnership framework for sustained engagement in emerging and care sectors.
- Establish State-level monitoring cells to ensure quality implementation and track apprentice outcomes.
- Create a central impact evaluation dashboard for metrics like placement rates, stipend utilization, dropout reduction, and gender diversity.
- Extend financial incentives, including performance-linked bonuses for training providers and participating industries, with a focus on MSMEs and underserved regions.
- Set up Centres of Excellence (CoEs) with advanced labs and industry tie-ups in key hubs.
- Introduce VR-based training for specialized and hazardous tasks.
- Integrate formal degree and diploma programmes with up to 60% on-the-job training in partnership with IITs, NITs, and leading industries.
- Enable global exposure through partnerships with international vocational systems (e.g., Germany, Singapore).

Actors Responsible

- MSDE (DGT, NSDC, SSCs), SSDMs
- MoCI
- MoHFW
- MoWCD
- Industry Associations (NASSCOM, SIAM, CII, FICCI, ASSOCHAM), TPAs

Performance Success Indicators

- Annual apprentice registrations in emerging, future-ready, and care sectors
- Percentage increase in industry partnerships with training institutions
- Enrolments, completions, and placement rates post-training
- Number of new optional trades and micro-credentials introduced
- Number of Centres of Excellence operationalized

7.2.5 Increase eligibility of establishments and the band to engage apprentices

To widen the net of industry participation and enhance apprenticeship coverage, it is proposed that the eligibility threshold for establishments be revised. All establishments with a workforce of 20 or more could be brought under the apprenticeship framework, expanding beyond the current requirement. Simultaneously, the permissible apprenticeship engagement range could be increased from the existing 2.5%–15% to 2.5%–25%. This shift could enable smaller establishments to also engage apprentices and offer opportunities for skilling to the youth.

Implementation Roadmap

Short-Term (0–12 months)

- Amend the relevant rules under the Apprentices Act, 1961 to revise the workforce threshold and engagement range.
- Develop incentive frameworks for participating employers.
- Create a national database of establishments with 20+ employees to identify target entities.
- Launch an awareness campaign informing employers of the new mandate.
- Build capacity among apprenticeship advisors and other regulators at the State level to support implementation and grievance resolution.

Long-Term (1–3 years)

- Institute differential targets and handholding strategies for large enterprises, MSMEs, and Startups to facilitate adoption.
- Evaluate and recalibrate periodically based on sectoral growth, workforce absorption capacity, and regional dynamics.

Actors Responsible

- MSDE (DGT, SSDMs, DSCs)
- MoLE
- MoMSME
- Industry Associations (e.g., CII, FICCI, ASSOCHAM)

Performance Success Indicators

- Number of establishments with 20+ workforce recruiting apprentices
- Increase in apprenticeship engagement rate across sectors, States and districts
- Share of MSMEs and startups participating under the revised threshold
- Compliance rate verified through third-party audits or integrated systems

7.3 Structure and Regulatory Recommendations

7.3.1 Apprenticeship Engagement Index (AEI) for States and UTs

To drive data-informed policymaking and encourage healthy inter-State competition, an Apprenticeship Engagement Index (AEI) could be instituted. The AEI could serve as a real-time, publicly accessible dashboard that ranks States and UTs on indicators such as their performance in engaging apprentices relative to their youth population, industrial base, and skilling infrastructure. This evidence-based tool could enable the Central Government to deploy targeted technical assistance and resource allocation to underperforming regions.

Implementation Roadmap

Short-Term (0–12 months)

- Design the AEI framework, including methodology, data sources, weightages etc.
- Develop a digital dashboard integrated with the Apprenticeship Portal and State MIS systems for automated data capture.

- Pilot the AEI in a few diverse States to validate methodology and reporting cadence.

Long-Term (1–3 years)

- Release the first public AEI ranking with baseline indicators and trends.
- Institutionalize AEI reporting on a quarterly basis with interactive dashboards for public access.
- Link AEI rankings to performance-based funding, incentives, or recognition under central schemes.
- Use AEI as a benchmarking tool for inter-State learning, peer reviews, and capacity-building interventions.
- Expand the AEI to include disaggregated district-level insights to aid localized planning and implementation.

Actors Responsible

- MSDE (NSDC), SSDMs
- MoE
- Academic and Research Institutions

Performance Success Indicators

- Operationalization and public availability of AEI dashboard
- Number of States/UTs ranked with real-time and disaggregated data
- Frequency and regularity of AEI updates and publications
- Use of AEI rankings in State-level policy interventions and programme prioritization.
- Stakeholder satisfaction with the AEI as a transparency and accountability tool
- Correlation of AEI with other developmental outcomes (e.g., employment rates, skilling enrolments)

7.3.2 Standardization of evaluation and assessment of training

Assessment timelines, evaluation methodologies, assessor qualifications, and grievance redressal protocols could be standardized for apprenticeship training. A uniform framework will ensure greater consistency, transparency, and trust in the system while enhancing the credibility of the certification process.

Implementation Roadmap

Short-Term (0–12 months)

- Define key parameters including assessor qualifications, evaluation rubrics, timelines, and grievance redressal procedures.
- Establish a digital dashboard for SSCs and training providers to report assessment schedules and outcomes.
- Launch capacity-building sessions for assessors and trainers on the new standardized framework.

Long-Term (1–3 years)

- Monitor adherence to SoPs and other guidelines across and continuously refine based on ground feedback.
- Undertake independent audits of assessment agencies and providers to ensure compliance.
- Establish a centralized grievance redressal portal for resolution tracking.

Actors Responsible

- MSDE (DGT, NCVET, NSDC, SSCs, TPs, Assessment agencies), SSDMs
- MoE

Performance Success Indicators

- Number of SSCs/training providers adopting and implementing the uniform framework
- Improvement in learner satisfaction and trust in the certification process.
- Reduction in grievance redressal turnaround time
- Percentage increase in certified trainees and reduced assessment variability across sectors, monitored
- Frequency and consistency of updates to the list of inactive training establishments, with NCVET's regulatory input
- Compliance rate of training providers

with standardized protocols, as audited and enforced by NCVET

- Number of audits and follow-up actions conducted against non-compliant agencies, overseen by NCVET

7.3.3 Expanding Apprenticeships through Post-Training Entrepreneurial and Career Support

To drive long-term value and increase the attractiveness of apprenticeships, it is essential to go beyond stipend-linked incentives and introduce comprehensive post-apprenticeship benefits. Apprentices who are interested to start their own ventures, could be provided seed funding opportunities, incubation support, and mentorship. Encouraging apprentices to view their training as a pathway to entrepreneurship will not only boost self-employment but also foster a culture of innovation and job creation. Additionally, exclusive mentorship programmes, targeted job fairs, and networking opportunities with industry leaders can facilitate career growth. These measures will elevate the overall value proposition of apprenticeship programmes, encouraging higher completion and certification rates.

Implementation Roadmap

Short-Term (0–12 months):

- Identify financial institutions and development banks to co-create start-up grant or relaxed loan schemes for certified apprentices interested in entrepreneurship.
- Pilot mentorship and alumni programmes in high-performing apprenticeship clusters.

Long-Term (1–3 years):

- Organise exclusive job fairs and industry networking events at regional and national levels.
- Launch a dedicated entrepreneurship track with mentorship, funding access, and business incubation support for certified apprentices.
- Monitor the long-term impact of post-certification interventions on employment, income levels, and entrepreneurial success.

Actors Responsible

- MSDE (NSDC, SSCs)
- MoE
- MoCI
- Financial Institutions
- Industry Associations

Performance Success Indicators

- Volume and disbursement rate of Start-up grants
- Participation rate in mentorship programmes and exclusive job fairs
- Longitudinal data on employment, income growth, and entrepreneurial outcomes among certified apprentices

Box V: Central Government Initiative: PM SETU (4, Oct, 2025)

The Prime Minister launched PM-SETU (Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs), a landmark 60,000 crore centrally sponsored scheme to transform 1,000 Government ITIs across India into modern, industry-aligned training institutions.

PM-SETU will follow a hub-and-spoke model, with 200 hub ITIs linked to 800 spoke ITIs. Each hub will be equipped with advanced infrastructure, innovation and incubation centres, production units, training of trainer facilities, and placement services, while the spokes will extend access and outreach.

(MSDE, Press release, 2025, October)

7.3.4 Strategic industry adoption and upgradation of ITIs

Given that a significant proportion of apprentices originate from ITIs, enhancing the infrastructure, training quality, and industry relevance of ITIs is imperative. The ITI Upgradation Scheme is a significant step in this direction (Box V). Industry adoption and co-management of ITIs backed by demonstrated success stories in several States, can serve as a scalable solution to bridge persistent skill gaps in other States. Larger firms must proactively contribute to ITI modernization through curriculum alignment, infrastructure upgrades, and capacity-building of instructors. Such collaborations can simultaneously fulfil industry and skilling obligations while generating a pipeline of job-ready, industry-aligned apprentices, thereby strengthening the broader skilling ecosystem.

Implementation Roadmap

Short-term (0 to 12 months)

- State to identify priority ITIs for industry adoption based on enrolment, placement records, and infrastructure needs.
- Facilitate MoUs between select industries and ITIs for infrastructure refurbishment and curriculum co-design.
- Integrate industry tools, machinery, and practices into existing training modules.

Long-term (1 to 3 years)

- Embed flexible, industry-driven curricula updated regularly through SSC inputs.
- Create industry-ITI innovation hubs to pilot sector-specific technologies and training.

Actors or Stakeholders Responsible

- MSDE (DGT, NSDC, SSCs), SSDMs
- Large private enterprises and CSR bodies

Performance and Success Indicators

- Number of ITIs upgraded
- Number of ITIs with Industry Collaboration
- Improvement in ITI infrastructure scores and training outcomes
- Increase in apprenticeship placements originating from adopted ITIs
- Feedback from trainers and trainees on quality of instruction

Box VI: Central Government Initiative: North EastApprenticeship Pilot Scheme, (May 20, 2025)

The North East Apprenticeship Pilot Scheme, implemented by MSDE, marks a significant stride toward inclusive growth and regional empowerment in India's skilling ecosystem. This initiative aims to provide over 26,000 youth from the NER with structured, paid, and industry-aligned apprenticeship opportunities, including an additional ₹1,500 monthly stipend for one year above the standard NAPS allowance, ensuring mobility and access to high-quality training both within and outside the region.

With a total outlay of ₹43.94 crore including funds for outreach, capacity building, and implementation the scheme is implemented by the Indian Institute of Entrepreneurship (IIE), Guwahati, and the NSDC, in collaboration with State Skill Missions and local partners. This scheme not only bridges the gap between education and employment but also establishes a scalable, region-specific model for industry-linked skilling, empowering the North East to take a leading role in India's journey toward a future-ready, globally competitive workforce. (PIB, MSDE, 2025)

7.4 States/UTs and special district-specific recommendations

7.4.1 District Skill Committees (DSC's) to catalyse local apprenticeship transformation

To unlock the full potential of apprenticeships and drive inclusive economic growth, District Skill Committees (DSCs) should be remodelled as the central engines of decentralized apprenticeship adoption. This can be achieved by institutionalizing apprenticeship promotion and scheme implementation within District Skill Development Plans (DSDPs), and aligning annual targets with district-specific demographics and industry needs. Integrated District Apprenticeship Facilitation and Placement Hubs should be established as robust, one-stop platforms within DSCs including in low-performing, aspirational, tribal, and hilly districts to serve all apprenticeship-related needs. The hubs can generate demand for apprentices across emerging and traditional sectors, facilitate industry–institute partnerships, and provide end-to-end support for onboarding, career counselling, and pre-apprenticeship guidance to training progress monitoring, post-apprenticeship placement, and long-term employment tracking. They will maintain a real-time database of apprentices, employers, and training providers; organize awareness campaigns, apprenticeship fairs, and job events such as PM National Apprenticeship Melas (PMNAM) and provide grievance redressal. Leveraging digital platforms for registration, monitoring, and reporting, the hubs may also ensure targeted outreach to underserved groups including women, rural youth, and marginalized communities. By adopting this comprehensive, locally-driven approach, DSCs can transform apprenticeships into aspirational career pathways and bridge the education-to-employment gap at the grassroots level.

Implementation Roadmap

Short-Term (0–12 months)

- Issue revised DSDP guidelines mandating inclusion of apprenticeship targets and integration of apprenticeship schemes.
- Onboard all DSCs onto centralized apprenticeship dashboard.
- Launch training programmes for DSC members on industry engagement, demand mapping, and compliance facilitation.
- Introduce recognition/reward initiative for top 25 districts based on apprenticeship growth metrics.

Medium & Long-Term (1–3 years)

STATES/ UTs AND SPECIAL DISTRICT SPECIFIC RECOMMENDATIONS

- Institutionalize district-specific apprenticeship roadmaps co-created with local industries and academic institutions.
- Scale convergence meetings to all districts, ensuring regular feedback loops with State-level apprenticeship cells.
- Roll out simplified apprenticeship registration and compliance modules tailored for MSMEs through DSCs.
- Mainstream local apprenticeship innovation by documenting best practices and facilitating peer learning exchanges.
- Expand provisions to reward districts that exceed apprenticeship placement and retention benchmarks.

Actors Responsible

- MSDE (DGT, NSDC), SSDMs , DSCs
- MSMEs and Industry Associations
- Local Chambers of Commerce and NGOs

Performance and Success Indicators:

- Number of DSCs with apprenticeship-integrated DSDPs
- Percentage increase in district-level apprenticeship enrolment year-on-year
- Number of industry-academia partnerships formalized through DSC facilitation
- District-wise apprenticeship placement rates, disaggregated by gender and socio-economic background
- Proportion of MSMEs participating in apprenticeship schemes with DSC support

7.4.2 Targeted support and systemic strengthening for improved apprenticeship completion rates in special districts

Improving apprenticeship completion rates in special districts requires a dual strategy that combines targeted regional interventions with broader systemic reforms. Localized support including enhanced mentorship, region-specific training infrastructure, and contextualized incentives must directly address the barriers faced by apprentices in underperforming areas. Simultaneously, the system must be strengthened through improved monitoring, employer coordination, and data-driven policy responses that ensure continuity of learning and workplace integration. Drawing on successful models from high-performing districts, and customizing them for local application can further enhance completion outcomes and institutional resilience.

Implementation Roadmap

Short- Term Change (0–12 months):

- Conduct district-level needs assessments to identify specific barriers to apprenticeship completion.
- Launch mentorship programmes and provide local facilitation support for at-risk apprentices.
- Develop employer handbooks to guide best practices in apprentice support and retention.
- Initiate targeted awareness campaigns to promote the value of apprenticeship completion.

Long-Term Change (1–3 years):

- Establish integrated apprenticeship support centres within special districts to offer continuous guidance and monitoring.
- Institutionalize feedback loops between apprentices, employers, and authorities to inform programme refinement.
- Promote public-private collaboration to invest in district-level infrastructure for on-the-job training.
- Scale and adapt best practices from high-performing regions through structured knowledge transfer mechanisms.

Actors or Stakeholders Responsible:

- MSDE (DGT, SSCs), SSDMs, DSCs

- Industry Associations and SSCs
- Local Training Providers and Community-Based Organizations

Performance and Success Indicators or Metrics:

- Increase in district-level apprenticeship completion rates over baseline levels
- Number of apprentices benefiting from mentorship or support interventions
- Enhanced employer satisfaction and engagement in apprentice completion
- Operationalization and impact of district apprenticeship support centres
- Evidence of successful adaptation of high-performing district practices in new contexts

7.5 Industry and Employers Recommendations

7.5.1 Strengthening Apprenticeship Participation through MSME-Cluster Consortia, Community Networks, and Traditional Skills Integration

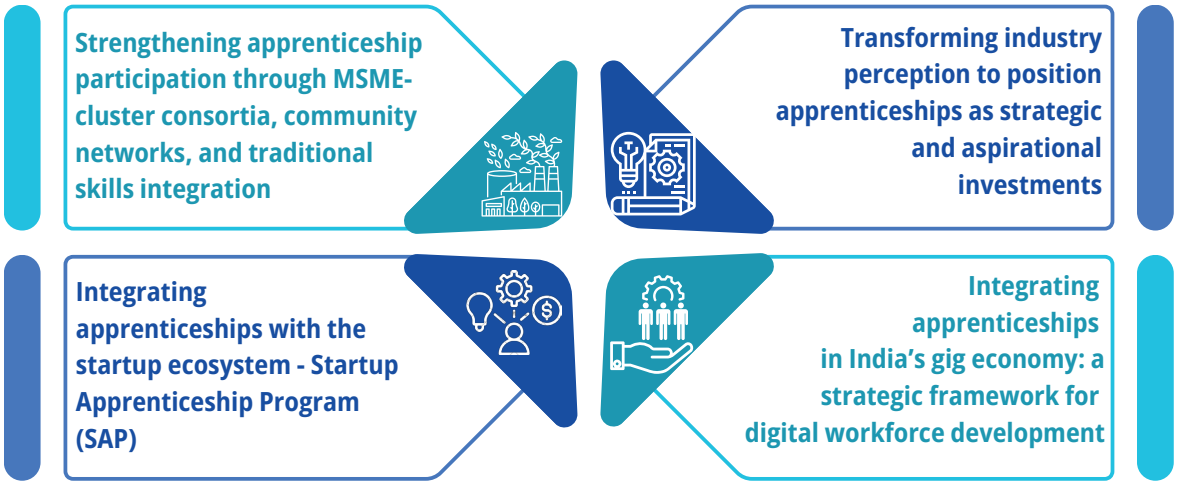
To significantly broaden apprenticeship participation and enhance training quality, a dual strategy is required:

(i) **MSME-Cluster Consortia Model:** MSMEs within industrial clusters could form apprenticeship consortia to facilitate rotational placements of apprentices across firms, ensuring holistic exposure to varied processes. By pooling stipends, infrastructure, and administrative resources, MSMEs can achieve economies of scale and overcome individual capacity limitations. Empanelled Third-Party Aggregators (TPAs) can serve as critical partners mobilizing and counselling apprentices, ensuring curriculum compliance, facilitating assessments, processing claims, issuing certifications, tracking placements for at least one-year post-training, and submitting monthly performance reports.

(ii) **Community and Cooperative Integration:** Traditional skill ecosystems such as weaving, embroidery, folk arts, and artisanal crafts, which have thrived through the traditional ustaad model of apprenticeships, should be preserved and scaled up by embedding apprenticeships into cooperatives, guilds, ustaad-pupil networks, tribal artisan collectives, and NRLM groups. Partnerships with TRIFED, NRLM, and sector guilds can formalize skill transition.

Implementation Roadmap

Short-term (0–12 months)



- Identify and map industrial clusters, cooperatives, guilds, ustaad-pupil networks, tribal artisan groups, NRLM and SRLM collectives to assess readiness for apprenticeship adoption.
- Engage TPAs for demand assessment, apprentice mobilization, and compliance tracking.
- Develop guidelines for forming apprenticeship consortia, including rotational training models and shared infrastructure funding.
- Create sector-specific apprenticeship modules for both traditional and modern skills in collaboration with TRIFED, guilds, and NRLM.
- Launch joint awareness campaigns through State Directorates, industry bodies, and community organizations.
- Pilot rotational apprenticeship programmes in selected clusters and community networks with TPA support for counselling, assessments, and placement tracking.
- Establish linkages with TRIFED and NRLM to embed entrepreneurship, marketing, and digital skills into training.
- Facilitate pooled stipend mechanisms for MSME clusters and community groups, with TPAs processing claims.
- Set up digital and community-based registration mechanisms to ease onboarding.

Long-term (1–3 years)

- Scale successful pilots nationwide, institutionalizing MSME-cluster and cooperative-based apprenticeship frameworks with incentive structures.
- Formalize partnerships between industry, cooperatives, guilds, NRLM groups, and MSME clusters for sustainable apprenticeship delivery.
- Establish State/cluster-level monitoring cells and dedicated support units for training logistics and quality assurance.
- Integrate apprenticeship-linked micro-credentials and stackable certifications into community and MSME training programmes.
- Expand outreach to rural and tribal areas by leveraging TRIFED, NRLM, and MSME cluster networks.
- Promote gender and social inclusion by reserving slots for women, tribal, and marginalized apprentices.
- Introduce monthly reporting for data-driven improvements.

Actors or Stakeholders Responsible

- MoMSME
- MSDE (DGT, NSDC, SSCs), SSDMs, TPA
- MoTA (TRIFED)
- MoRD (NRLM & SRLMs)
- District Industries Centres (DIC)
- MSME Industry Associations & Cluster Development Agencies
- Cooperatives and Guilds
- Ustaad/Master Craftspersons

Performance and Success Indicators

- Number of operational MSME cluster-based apprenticeship consortia.
- Number of apprentices registered from cooperative, tribal, NRLM, and MSME cluster backgrounds.
- Increase in apprenticeship uptake among MSMEs and community groups.
- Reduction in per-capita training costs for participating firms.
- Placement/employment rates within 6 months post-training.
- Diversity metrics, including percentage of female and tribal apprentices.
- Effectiveness of digital and community-based registration and monitoring systems.

7.5.2 Integrating apprenticeships with the Startup ecosystem - Startup Apprenticeship Programme (SAP)

Going forward, the apprenticeship programme could explicitly include Startups ensuring tailored benefits that can support the Startup ecosystem to recruit apprentices. By introducing Startup-specific apprenticeship incentives, the Central and State Governments can enable early-stage ventures to hire and provide on-the-job training to youth without incurring excessive financial burdens. This approach will not only help Startups scale efficiently, but also create a structured pathway for youth to gain hands-on experience in high-growth industries. To bridge the gap between apprenticeship training and the new-age Startup ecosystem, a Startup Apprenticeship Programme (SAP) under NAPS can be launched, offering apprentices practical exposure in emerging sectors such as AI, Fintech, and e-commerce. With targeted apprenticeship initiatives for Startups, India can foster an innovation-driven economy where young talent integrates seamlessly into the workforce while supporting entrepreneurial success.

Implementation Roadmap

Short-Term (0–12 months)

- Modify scheme guidelines, where may be necessary, to formally include Startups.
- Design SAP modules with support from stakeholders.
- Launch targeted outreach campaigns to onboard Startups and promote SAP among youth.
- Implement pilots in key Startup hubs such as Bengaluru, Hyderabad, Pune, and NCR.

Long-Term (1–3 years)

- Scale SAP implementation across all major Startup clusters in India.
- Embed apprenticeship modules in Startup incubator and accelerator programmes.
- Utilize data analytics and AI tools to optimize matching and monitor apprenticeship outcomes.
- Institutionalize feedback and grievance redressal mechanisms through digital channels.

Actors Responsible

- MSDE (NSDC)
- MoCI (DPIIT)
- Startup Incubators & Accelerators
- IT Partners/System Integrators

Performance Success Indicators

- Number of Startups registered under SAP (monthly and annual growth)
- Number of apprentices onboarded by Startups, disaggregated by sector and location
- Increase in representation of women and underrepresented groups in startup apprenticeships
- Average time taken for Startup registration and apprentice onboarding

7.5.3 Transforming industry perception to position apprenticeships as strategic and aspirational investments

To unlock the full potential of apprenticeships in India, a dual-pronged strategy is essential: first, reshape employer perception of apprenticeships from cost-centric to long-term strategic investments, and second, transform entrenched social biases that undervalue vocational pathways. An integrated campaign embedding success stories, targeting both industry and society, to reposition apprenticeships as high-value, aspirational, and return on investment -driven workforce development tools would be critical.

To increase the demand for apprenticeships, it is imperative to align vocational training and apprenticeship curricula with real-time industry needs. This requires a shift towards demand-driven, competency-based education that reflects the dynamic nature of work and technology. By increasing industry

participation in curriculum development, fostering experiential learning models, and leveraging digital micro-credentialing, the apprenticeship ecosystem can become more responsive, relevant, and attractive to employers and trainees alike.

or mentors.

Long-term (1 to 3 years)

- Establish a national apprenticeship return on investment framework for benchmarking returns across sectors and regions.

Box VII: Karnataka: Industry Engagement Model

Karnataka's industry engagement model for skill development emphasizes robust partnerships to bridge training and employment gaps, particularly in IT and manufacturing sectors. The key initiative, Karnataka Apprenticeship Training Scheme (KATS), integrates apprenticeships with industrial training aligned to national schemes. It offers a financial incentive of an additional ₹1,500 per month per apprentice beyond central schemes, boosting employer participation and resulting in over 50,000 placements. Industry outreach includes 121 apprenticeship melas connecting local industries with ITI graduates, facilitating direct recruitment from over 1,000 companies.

Additional features encompass partnerships with tech giants like Infosys and Wipro for specialized training in AI and cybersecurity, a network of 50+ skill development centres focusing on biotechnology and renewable energy, and a digital tracking platform for monitoring progress and ensuring 75%+ employability rates.

(Source: Karnataka Skill Development Mission)

Implementation Roadmap

Short-term (0 to 12 months)

- Conduct sector-wise industry consultations to identify emerging skill needs.
- Publish sector-specific return on investment case studies showing productivity gains, reduced attrition, and cost savings from apprenticeships.
- Develop digital toolkits and onboarding platforms to simplify compliance and monitoring for employers.
- Organize employer sensitization workshops and "Apprenticeship Pakhwadas" with chambers like CII, FICCI, and ASSOCHAM.
- Develop digital micro-credentials for niche, in-demand skills with industry endorsement.
- Invite industry professionals to contribute as guest lecturers, evaluators,
- Institutionalize employer recognition systems (e.g., annual rankings, awards, CSR tax incentives) to boost visibility and prestige.
- Promote plug-and-play modular training formats, co-created with SSCs and industry to ease participation.
- Institutionalize Annual National Apprenticeship Melas and Community Roadshows in every district
- Institutionalize a framework for periodic curriculum review and industry feedback integration.
- Establish 'Sector Skill Innovation Hubs' jointly managed by industry and training institutes.
- Create apprenticeship modules that adapt to regional and sector-specific labour market trends.
- Promote scalable partnerships like Karnataka's industry engagement model

across States.

Actors or Stakeholders Responsible

- MSDE (DGT, NCVET, NSDC, SSCs), SSDMs
- Industry associations and corporate partners

Performance Success Indicators

- Frequency and quality of curriculum updates in alignment with industry needs
- Increase in employer satisfaction scores and participation rates
- Uptake of micro-credential courses by apprentices and trainees
- Establishment and operationalization of Sector Skill Innovation Hubs
- Improved apprenticeship completion rates and employment outcomes post-training

7.5.4 Integrating apprenticeships in India's Gig and Platform Economy: A strategic framework for digital workforce development

Promoting apprenticeships in India's gig and platform economy, particularly in sectors like e-commerce, transport and logistics, can significantly enhance workforce readiness by providing structured, hands-on training tailored to the digital and flexible nature of work. By integrating apprenticeships, platforms can upskill young workers in industry-relevant technical and soft skills. This could allow apprentices to gain practical experience, improve their employability, and also transition into micro-entrepreneurial roles. (NITI Aayog, 2022)

This initiative would require collaboration among gig platforms, skilling agencies, and financial institutions to provide apprentices with access to credit, insurance, and continuous learning opportunities. By aligning apprenticeship models with the unique characteristics of the gig economy, India can unlock new pathways for youth employment and create a more resilient, future-ready workforce.

Implementation Roadmap

Short-Term Actions (0–12 Months)

- Co-create apprenticeship modules tailored to gig and platform sectors.
- Develop Digital Credentialing Systems: Integrate API-based digital credentials and micro-certifications for apprentices, ensuring that skills gained are portable and recognized across platforms.
- Simplify registration and onboarding with user-friendly, multi-lingual interfaces and mobile-first access to lower entry barriers for youth in rural and low-connectivity areas.

Long-Term Actions (1-3 Years)

- Foster Collaboration: Institutionalize collaboration among platforms, skilling agencies, SSCs, and financial partners to sustain innovation and address emerging challenges in the gig economy.
- Offer fiscal and non-fiscal incentives to platforms in sectors such as e-commerce, logistics and transport for engaging apprentices, maintaining high training quality, and supporting worker welfare.
- Explore global deployment opportunities for apprentices in the gig and platform sector, enabling them to access international markets and remote work opportunities through recognized digital credentials.

Key Stakeholders

- MSDE (NSDC) SSDMs
- Digital labour platforms
- Training Providers: ITIs, vocational institutes, NGOs, and community organizations.
- Financial Institutions: Banks, microfinance institutions, insurance companies.
- Technology Partners: Portal developers, AI solution providers, digital credentialing agencies.

Performance and Success Indicators

- Increase in gig apprenticeship registrations, completions, and digital credential issuance.
- Employer and apprentice satisfaction ratings and reduction in dropouts.
- Growth in gig apprentices' transition to formal employment or micro-entrepreneurial roles.

7.6 Apprentice and Aspirant Recommendations

7.6.1 Provision for travel and accommodation facilities

To ensure access to apprenticeship opportunities, particularly for youth from economically weaker sections and remote regions, support for travel and accommodation needs to be considered. Many apprentices are required to relocate to industrial hubs, but their stipend could be insufficient to meet the costs of travel, accommodation, and daily sustenance. Difficulty in commuting may lead to dropouts and discourage participation. Introducing structured support such as travel arrangements and travel allowance, and subsidized housing or transport can significantly ease financial stress and improve completion rates. Gujarat's Mukhya Mantri Apprenticeship Yojana (MAY) (Box VIII), which provides additional stipends and transport concessions, serves as a viable State-level model that can be replicated to enhance the appeal and feasibility of apprenticeships. The stipend under NATS should be rationalized to reflect the cost of living variations across Tier 1, 2, 3 cities.

Implementation Roadmap

Short-Term (0–12 months):

- Publicize successful models like Gujarat's MAY scheme through policy briefs and workshops.
- Introduce pilot initiatives

Medium & Long-Term (1–3 years):

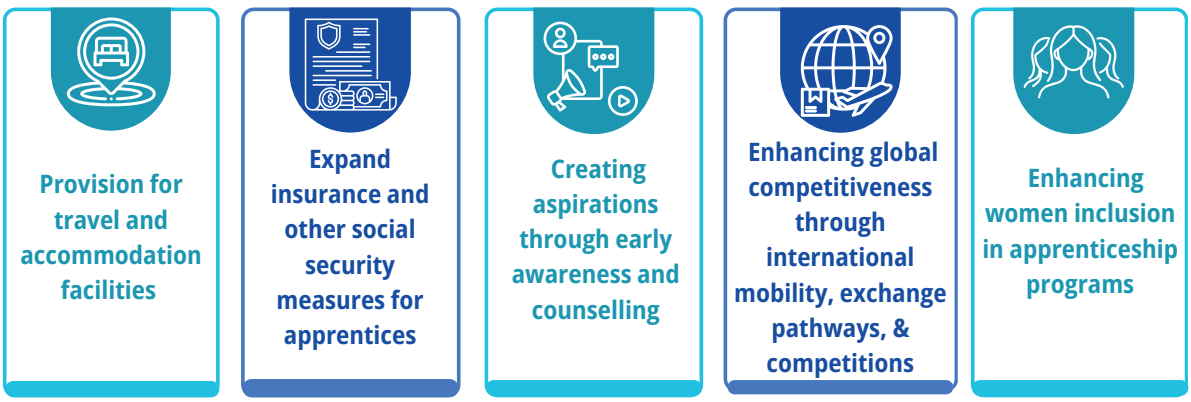
- Institutionalize a national support framework for apprentices
- Create partnerships with industry and CSR.

Actors or Stakeholders Responsible:

- MSDE (DGT), SSDMs
- Employers and Industry Associations, CSR Foundations
- Urban Local Bodies

Performance and Success Indicators:

- Reduction in dropout rates due to difficulty in commute.
- Increase in participation of candidates from rural and low-income backgrounds.
- Replication of State-level models like



Gujarat's MAY in other States.

Box VIII: Gujarat: Mukhya Mantri Apprenticeship Yojana (MAY)

- Gujarat's Mukhya Mantri Apprenticeship Yojna (MAY) provides additional stipend as well as transport facility for the apprentices. It is the best example to promote apprenticeship actively. This model demonstrates how state-level initiatives can complement central schemes for greater impact.
- Concessional bus passes for apprentices traveling over 30km (5.75 Cr allocated, benefitting 4,144 candidates) under Mukhyamantri Apprenticeship Yojana and Mahila Apprentice Protsahak Yojana.

Source: Gujarat Skill Development Mission (GSDM)

7.6.2 Expand insurance and other social security measures for apprentices

Providing protection against risks and accidents to apprentices can also make apprenticeship training a more sought-after option. Section 16 of the Apprentices Act, 1961 provides for compensation under the (section 8) Workmen's Compensation Act, 1923 in the event of injury during apprenticeship. Expanding insurance to cover medical, accidental, and life risks would significantly enhance the appeal and security of apprenticeships, especially in high-risk sectors.

Implementation Roadmap

Short-Term (0–12 months)

- Conduct a risk assessment of sector-specific occupational hazards across apprenticeship trades.
- Launch pilot group insurance schemes for apprentices in hazardous sectors (e.g., manufacturing, mining, automotive) through co-sharing of premiums by employers and government.
- Integrate apprentices with existing government schemes like:
  - o Ayushman Bharat for basic health coverage
  - o ESIC for registered units
  - o State-specific social security boards where applicable
- Run nationwide awareness drives targeting employers, apprentices, and families to improve uptake and trust.

Long-Term (1–3 years)

- Institutionalize a national framework for apprentice insurance.
- Collaborate with IRDAI and insurance providers to design standardized group insurance products.
- Establish a digital portal for enrolment, premium management, claims processing, and grievance redressal.
- Create linkages with skilling data portals for auto-enrolment and real-time monitoring.
- Include insurance enrolment as a pre-condition for apprenticeship contract registration.

Actors Responsible

- MSDE
- MoLE
- IRDAI
- Employers and Private/Public Insurance Providers

Performance Metrics

- Percentage of apprentices enrolled in health/life/accident insurance
- Reduction in apprentice dropout due to injury/illness
- Turnaround time for insurance claims processing
- Inclusion of insurance in apprenticeship MIS dashboards

7.6.3 Creating aspirations through early awareness and counselling

Early awareness and career guidance programmes that showcase the value and opportunities of apprenticeship pathways could be introduced at the school level. This can be achieved by integrating apprenticeship-related modules within the school curriculum under vocational education, organizing interactive workshops and career fairs with industry participation, and facilitating exposure visits to workplaces. Collaborations with skill institutes, local industries, and apprenticeship promotion schemes can provide exposure to students. South Korea's Meister School (Box IX) is a good example in this respect.

Implementation Roadmap

Short-term (0 to 12 months)

- Launch mass media and digital campaigns with real apprentice success stories and the "Earn While You Learn" narrative.
- Integrate apprenticeship awareness into school, ITIs, and college career counselling curricula.
- Host Apprenticeship Days and interactive workshops at educational institutions.
- Engage influencers, employers, public figures, and alumni to advocate vocational education across platforms.

Long-term (1 to 3 years)

- Embed apprenticeship and vocational literacy into the national curriculum and NEP-aligned school frameworks.
- Track societal attitude shifts via surveys and integrate findings into policy design.

Actors or Stakeholders Responsible

- MSDE (NSDC and SSCs)
- Industry Bodies (CII, FICCI, ASSOCHAM)
- Educational institutions, including schools, ITIs, and HEIs.
- Media agencies and digital content creators.
- Public representatives, social influencers, and industry bodies.

Performance and Success Indicators

- Campaign reach, frequency, and engagement metrics across media and digital platforms.
- Number of schools and ITIs incorporating apprenticeship awareness in curricula and counselling.
- Participation rates in Apprenticeship Day events, Melas, and workshops.

Box IX: International Best Practices: Meister Schools & Vocational High Schools, South Korea

Key Features of South Korean Model

- Students in Meister Schools receive intensive skill-based training, with industry partnerships ensuring job placements.
- The employment rate for vocational school graduates is over 90%, significantly higher than that of general high school graduates.
- The government provides financial aid and incentives to students opting for vocational education, making it a preferred choice.

(Source: Inter-American Development Bank, Meister High School: A model for workforce development.)

7.6.4. Enhancing Global Competitiveness through International Mobility, Exchange Pathways, and Competitions

To position India as a global hub for skilled manpower, apprenticeship and vocational training programmes should integrate comprehensive international

mobility and excellence frameworks. This includes embedding language training, intercultural competence, and soft skills such as communication, adaptability, and cross-cultural collaboration into curricula. Collaborations with international industry partners are essential to align technical training with global standards, supported by bilateral agreements with countries that have a demand for skilled labour from India. Models such as Japan's Technical Intern Training Programme (TITP) offer replicable frameworks for formal apprenticeship exchange pathways, emphasizing joint certification, curriculum harmonization, skills recognition, and structured exchange programmes.

Additionally, participation of apprentices and skilled candidates in prestigious global skill competitions like WorldSkills needs to be encouraged. This could inspire excellence, provide global visibility, offer benchmarking opportunities, and set aspirational goals for youth.

Implementation Roadmap

Short-term (0 to 12 months)

- Integrate language, intercultural, and international training modules into select apprenticeship and vocational programmes.
- Initiate partnerships with international industry bodies to align training curricula.
- Begin negotiations for bilateral apprenticeship exchange agreements with priority countries.
- Develop frameworks for joint certification and skills recognition.
- Identify and support high-performing vocational trainees for participation in upcoming international competitions.
- Launch awareness drives in ITIs, polytechnics, and vocational institutes about WorldSkills and similar platforms.
- Establish district and State-level competitions as feeder platforms for national selection.
- Provide intensive coaching and mentorship to shortlisted candidates.

Long-term (1 to 3 years)

- Institutionalize comprehensive international training components across apprenticeship and vocational programmes.
- Formalize and operationalize bilateral agreements facilitating apprenticeship exchanges.
- Establish structured exchange programmes enabling apprentices to gain global work experience.
- Create dedicated training centres of excellence aligned with WorldSkills and international benchmarks.
- Offer scholarships and career advancement incentives for medal-winning candidates.
- Embed global competition benchmarks into vocational curricula and assessments.

Actors or Stakeholders Responsible

- MSDE (NSDC, SSCs), SSDMs
- MEA
- International industry partners

Performance and Success Indicators

- Number of apprenticeship/vocational programmes incorporating international training modules.
- Number of bilateral agreements signed which incorporate provision for apprenticeship exchange
- Count of apprentices and trainees participating in international exchange programmes
- Medals and rankings secured in global skill competitions.
- Feedback from apprentices, trainees, and host employers on skill development, adaptability, and cross-cultural competencies.
- Recognition and portability of jointly

certified skills across partner countries.

- Enhanced training standards aligned with global benchmarks.

7.6.5. Enhancing women inclusion in apprenticeship programmes

While women's participation in apprenticeship has improved over the years, there remains scope to increase women's participation in the apprenticeship programme. A targeted approach that includes additional direct financial incentives, for women apprentices, can significantly improve participation. Complementary measures like gender-sensitive infrastructure (e.g. female restrooms), simplified onboarding on NAPS/NATS portals, and outreach in underserved areas further support inclusivity. Digital and virtual apprenticeship models should be explored in sectors such as IT, software services, banking, and finance, which could also be beneficial to women.

Models like Odisha's Sudakshya Scheme demonstrate the effectiveness of such strategies. Encouraging women-led MSMEs and integrating apprenticeship awareness into girls' education institutions will collectively foster gender equity, enhance retention, and build a more diverse and empowered workforce.

Implementation Roadmap

Short-Term (0–12 Months)

- Launch State-level pilot initiatives modelled on Odisha's Sudakshya Scheme in States and districts with the lowest female participation.
- Provide additional financial incentives for female apprentices.
- Simplify registration on apprenticeship portal via mobile-based and multilingual interfaces.
- Build awareness through targeted community campaigns in rural, tribal, and underserved urban areas.
- Train apprenticeship counsellors and placement officers in gender-responsive onboarding.

Long-Term (1–3 Years)

- Institutionalize women-friendly infrastructure standards (e.g., restrooms, secure transport)
- Promote career orientation programmes that create awareness on apprenticeships in girls' schools, ITIs, and colleges.
- Develop gender-disaggregated real-time monitoring of enrolment, dropouts, and completion rates.
- Incorporate women-led MSMEs in apprenticeship framework, using cluster-based mobilization to engage informal employers.

Actors Responsible

- MSDE (DGT, NSDC, SSCs), SSDMs
- MoWCD, Women & Child Departments in States
- Employers, Women's Industry Associations

Performance Metrics

- Percentage increase in female enrolments, completions, and retention in NAPS/NATS
- Number of districts implementing gender-responsive apprenticeship pilots
- % of employers adopting gender infrastructure standards and claiming incentives
- Participation rate in DBT schemes and outreach activities

Conclusion

The recommendations outlined in this chapter provide a clear and actionable roadmap for mainstreaming and modernizing apprenticeships in India. By anchoring reforms in four pillars viz. policy and system, structure and regulation, industry and employer engagement, and apprentice and aspirant empowerment. India can create a seamless continuum between education and skilling. Initiatives such as a unified National Apprenticeship Mission, integration with the startup ecosystem, and credit-linked pathways through the NCrF are poised to transform the apprenticeship experience, making it more accessible, attractive, and impactful.

Structural innovations like the Apprenticeship Engagement Index, District Skill Committees, and localized apprenticeship hubs hold potential to drive quality and accountability, while industry-focused measures can ensure that apprenticeship programmes remain relevant, dynamic, and aligned with both domestic and global opportunities. Equally important is to place apprentices and aspirants at the heart of the ecosystem providing them with mobility, support, and recognition, and fostering an environment where talent from all backgrounds can thrive.

Revitalizing India's apprenticeship ecosystem is not just a policy imperative, it is a strategic investment in the nation's human capital. By strengthening existing initiatives and introducing some new ones, India can bridge the gap between education and employment, unlock the potential of its demographic dividend, and position itself as a global leader in skills and innovation. The journey ahead demands collaboration, commitment, and courage. With a revitalized apprenticeship framework, India will be well equipped to meet the challenges and seize the opportunities presented by the future of work.

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Annexure 1

Literature Review: Key Findings from Recent Studies on Apprenticeship in India

1.1. Jobs & Skills: Sector Report by DMEO, NITI Aayog, GoI published in 2021.

1.1.1 Research Methodology

The report employed a nationally representative mixed-methods evaluation framework, combining both qualitative and quantitative approaches. This methodological choice reflects a careful effort to balance breadth and depth, aiming to generate robust, triangulated evidence across schemes and sectors. On the quantitative side, the study drew upon structured surveys covering 1,682 respondents under schemes like the Pradhan Mantri Rojgar Protsahan Yojana (PMRPY) and National Career Service (NCS), with a detailed sampling strategy designed to capture State-level and scheme-level performance. On the qualitative side, the team conducted 264 Key Informant Interviews (KIIs) with stakeholders ranging from central and State officials to scheme implementers, along with 65 FGDs to capture nuanced, context-specific insights.

The multi-layered analytical design stands out as a particular strength. The evaluation was structured across three levels: sector, umbrella scheme, and individual scheme, allowing the analysis to capture systemic patterns as well as scheme-specific dynamics. The methodology explicitly adhered to the REESI+E framework (Evaluating Relevance, Effectiveness, Efficiency, Sustainability, Impact, and Equity) which provided a structured, multi-dimensional assessment. This framework was complemented by cross-sectional themes such as gender mainstreaming, inclusion, industry linkages, and use of technology, reflecting an awareness of broader social and institutional factors.

Another commendable feature was the consultative review process, where draft reports were circulated among subject experts, concerned ministries, and external reviewers to incorporate feedback and ensure technical robustness. This iterative validation, combined with third-party data collection by professional agencies (KPMG and Hansa Research), added credibility and operational rigour to the research process. The key findings from this report are given below.

1.1.2 Policy and System

- Limited Integration: There is currently no clear pathway for candidates from Short-Term Training (STT) Programmes like PMKVY and DDU-GKY to integrate/ participate with the apprenticeship systems.

1.1.3 Structural and Regulatory

- Low Awareness and Uptake: Despite the existence of schemes like NAPS, there is a lack of awareness about them among organizations. The India Hiring Intent Survey indicated that only 64% of organizations were aware of the apprenticeship scheme, and only 56% of these had registered for it.

1.1.4 Industry and Employer

- Limited Industry Involvement: There is insufficient linkage with employers and the private sector in the skilling process, including apprenticeships. Industry participation is often limited, with companies acting more as customers of skilled labour rather than being effectively involved in the skilling process. A lack of appropriate incentives for private players to offer sector-specific employer-led training contributes to this.

1.1.5 Apprentices and Aspirant

Lack of awareness: Despite the implementation of schemes, there is a lack of awareness of these schemes among organizations and implementers, leading to uncertainty in the implementation of the Apprentices Act, 1961.

1.2 33rd Report by the Standing Committee on Labour, textile and Skill Development on Implementation of National Apprenticeship Promotion Scheme (NAPS)/ National Apprenticeship Training Scheme (NATS), (2021-22)

1.2.1 Research Methodology

The Thirty-Third Report of the Standing Committee on Labour, Textiles, and Skill Development employs a formal parliamentary examination methodology grounded in documentary review, oral evidence, and inter-ministerial consultations. The Committee undertook its assessment of the implementation of the NAPS and the NATS by systematically collecting evidence from key institutional actors, including the MSDE and the MoE (Department of Higher Education).

The methodology included analysis of administrative data drawn from official portals such as apprenticeshipindia.gov.in, providing quantitative insights into apprentice registration, engagement, and completion rates across States and sectors. The Committee also engaged with national-level reports, audit findings, and monitoring updates to assess scheme performance. By integrating qualitative insights from stakeholder consultations with quantitative data on scheme progress, the Committee constructed a holistic evaluation framework.

1.2.2 Policy and System

- Coordination Between Parallel Apprenticeship Schemes: While both the NAPS under the MSDE and the NATS under the DHE, MoE, share the objective of enhancing youth employability through apprenticeship training under the Apprentices Act, 1961, they operate under separate administrative frameworks. NATS primarily caters to engineering and general stream graduates and diploma holders, whereas NAPS focuses on other categories. This division presents an opportunity to strengthen inter-ministerial coordination and align efforts to build a more integrated and efficient apprenticeship ecosystem.
- Incentive-Based Stipend Support: Both schemes offer financial incentives to employers by sharing a portion of the stipend paid to apprentices. NATS reimburses 50% of the minimum stipulated stipend for eligible categories, while NAPS shares 25% up to a maximum of ₹1,500 per month. NAPS also shares basic training costs for some apprentices.
- Web Portals and Integration Efforts: NAPS and NATS currently operate with separate web portals for managing apprenticeship training. There are ongoing efforts to integrate these portals to avoid overlapping registrations and simplify processes for users.
- Disparity in Stipend Reimbursement: A key difference lies in the stipend reimbursement rates, with NATS offering a higher percentage (50%) for engineering graduates and diploma holders compared to NAPS (25% maximum) for most categories, including non-technical degrees and diplomas. There is a recognised need to bring parity to these rates.

1.2.3 Structural and Regulatory

- Need for Enhanced Engagement: Despite the schemes, the number of establishments actively engaging apprentices remains low compared to the total registered. There is a need for better industry interface and incentivization to increase participation.
- Focus on Quality and Monitoring: Monitoring mechanisms are in place involving various agencies like DGT, NSDC/SSCS, State Apprenticeship Advisors, and BOAT. Strengthening these mechanisms and ensuring the quality of training are crucial.
- Integration with Education and Skilling: Efforts are being made to integrate apprenticeships with higher education programmes and short-term skilling initiatives to improve employability and provide pathways for further skill development.

1.3 35th Action Taken Report by the Standing Committee on Labour, textile and Skill Development on Implementation of National Apprenticeship Promotion Scheme (NAPS)/ National Apprenticeship Training Scheme (NATS), (2021-22)

1.3.1 Research Methodology

The Thirty-Fifth Report of the Standing Committee on Labour, Textiles, and Skill Development employs a structured and rigorous parliamentary review methodology, grounded in formal procedures of legislative oversight. The Committee draws its methodological foundation from the systematic examination of government actions taken on recommendations presented in its earlier Thirty-Third Report concerning the implementation of the NAPS and the NATS.

The Committee bases its research approach primarily on the analysis of documentary evidence, including action-taken notes furnished by the MSDE and the MoE (Department of Higher Education). In addition to the review of official written submissions, the Committee conducts detailed deliberations and adopts draft reports through formal sittings, ensuring that collective parliamentary judgment shapes the final outputs. The report explicitly references periodic assessments, such as regular monitoring meetings, quarterly reviews by Boards of Governors, half-yearly reviews by the MoE, and efficacy studies (e.g., conducted by NILERD, NITI Aayog), integrating institutional feedback loops into its evaluation.

The Committee also examines operational aspects of the schemes, including the functioning and integration of digital portals, financial disbursement mechanisms (e.g., stipend payments), outreach campaigns, and stakeholder engagement strategies such as apprenticeship fairs and workshops. The report demonstrates an iterative engagement process, where earlier recommendations are revisited, and corrective measures or new directions are proposed based on the government's reported actions.

By combining administrative data, inter-ministerial consultations, formal parliamentary deliberations, and analysis of implementation challenges, the Committee constructs a multi-dimensional evaluation framework.

1.3.2 Policy and System

- Monitoring and Assessment of NAPS and NATS: The Committee noted the periodic assessments by MSDE and the Department of Higher Education. They desire the continuation and escalation of this monitoring. The Committee wants to be informed about the outcome of the NILERD efficacy study on NATS and the subsequent systemic improvements.
- Government's Response to Earlier Recommendations: There were total 15 recommendations in the 33rd Report. 10 were accepted by the Government. 2 were not pursued by the Committee. 3 required reiterations due to non-acceptance.

1.3.3 Structural and Regulatory

- Integration of Web Portals: The Committee observed the separate web portals for NAPS and NATS and noted the initiated action for integration. Finding the Government's reply vague, they exhorted MSDE to ensure effective integration to avoid overlapping registrations. This is a reiteration of a previous recommendation.

1.3.4 Industry and Employer

- Involvement of Public Representatives: The Committee appreciated MSDE's involvement of public representatives. They urged the Department of Higher Education to invariably involve public representatives in their workshops for valuable feedback. This is a reiteration of a previous recommendation.

1.3.5 Apprentices and Aspirant

- Enhancement in Stipend for NATS Apprentices: The Committee noted the implementation of revised minimum stipends from April 1, 2021. They expressed concern about prior underpayment and emphasized the need to ensure payment of the revised stipend with retrospective effect from April 1, 2021. The Committee reiterated their earlier recommendation for further enhancement of the monthly stipend to ₹18,000 for Graduate Engineers and ₹15,000 for Diploma Holders.
- Publicity and Awareness Campaigns: The Committee appreciated MSDE's efforts in organising workshops and Apprenticeship Melas. The Committee reiterated the importance of including apprenticeship as an essential component after short-term training.

1.4 49th Report by the Standing Committee on Labour, textile and Skill Development

1.4.1 Research Methodology

The Forty-Ninth Report of the Standing Committee on Labour, Textiles, and Skill Development applies a formal parliamentary review methodology. The Committee conducted its examination of the functioning of the DGT under the MSDE by systematically gathering evidence through both written and oral procedures.

The Committee's research process involved collecting and reviewing extensive background materials, action-taken notes, post-evidence written replies, and data submissions provided by the Ministry. The Committee complemented this documentary review with oral evidence taken from ministry representatives during formal sittings, thereby ensuring that deliberations were grounded in both administrative data and institutional perspectives. This combined evidence base enabled the Committee to analyse multiple dimensions of policy implementation, such as institutional performance, administrative challenges, infrastructural development, instructor recruitment, training quality, and scheme-specific outcomes.

The Committee also drew upon third-party evaluations and independent assessments of DGT-administered schemes, such as evaluations conducted by the National Productivity Council, Indian Institute of Public Administration, National Institute of Labour Economics Research and Development (NILERD), and Indian Institute of Management Indore. The Committee also engaged with national-level reports, such as NITI Aayog's assessment on transforming Industrial Training Institutes (ITIs), integrating cross-institutional perspectives into its analysis.

1.4.2 Structural and Regulatory

- Lack of comprehensive placement data for ITI pass-outs: DGT lacks readily available employment outcome data, as uploading placement details on the NCVT portal is not mandatory for ITIs.
- Keeping pace with technological changes and industry requirements: Despite the introduction of new-age courses, there is a gap in aligning training programmes and curricula with current employment demands.
- Shortage of instructors in ITIs: A high percentage of sanctioned instructor posts are vacant in both Government and Private ITIs; monitoring compliance with norms in private ITIs is also difficult.
- Ensuring all trainers are CITS trained: Although mandated by NCVET, a significant number of trainers still lack the CITS qualification.
- Monitoring the large number of ITIs effectively: With 14,953 ITIs, including 11,707 private ones, ensuring quality and adherence to norms is a major challenge.
- Challenges in monitoring the quality of training in Private ITIs: State

Governments and RDSDEs face difficulty in overseeing quality training delivery due to the volume of institutions.

1.4.3 Apprentices and Aspirant

- Lower demand for new-age courses compared to traditional trades: Despite the relevance of Industry 4.0 courses, students still prefer traditional trades, limiting diversification.
- Low enrolment in ITIs: Low fill rates in Government and Private ITIs (59.18% and 39.52% respectively) suggest issues like poor awareness, limited placement opportunities, etc.

1.5 Efficacy and Impact of NATS – All India Study by National Institute of Labour Economics Research and Development (NILERD) in Dec 2019.

1.5.1 Research Methodology

The NILERD report titled "Efficacy and Impact of National Apprenticeship Training Scheme (NATS) – All India Study" employs a comprehensive and methodologically rigorous mixed-methods research design to assess the implementation, outcomes, and challenges of NATS across India. Sponsored by the Ministry of Human Resource Development (MHRD), the study covers all States and UTs and integrates both quantitative and qualitative research components to generate evidence-based insights.

The research team, led by NILERD, designed a nationally representative sampling framework that systematically included all key stakeholders: BoAT/BoPT, industrial establishments, educational institutions, on-roll apprentices, and ex-apprentices. Establishments were stratified into CPSUs, SPSUs, and private sector firms, ensuring coverage of both public and private actors.

Primary data collection was conducted using structured and open-ended questionnaires tailored to each stakeholder group. Additionally, the researchers employed qualitative techniques, including focused group discussions (FGDs) and informal debates, particularly coordinated through BoAT officials across all four geographic regions (Northern, Southern, Eastern, and Western). This multi-stakeholder, multi-region approach ensured that both demand-side (employers) and supply-side (educational institutions and trainees) perspectives were adequately captured.

Quantitative data encompassed detailed variables such as seat allocations, utilization rates, stipend disbursement patterns, demographic profiles of apprentices, and post-training employment outcomes, disaggregated by region, gender, and social category. These data were systematically analysed using descriptive statistical methods to generate comparative insights across regions and sectors.

The study also incorporated secondary data analysis, drawing upon past evaluations, administrative records, and national-level monitoring reports. By triangulating findings from primary and secondary sources, the research ensured both analytical depth and validity. Importantly, the study aligned its evaluation framework with the broader objectives of NATS, including assessing alignment with national policy goals, Sustainable Development Goals (SDGs), and skill gap mitigation.

1.5.2 Policy and System

- Policy Push Post-2014 - The 2014 amendment to the Apprentices Act, 1961 aimed at scaling apprenticeship numbers to 1 crore, setting the stage for rapid expansion.

1.5.3 Industry and Employer

- Industry Endorsement of NATS - Employers recognize NATS as filling structural skill gaps, especially by building theoretical, analytical, and practical capabilities.

1.5.4 Apprentices and Aspirant

- Apprenticeship Bridges Skill Gaps - Apprenticeship programmes effectively align industry needs with labour market skills, offering hands-on experience and certification to enhance job readiness.
- NATS Targets Practical Training - The NATS addresses the lack of practical exposure among engineering graduates, diploma holders, and vocational pass-outs.
- High Employability Outcomes - NATS boosts job prospects—73% of surveyed ex-apprentices secured wage employment, proving it to be a cost-effective, outcome-driven scheme.
- Positive Trainee Feedback - Nearly 82% of ex-apprentices rated NATS as useful in gaining employment, reflecting strong trainee satisfaction and scheme relevance.
- Significant Skill Upgradation - Trainees reported a jump in skills from 25–50% at entry to over 75% post-training, showing NATS' effectiveness in real skill enhancement.
- Strong Job Placement Rates - Around 79% of apprentices find employment after training, validating apprenticeships as a pathway to formal workforce inclusion.

1.6 Report on "Implementation of Apprenticeship in India", FICCI (2019)

1.6.1 Research Methodology

The report "Implementation of Apprenticeship in India" by FICCI uses a multi-layered research methodology combining secondary research, stakeholder consultations, and empirical case studies. It relies on an extensive review of policy documents, global benchmarks, regulatory frameworks, and industry reports to contextualize India's apprenticeship system.

Structured consultations with key stakeholders—including MSDE, NITI Aayog, SSCs, DGT, industry leaders, and international agencies like ILO and World Bank—provide sector-specific insights and validate findings. The study also integrates select case studies from companies like Mahindra & Mahindra, ONGC, TCS, NHPC, and Indian Oil, showcasing practical applications and outcomes under the Apprentices Act, NAPS, and NATS. Additionally, the report uses FICCI's sectoral survey data to capture quantitative trends on employer participation, perceived benefits, productivity impacts, and retention outcomes.

1.6.2 Policy and System

- Underutilization Despite Longstanding Legislation - Although the Apprentices Act was enacted in 1961, repeated amendments have not enabled full utilization due to persistent systemic gaps and implementation hurdles.
- Systemic and Regulatory Challenges Persist - Complex procedures, outdated legal provisions, and limited infrastructure have slowed industry and youth participation in apprenticeship programmes, despite policy support.

1.6.3 Structural and Regulatory

- Shift Needed from Academic-Only Models - The report calls for reducing dependency on classroom-based learning and adopting apprenticeships as a cost-effective and practical model for delivering job-ready skills.
- Fragmentation in the Skill Ecosystem - The skill development landscape is scattered across numerous ministries and departments, leading to inefficient coordination and policy overlap.
- Compliance Gaps Highlighted in FICCI Survey - FICCI's 2018 survey found that large firms benefited more from apprenticeship programmes than smaller ones, which struggled with compliance and reporting procedures.

1.6.4 Industry and Employer

- Proven Benefits for Employers and Apprentices - International evidence shows that apprenticeships ease entry into employment for youth and offer

firms higher productivity and retention, making them a mutually beneficial investment.

- SME Participation Remains Marginal - Small and Medium Enterprises face financial and technical constraints, limiting their ability to contribute to apprenticeship training despite being major employment generators.
- Sectoral Skew Towards Manufacturing - Apprenticeship programmes remain largely confined to ITI graduates and the manufacturing sector, while the services sector, with high employment potential, remains underexploited.

1.6.5 Apprentices and Aspirant

- Apprenticeship as a Viable Transition Pathway - Apprenticeships are acknowledged as a structured, real-work training model that strengthens youth employability and contributes to economic development by bridging the school-to-work divide.
- Multiple barriers for Apprentices - Key bottlenecks include low awareness among stakeholders, unclear career progression for apprentices, lack of training infrastructure, and missing provisions for informal sector integration.

1.7 Future of Apprenticeship in India, (Team Lease Tech, 2023)

1.7.1 Research Methodology

The report "Future of Apprenticeship in India" employs a structured, mixed-methods research approach combining quantitative surveys, institutional data analysis, and qualitative insights. The research team at TeamLease EdTech conducted a national survey involving over 110 universities and higher education institutions to assess the role of degree apprenticeships in improving employability, financing education, and addressing skill gaps.

The methodology integrates survey data capturing institutional perceptions on the benefits, financing models, and labour market outcomes of degree apprenticeships. This quantitative data is complemented by qualitative insights gathered from industry leaders, university vice-chancellors, and policy stakeholders, providing a multidimensional understanding of the apprenticeship landscape.

The report also conducts comparative analysis by benchmarking India's apprenticeship participation rates against global peers such as Germany, the UK, and the USA, using data from international statistical sources[10]. Additionally, it incorporates recent industry outlook reports (e.g., NETAP Apprenticeship Outlook) to identify employer trends, stipend ranges, and return on investment perceptions related to apprenticeships.

1.7.2 Policy and System

- India vs. Other Countries: India has a low apprenticeship penetration rate of about 0.11% compared to Germany[11] (2.96%), the UK[12] (2.1%), USA[13] (0.39%), and Australia[14] (1.6%). Despite the low penetration, India is witnessing rapid growth in apprenticeship adoption.

1.7.3 Industry and Employer

- Apprenticeships as a Solution for Supply Chain Challenges: Apprenticeships provide a structured pathway for training individuals in specific trades and skills required by supply chain sectors, enhancing workforce competency and productivity. Apprenticeships reduce hiring costs and improve retention rates. These programmes offer comprehensive training, combining theoretical knowledge with practical experience.
- Return on Investment (ROI) from Degree Apprenticeships: 61% of

[10] Data Sources: World Bank and NATS, 2021, apprenticeshipindia.gov, OECD 2021
[11] German Federal Statistical Office, 2021
[12] Apprenticeship Statistics, House of Commons Library, UK. 2021
[13] U.S. Department of Labour, Employment and Training Administration, 2020
[14] National Centre for Vocational Education Research, Australia, 2020

employers perceive a higher ROI from degree apprenticeships than other categories, indicating their effectiveness in workforce development. These programmes enhance productivity, reduce attrition, and provide a cost-effective way to create talent, aligning with industry needs.

1.8 Apprenticeship Outlook Report by TeamLease in Jan-March quarter, 2025

1.8.1 Research Methodology

The Apprenticeship Outlook Report (Jan–Mar FY 2025) adopts a rigorous and structured research methodology that combines quantitative and qualitative approaches to examine industry apprenticeship trends. The study employs a random stratified sampling technique to ensure representative coverage across industries, cities, and business sizes. Specifically, the sampling design focuses on HR managers, HR heads, business owners, and directors as target respondents, recognizing their critical role in apprenticeship decision-making.

Data collection was executed through the valuvox® mobile survey application, which facilitated the efficient administration of the survey instrument to 714 respondents, all of whom reported intentions to engage apprentices in the January–March 2024–25 quarter. To complement the quantitative survey, the report integrates qualitative insights gathered through four in-depth expert interviews—two from the manufacturing sector and two from the services sector. This combination strengthens the analysis by blending empirical data with sectoral perspectives.

Moreover, the report draws upon multiple secondary sources to enhance contextual understanding, including official data from the MSDE (via the NAPS portals), the MoE (via the NATS portal), and legal frameworks such as The Apprentices Act, 1961.

1.8.2 Policy and System

- Degree Apprenticeships Shape New Pathways - Degree-linked apprenticeships are redefining non-technical vocational education, combining academic learning with industry exposure.
- Diversity and Inclusion Take Centre Stage - There is growing emphasis on increasing female and LGBTQIA+ participation, aiming to make apprenticeships more inclusive.

1.8.3 Industry and Employer

- Positive Growth Trend Continues - NAO has steadily grown from 56% in Jan–Jun 2022, recording a 10.7% CAGR, signalling consistent employer interest in apprenticeships.
- IT & BPM Sector Leads the Surge - With an 88% NAO, the IT & BPM sector shows the highest apprentice engagement for the Jan–Mar 2025 quarter. Bengaluru tops as the leading city.
- Biotech and Pharma See Strong Gains - The Biotech, Pharma & Life Sciences sector recorded a 77% NAO, with Pune and Bengaluru emerging as key hubs for apprentice engagement.
- Apparel Sector Expands Talent Pool - Leather, Textiles & Apparel reached a 72% NAO, driven by a focus on talent expansion and gender diversity.
- Capital Goods Sector Builds Skills Efficiently - With a 58% NAO, the Capital Goods industry emphasizes cost optimization and skill-building. Top cities include Chennai and Pune.
- Chemical Industry Prioritizes Cost and Talent - Apprentice hiring in the Chemical sector is motivated by talent development and cost efficiency, with Mumbai and Ahmedabad showing strong activity.
- Talent Pool Creation is a Core Driver - Across sectors, the primary motivation

for engaging apprentices is to build or augment a future-ready talent pipeline.

1.8.4 Apprentices and Aspirant

- Apprenticeship Outlook Hits All-Time High - The Net Apprenticeship Outlook (NAO) surged to 76% for Jan–Mar 2025, up from 68% in the previous half-year, indicating rising momentum for apprenticeships in India.
- Tackling Social Stigma Around Apprenticeships - The report stresses public awareness campaigns and success stories to challenge outdated perceptions and promote apprenticeships as aspirational career paths.

1.9 India Skills Report 2025 by Wheebox

1.9.1 Research Methodology

The India Skills Report 2025 employs a rigorous, multi-layered research methodology that integrates quantitative and qualitative approaches to assess employability trends and hiring intentions across India. The research combines two complementary surveys: the Wheebox Global Employability Test (G.E.T) and the India Hiring Intent Survey – Early Career Edition 2025.

The G.E.T. involved an extensive online skill assessment of over 650,000 students from diverse educational backgrounds, capturing wide-ranging demographic and skill-related data. This component applied structured survey designs, statistical methods, and psychometric evaluations to assess educational domain alignment, technical and non-technical skills, State and city-specific employability, gender-based trends, salary expectations, and internship interest. Careful attention was given to data representativeness, using statistical safeguards to avoid bias and polarization, ensuring that insights accurately reflected the broader student population.

The India Hiring Intent Survey gathered insights from more than 1,000 corporate respondents across 15 industries, using an online platform between September and November 2024. This segment examined industry-specific recruitment trends, regional hiring patterns, preferred experience brackets, and the demand for emerging skills among early-career professionals. It incorporated both quantitative metrics and qualitative insights to forecast hiring expectations for 2025.

1.9.2 Policy and System

- Apprenticeships Aid School-to-Work Transition - Global research shows apprenticeships ease the shift from education to employment, increasing the likelihood of job placement in both formal and informal sectors.

1.9.3 Industry and Employer

- Focus on Employability Skills: The report extensively discusses the employability of Indian talent based on the G.E.T., highlighting the skills and domains where graduates perform well. Apprenticeships are a key pathway to developing and enhancing these employability skills.

1.10 Report on Reimagining Employability for the 21st Century by JustJobs Network and TeamLease, (August 2022)

1.10.1 Research Methodology

The report employs a qualitative and analytical research methodology grounded in secondary data analysis, expert consultation, and international benchmarking. The authors systematically compile and examine existing national datasets, including sources such as the All-India Survey on Higher Education (AISHE), the National Statistical Office's reports, and the Periodic Labour Force Survey (PLFS), to assess the State of employability, skills, and apprenticeship systems in India.

The methodology emphasizes a structured inventory analysis across three key dimensions: education, skills training, and

socio-economic background, to evaluate employability outcomes. By critically reviewing government policies, legislative frameworks (such as the Apprentices Act, 1961 and its amendments), and institutional architectures, the report develops an integrated understanding of structural bottlenecks in India's apprenticeship landscape. It further incorporates comparative international experiences by examining apprenticeship systems in Germany, Australia, Switzerland, South Korea and the United States to contextualize the Indian experience within global best practices.

Additionally, the report integrates stakeholder insights gathered through consultations with industry leaders, policy experts, and educational institutions. This approach strengthens the analytical foundation of the study by blending data-driven insights with practitioner perspectives. The report applies iterative goal-setting and scenario analysis to propose actionable policy recommendations aimed at expanding degree-linked apprenticeships and bridging the education-to-employment gap. Overall, the methodology reflects a multidimensional, evidence-based approach that combines policy analysis, institutional review, and comparative learning to inform a roadmap for large-scale apprenticeship reform in India

1.10.2 Policy and System

- Apprenticeships are crucial for providing better choices to India's youth: The current supply-driven model of skills training is insufficient. Skills aligned with market demand and work experience through apprenticeships offer better choices to India's youth.
- The governance of apprenticeships is complex and needs streamlining: The involvement of multiple ministries (MSDE, MoE) and implementing bodies (DGT, NSDC) creates a complex governance architecture.
- Degree-linked apprenticeships in higher education are a promising starting point: Higher education institutions offer tremendous potential for promoting degree-linked apprenticeships due to longer training durations, better alignment with larger employers' needs, and students' access to technology.
- International experience highlights the value and diverse approaches to apprenticeships: Examining systems in Germany, the United States, Australia, and Switzerland provides valuable lessons on effective apprenticeship models, such as the dual system training programme.

1.10.3 Structural and Regulatory

- A significant gap exists between education, training, and employment: The report highlights a widening chasm between education, training, and employment in India. This is compounded by technology and pandemic altering the job market faster than educational institutions can adapt.
- The regulatory and administrative burden is a deterrent: Companies, especially MSMEs, find the regulatory and administrative burden of engaging in apprenticeship programmes discouraging.

1.10.4 Apprentices and Aspirant

- Education alone is no longer a guaranteed path to employment: Despite gains in enrolment and literacy, the current systems' inadequacies hinder the realisation of India's demographic advantage. Notably, a greater share of the unemployed have higher levels of education.
- There's an aspirational bias towards academic education: A deep-seated bias favouring academic education over vocational training hinders the uptake of apprenticeships.

Annexure 2

Roundtable Discussion on Strengthening Apprenticeship Training Organized by SDE Division, NITI Aayog

Roundtable Discussion on Strengthening Apprenticeship Training

Sr. No.	Type of Stakeholder	Organization	Name	Designation
1.	Central Ministry/ bodies	MSDE (NAPS)	Shri Shreeshail Malge	Joint Secretary, Apprenticeship Training, MSDE
2.			Shri V.S Arvind	Director
3.		NSDC	Shri Mahendra Payaal	Chief Programme Officer, NSDC
4.	States	Maharashtra (SSDM)	Dr. Anil Jadhao (online)	Joint Director & Joint Apprenticeship Advisor, Directorate of Vocational Education and Training, Maharashtra State
5.		Gujarat (SSDM)	Mr. A C Palas	Asst. Director (Training), Apprenticeship Division
6.		Tamil Nadu	Dr. M Jayaprakasan, (online)	CEO Naan Mudhalvan
7.	International and Multilateral Institutions	ILO	Mr. Gabriel Bordado	Skill & Employability Specialist
8.			Ms. Ruchira Chandra	Programme Officer
9.		GIZ	Sh. K VL Narasimham	Senior Advisor
10.		FICCI	Dr. Rajesh Pankaj	Director & Head -Education & Skills
11.			Ms. Deepti Singh	Joint Director-Skills
12.	Industry Experts/ Pvt Organization	HR Engineers India Limited	Ms. Veena Swarup	Former Director HR Engineers India Limited
13.		Tata Motors	Mr. Sushil Warand, (online)	Dy Manager, TATA motors,
14.		Ques Corps	Lohit Bhatia (online)	President - Workforce Management
15.		nasscom	Rohit Henry	Manager
16.			Aaquib Suhail	Manager
17.		SSCs-Retail	Mr. R Subramanian (online)	Assistant Vice President (AVP) - Head – Industry & Partner Engagement
18.		EduVantage	Shri Abhishek Pandit	Director
19.		Toyota Learning & Development India	Mr. Gaurav Mehta	General Manager
20.			Mr. Philip George (online)	Human Resources and Services Group Toyota Kirloskar Motor, Bidadi, Bangalore
21.			Mr. J Darshan (Online)	Deputy Manager, External Affairs
22.		TeamLease	Mr. Sumit Kumar	Chief Strategy Officer

Annexure 3

State Consultation for Strengthening Apprenticeship Organized by SDE Division, NITI Aayog

State Consultation for Strengthening Apprenticeship

S.no	State	Name	Designation
1	Telangana	Mr. Nagesh	Joint Director, Department of Employment and Training
2	Andhra Pradesh	Sri N. Solomon	Assistant Director
3	Delhi	Mr. Rajesh	Additional Director, RDSDE
		Mr. Mohammad Hussain B	Deputy Apprenticeship Advisor
4	Uttar Pradesh	Rajendra Prasad	Additional Director
		P K Shakyawar	Dy Director
5	Karnataka	Shri BL Chandrashekran	Joint Director
6	Odisha	Shri Deepak Ranjan Patnaik	Sr Lecturer and OIC Apprenticeship Training
7	Madhya Pradesh	Shakti Singh	Apprenticeship Advisor
8	Assam	Mr. Atul Kumar	Apprenticeship Advisor
9	Haryana	Mr. Parveen Verma	Project Manager HSDM

NOTES

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