

## Research Stream

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### The Dual Challenge of India's Structural Transition: Analyzing Employment Growth, Informality, and Skill Mismatch using PLFS and NITI Aayog Data (2017–2024)

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#### Abstract

This paper examines the complex dynamics governing employment generation and skill development in India between 2017 and 2024, focusing on the synthesis of macro-level labor statistics (Periodic Labour Force Survey, PLFS) and specialized policy evaluations (NITI Aayog, Skill India Mission reports). Despite robust economic growth and recent improvements in labor force participation rates, India faces a significant structural disconnect: high-productivity sectors generate limited employment, while traditional, low-productivity segments remain informal and low-paying. The analysis reveals a critical skills crisis, characterized by a profound mismatch between rapidly rising educational attainment and the quality of available jobs, evidenced by the underutilization of tertiary-educated workers. Furthermore, while flagship skilling programs achieve significant scale, their effectiveness is limited by a focus on quantitative targets over verifiable placement outcomes and a lack of localization to regional industrial demand. Addressing these challenges necessitates immediate policy shifts towards formalizing the gig economy, decentralizing curriculum design, strengthening data infrastructure for real-time labor market information, and proactively adapting to the accelerating threat of automation and Artificial Intelligence (AI).

**Keywords:** Structural Transition, Labor Force Participation, Skill Mismatch, Services Sector Dualism, Pradhan Mantri Kaushal Vikas Yojana, Informal Employment, Workforce Automation.

#### Introduction

India stands at a pivotal moment, possessing the world's largest young population, a demographic advantage frequently touted as the pathway to sustained economic supremacy. However, translating this demographic dividend into mass economic empowerment remains a persistent and complex challenge. The primary issue stems from a fundamental structural disconnect between the trajectory of economic growth and the characteristics of the jobs created. The Indian economy is increasingly services-led, yet this model has proven insufficiently inclusive in its employment generation capacity.

While the services sector contributes over half of the national output, its share in employment remains below the global average. As per recent data, services employment rose to 29.7% of the workforce in 2023–24, an improvement from 26.9% in 2011–12, creating an estimated 40 million jobs over six years. Despite this growth, the 29.7% share still lags significantly behind the global average of 50%, reflecting a slower structural transition than expected for an economy of this size. This gap defines the central challenge: economic expansion appears to be concentrated in modern, high-productivity, capital-intensive sub-sectors (such as IT and finance) that have low employment elasticity, meaning they require substantial capital investment but generate limited mass employment. These sectors reinforce the dual character of the overall services economy, contrasting sharply with traditional segments (like retail trade and transport) that absorb large numbers of workers but are predominantly informal and low-paying.

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The analytical framework adopted in this report relies upon the synthesis of comprehensive secondary data from national and international sources, including key employment and unemployment indicators provided by the Periodic Labour Force Survey (PLFS), strategic policy guidance from NITI Aayog reports, and specialized evaluations of skilling initiatives like the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) conducted by organizations such as the International Labour Organization (ILO) and the World Bank. The aim is to move beyond aggregate positive growth metrics to diagnose the quality deficit and structural fault lines that threaten to dilute the potential of India's large, youthful workforce.

### II. Macro-Trends in India's Labor Market and Gender Dynamics (2017–2024)

Recent PLFS data reveals significant movement in India's core labor market indicators, indicating a post-pandemic rebound and increasing participation. The Labour Force Participation Rate (LFPR) for persons aged 15 years and above (on a usual status basis) increased from 57.9% in July 2022–June 2023 to 60.1% in July 2023–June 2024. Concurrently, the Worker Population Ratio (WPR) for the same age group rose from 56.0% to 58.2%. The overall Unemployment Rate (UR) also saw a decline, standing at 3.2% for the 15+ age group during July 2023–June 2024.

#### The Rising Female Workforce Participation

The most dramatic shift has been the substantial increase in female labor force participation. The Female LFPR (for ages 15+) surged from 37.0% in 2022–2023 to 41.7% in 2023–2024, accompanied by an increase in Female WPR from 35.9% to 40.3%. This momentum is primarily visible in rural areas, where the WPR increased significantly from 44.8% in 2017–18 to 56.5% in 2023–24, a steeper rate of growth compared to urban areas (42.6% to 47.4%).

However, a closer examination suggests that this rapid increase in women's employment, particularly in rural settings, may represent movement into low-value, informal work rather than genuine structural upward mobility. Analysis by NITI Aayog points out that rural women's participation is largely confined to low-value activities. When high employment growth is concentrated geographically in rural areas and functionally in traditional sectors, it often signals distress-driven labor entry, where women join the workforce to supplement household income due to economic necessity or the precarity of male employment. Consequently, policy evaluation must move beyond measuring sheer participation volume to focusing intensely on the quality of employment, including earnings, social protection, and formal contract status, to ascertain if this trend translates into long-term economic empowerment.

#### Gender Disparity and Urban-Rural Contrasts

Despite the aggregate national improvements, persistent regional and urban-rural disparities define the labor market landscape. While urban regions generally offer higher productivity and better access to advanced education, the gender gap in LFPR remains paradoxically wider in urban areas (national average gender gap of 64.64) compared to rural areas (47.71). States like Bihar and Goa exhibit particularly high gender disparities. This disparity in urban centers, which typically offer greater opportunities, suggests that non-economic barriers, such as entrenched socio-cultural norms, safety concerns, and the lack of formal, flexible, and suitable employment opportunities for educated women, continue to restrict participation. Addressing this requires structural reforms, notably the formalization and professionalization of care services, which could provide standardized, safe, and regulated employment for many urban women.

The following table summarizes the recent high-level changes in key labor indicators:

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Labour Force Participation Rate (LFPR) and Worker Population Ratio (WPR) Trends (Age 15+): 2022–23 vs. 2023–24

Indicator	Period	Total (Persons)	Male	Female
LFPR (Usual Status)	2022–2023	57.9%	78.8%	37.0%
LFPR (Usual Status)	2023–2024	60.1%	78.8%	41.7%
WPR (Usual Status)	2022–2023	56.0%	76.3%	35.9%
WPR (Usual Status)	2023–2024	58.2%	76.3%	40.3%

(Source: MoSPI PLFS data )

### III. The Services Sector Dualism and the Formalization Challenge

The structural transformation of the Indian economy is incomplete, evidenced by the continuing reliance on agriculture as a major employer. The share of employment in agriculture surged during the pandemic years and remained high at 40.42% in 2023–24, compared to the services sector share of 37.18%. Although this represented a partial reversal of pandemic-driven distress migration, where employment shifted back into services post-2022–23, this trend often constitutes movement from low-productivity agriculture to low-productivity, informal services, rather than genuine upward structural mobility into formal, high-wage sectors.

#### The Informal Services Economy

The services sector, despite its importance as the mainstay of employment growth and post-pandemic recovery, is hampered by pervasive informality. Analysis shows that over 60% of urban workers are employed in services, but this concentration is largely focused on traditional, low-productivity areas. In major states, retail trade and transport dominate service jobs, maintaining high employment absorption but contributing minimally to overall productivity gains. This horizontal shift of labor into precarious urban or semi-urban jobs, often in the gig economy or fragmented supply chains, compounds the lack of social protection and wage stability.

NITI Aayog emphasizes the critical need for structural reforms to address this challenge, specifically recommending fast-tracking social protection measures for gig and self-employed workers and focusing on the digitization of informal worker registration. Without active policy intervention, the services sector's growth will continue to widen the disparity between the high-skill, formalized minority and the low-skill, unprotected majority.

#### The Role of MSMEs and Regional Strategy

A vital component for formal job creation lies within the Micro, Small, and Medium Enterprises (MSME) sector, often considered the backbone of economic development. MSMEs employed 1109.89 lakh (110.989 million) persons, with the manufacturing sector within MSME generating the maximum number of jobs. This demonstrates the potential of MSME to absorb labor moving out of agriculture and informal services. However, the sector is constrained by systemic obstacles, including limited financial access, inadequate infrastructure, and overly complex regulations. Strengthening MSME capacity, particularly in rural and semi-urban areas, through easier credit access and regulatory simplification, is crucial for improving employment quality.

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Furthermore, dispersing economic activity away from overcrowded metro areas is a necessary policy mechanism for formalization. The concentration of low-skill services in large cities strains infrastructure and limits opportunities elsewhere. The strategy of developing regional service clusters and hubs in Tier-2 and Tier-3 cities is critical for creating medium-skilled administrative, logistics, and technical jobs outside primary metro areas. Success requires greater cooperation between state governments and industry to leverage local strengths, optimize logistics, and enhance digital infrastructure, thereby ensuring economic growth translates into spatially diversified, formal opportunities.

### IV. The Skill Mismatch Crisis and Underutilization of Human Capital

The quantity of employment is only one part of the challenge; the quality of human capital utilization presents an even deeper, structural issue referred to as the skill mismatch crisis. Data indicates a profound disconnect between the rising levels of education among the populace and the quality and skill requirements of the jobs available.

This mismatch is most acutely felt among the tertiary-educated workforce. Analysis indicates that only 8.25 percent of workers with a graduate-level education are employed in corresponding skill-level jobs, signifying massive underutilization of India's educated human capital. This deficit extends beyond vocational training institutions and suggests a systemic failure within the mainstream education framework, where curricula often prioritize theoretical knowledge over the critical thinking, problem-solving, and industry-specific practical skills required for high-competency roles. In contrast, 72.18 percent of secondary-educated workers are appropriately matched, the highest rate among all education levels.

#### Vocational Training Lag and Regional Disparities

While initiatives like the Skill India Mission have scaled up, a limited share of the workforce has received formal vocational training, and the training provided frequently lacks alignment with dynamic industry needs. Compared to global benchmarks in advanced economies such as Germany or South Korea, India's formal skill development ecosystem remains significantly underdeveloped.

This deficiency is reflected starkly in the regional skill profiles across the country. Skill composition is highly uneven, illustrating deep regional disparities that mirror economic opportunity gaps. For instance, high-competency occupations (Skill 4) account for over 30 percent of the workforce in regions like Delhi and Chandigarh. In sharp contrast, states like Bihar, Jharkhand, and Uttar Pradesh register less than 6 percent of their workforce in these high-skill categories. In states such as Bihar, an alarming 95 percent of the workforce remains in the lowest skill categories (Skill 1 and 2). This spatial concentration of low skills and low opportunity mandates highly localized policy interventions.

#### Data Infrastructure as a Policy Bottleneck

A critical element exacerbating the skill mismatch is the inadequacy of the data infrastructure required to inform training supply. Current policy planning often lacks the real-time feedback mechanism necessary to match training portfolios with evolving industry demands. The urgent necessity for a centralized Skill Data Repository and updated National Classification of Occupations (NCO) is frequently highlighted by expert reports, underscoring that existing occupational codes often fail to reflect emerging job roles in high-growth fields like AI, renewable energy, and advanced manufacturing. Without sophisticated Labour Market Information Systems (LMIS) and robust data warehouse architecture, the training ecosystem risks chasing obsolete job roles, thereby ensuring continuous investment in mismatched skills.

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### V. Evaluating Policy Effectiveness: The Case of the Skill India Mission

The Skill India Mission Operation (SIMO), supported by technical and financial assistance, including a \$250 million loan from the World Bank, represents India's large-scale effort to enhance the quality and market relevance of vocational training. The flagship scheme under this mission, the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), has demonstrated impressive scale. For example, under PMKVY 4.0 (FY 2022–25), more than 2.5 million individuals are projected to have been trained by July 2025.

#### The Volume versus Value Dilemma

Despite this massive quantitative output, evaluations point to a significant gap between training volume and verifiable value in the labor market. While PMKVY is intended to equip youth with employable skills, the national placement rate in earlier phases hovered around 43%. This metric suggests that over half of the public investment in training does not immediately translate into formal, sustainable employment outcomes. This outcome points to a policy bias toward achieving high quantitative enrollment and completion targets, often at the expense of ensuring high-quality, demand-driven placement and long-term retention.

Successful, outcome-focused models offer a valuable contrast. For instance, Project AMBER, co-funded by the World Bank and executed by Generation India, has shown a superior track record, achieving a 65% job placement rate within three months for the nearly 24,000 youth trained. This comparison suggests that future government skilling initiatives must fundamentally restructure their funding and incentive mechanisms, tying them strictly to verifiable employment outcomes (e.g., placement, retention, and wage increase) rather than mere certification rates.

#### The Imperative of Localization and Decentralization

The effectiveness of centrally designed skilling programs diminishes significantly when confronted with highly varied regional economies. The quality of training, beneficiary mobilization, and successful enrolment into suitable job roles depend heavily on local planning and execution capacities. For example, despite PMKVY training 1.76 lakh (176,021) youth in Himachal Pradesh since its inception, youth unemployment in the state remained high at 29.6% in 2025. This disparity highlights that standardized curricula are ineffective in regions characterized by limited or specialized industrial growth.

Effective implementation requires policy to empower decentralized bodies, such as District Skill Committees (DSCs), and State Skill Development Missions (SSDMs) to customize training portfolios based on granular local industrial demand. The skilling ecosystem managed by the Ministry of MSME, which trains individuals from school dropouts to postgraduates and aligns courses with the National Skill Qualification Framework (NSQF) through institutions like Technology Centres, exemplifies a successful model for targeting diverse groups with demand-driven programs. Sustaining this localized approach, where DSCs support local skill demand from micro and small enterprises, is essential for ensuring the skills imparted directly translate to immediate regional employment needs.

### VI. Future of Work: Automation, Digital Skills, and the Reskilling Imperative

Looking ahead, the Indian workforce faces an unprecedented disruption driven by rapid technological advancements, especially in automation and Artificial Intelligence (AI). Reports indicate that automation, spearheaded by Generative AI, could affect up to 55% of current work activities by 2035. This technological disruption is already visible in the corporate world, where major employers like IBM, Amazon, and Accenture are restructuring operations, leading to thousands of layoffs as they pivot towards AI-focused areas.

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### Vulnerability of the Youth Workforce

Early research indicates that this displacement will disproportionately affect entry-level and junior roles, presenting a unique challenge to the large demographic of young professionals entering the job market (Gen Z). Since the existing education system already produces a significant skill mismatch for traditional jobs, it is profoundly unprepared to meet the rapid, complex technical demands posed by emerging fields like AI, cybersecurity, and advanced manufacturing.

The scale of the required transformation is immense: nearly 150 million Indian workers will require proactive reskilling between now and 2027–2030 to meet global standards. Therefore, skilling policy must undergo a radical shift, moving away from short-term certification towards comprehensive, long-term competency building in specialized digital fields. Current initiatives like the Skill India Digital Hub and FutureSkills Prime, which offer courses in AI and cybersecurity, provide a foundation, but their reach and depth must be significantly expanded.

### Regulatory and Policy Response to Technological Change

Beyond adapting curriculum content, India must address the regulatory and legal lag associated with technological displacement. The massive scope of potential work activity affected (up to 55%) raises serious questions regarding the adequacy of existing labor laws to manage large-scale job displacement, guarantee worker protection, and regulate the increasingly casualized gig economy.

While NITI Aayog has recognized the necessity of social protection for gig and self-employed workers, legislative and policy reforms must be urgently fast-tracked. These reforms are critical for ensuring employment security and defining new models of social safety nets for a workforce that is rapidly migrating toward flexible, contract-based, and digitally mediated work structures. Proactive investment in emerging sectors, such as green economy skills, is also necessary to align the workforce with global demands for sustainable development and carbon transition.

## VII. Conclusion

The comprehensive analysis of India's employment generation and skill development landscape reveals a nuanced reality where recent quantitative gains in labor force participation are offset by persistent structural and qualitative deficits. The journey toward maximizing the demographic dividend is inhibited by two primary, interwoven challenges. First, the structural disconnect, wherein the high-growth services sector exhibits low employment elasticity, resulting in insufficient formal job creation and pervasive informality, trapping a significant portion of the workforce in low-productivity roles. Second, the profound quality deficit, characterized by a severe mismatch between rising educational qualifications and the actual skill requirements of the evolving economy, leading to the systemic underutilization of tertiary-educated human capital.

While flagship initiatives under the Skill India Mission have successfully achieved unprecedented scale in training enrollment, their overall impact remains constrained by implementation flaws. The policy focus has often prioritized achieving volume targets over ensuring qualitative outcomes, such as verifiable placement, wage parity, and job retention. Moreover, the failure to customize centralized curricula to suit the heterogeneous demands of regional industrial clusters perpetuates the mismatch, especially in states lacking substantial industrial growth.

To secure a transition toward high-quality, productive employment and advance the vision of national development, a three-pronged policy approach is required. First, structural reform must focus on the immediate formalization and digitization of social protection for gig and self-employed workers while actively

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promoting labor absorption elasticity in high-potential sectors like MSME manufacturing and logistics. Second, the skill development ecosystem must undergo a radical data-driven transformation. This entails mandating robust industry linkage for all public training programs, overhauling curricula to emphasize critical competencies, and immediately investing in sophisticated Labour Market Information Systems (LMIS) to ensure training supply adapts rapidly to real-time industrial demand. Third, proactive policy intervention is essential to mitigate the impending risks posed by AI and automation, requiring a national commitment to long-term digital reskilling and legislative reforms that address the future of work and protect labor rights in an automated economy. Achieving meaningful employment generation requires transitioning the policy emphasis from the quantity of training certifications to the quality of formal employment outcomes.

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