India’s Automobile Sector and Skilled Workers Gap

Mains: *GS III – Indian Economy*

Why in News?

India’s automobile production is projected to rise from 30–35 million units in FY25 to 50–55 million by 2030, but the shift towards EVs, automation and advanced electronics is creating a growing skilled workforce gap in the sector.

What is the Current Skill Gap in the Automobile Sector?

- **Rising demand for skilled manpower –**
  - The Boston Consulting Group (BCG) and Automotive Component Manufacturers Association of India (ACMA) report (2026)
    - It estimates that the Pune automobile cluster requires around **27,000 new skilled workers annually**.
  - However, ITIs, polytechnics and Automotive Skills Development Council centres produce only **5,000 relevantly trained candidates annually**.
  - The gap is therefore not merely about the number of workers but also about their **technical competence and practical exposure**.
- **Limited technical education –** According to NCAER studies based on **PLFS 2022–23**:

Sector	Workers with no technical education
Auto parts & accessories manufacturing	**57.3%**
Vehicle manufacturing	**53%**
Vehicle repair & maintenance	**93.3%**

- **Changing Nature of Automobile Jobs –** The automobile factory is shifting from conventional mechanical manufacturing towards **digitally integrated production system**.
  - **Traditional skills**
    - Machining
    - Welding
    - Assembly
    - Fitting
    - Maintenance
    - Quality control
  - **Emerging skills**
    - Battery technology

- Electric motors and power electronics
- Mechatronics
- Industrial robotics
- Automation
- Advanced CNC machining
- Digital manufacturing
- Thermal management
- Vehicle electronics
- ADAS and connected technologies

Why Does the Skill Mismatch Exist?

- **Industry-academia disconnect –** Curricula in many ITIs and technical institutions have not evolved at the same pace as automobile technology.
- **Shortage of practical training –** Employers require workers who operate **advanced machinery, robots**, but many candidates lack adequate shop-floor exposure.
- **Technologies outpace training capacity –** Courses in **battery systems, robotics, automation and mechatronics** remain relatively limited.
- **Shortage of qualified trainers –** Modern manufacturing requires trainers familiar with Industry 4.0 technologies, but there is a trainer capacity gap.
- **Low attractiveness of vocational education –** Vocational and industrial training often face lower social preference compared with conventional academic degrees.
- **Rapid technological transition –** The simultaneous growth of **EVs, AI-enabled manufacturing, electronics** is rising the complexity of skill requirements.

What are the Government Initiatives taken in this regard?

- **National Apprenticeship Promotion Scheme 2.0 (NAPS 2.0) –** It promotes apprenticeship-based training in **actual industrial work environments**.
  - It provides practical exposure and improves industry readiness.
- **PM-SETU (Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs)** seeks to modernise India's ITI ecosystem.
  - Upgradation of **1,000 government ITIs**.
  - Focus on industry-aligned courses and stronger industry linkages.
  - Target to train **20 lakh youth over five years**.
- **Modernisation of ITI Courses –** New/revised courses include:
  - Advanced CNC Machining Technician
  - Industrial Robotics and Digital Manufacturing
  - Manufacturing Process Control & Automation
  - Mechanic Electric Vehicle
  - Technician Mechatronics
- **Industry-led training –** The **DGT–Bajaj Auto Flexi-MoU** provides industry-aligned training directly at manufacturing facilities.
  - It combines **classroom learning & shop-floor exposure**, covering areas such as: Automotive assembly, manufacturing, automotive painting etc.

What could be done?

- **Move Supply to demand-driven skilling –** Skill programmes should be based on **real-time industry demand**, especially at regional automobile clusters.
- **Strengthen Industry–ITI partnerships –** Automobile companies should participate in
    - **Curriculum design, trainer development, equipment provision and apprenticeships**.
- **Promote modular and lifelong learning –** Workers must be enabled to periodically upgrade their skills in **emerging technologies.**
- **Create cluster-based skill ecosystems –** Major automobile hubs such as **Pune, Chennai, Gurugram-Manesar and Sanand** can develop specialised skill centres.
- **Focus on practical competency –** Assessment should move beyond certificates towards **demonstrable shop-floor skills**.
- **Strengthen trainer capacity –** Training-of-trainers programmes should focus on emerging technologies and modern manufacturing equipment.
- **Encourage women and youth participation –** Greater participation of women and young workers in technical occupations can help expand the skilled labour pool.

What lies ahead?

- India's automobile challenge is not simply a shortage of workers but a shortage of workers with the right skills at the right locations.
- As the country seeks to be a global automotive manufacturing hub, the skilling ecosystem must evolve from conventional training towards
    - EV technology, electronics, mechatronics, robotics, automation and digital manufacturing.

Reference

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