

The Graduate Paradox: Analysing Structural Skill Mismatches and Employment Quality in India Using PLFS and NSDC Frameworks

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Abstract

This study analyses the structural paradox in India's job market, where high macroeconomic growth and youth moving towards higher education coexist with the problem of unemployment and underemployment among educated youth. Based on secondary macro-level data from the Periodic Labour Force Survey (PLFS) Annual Reports (2017-18 to 2023-24) and the National Skill Development Corporation (NSDC) sectoral projections, the study employs a descriptive and comparative trend-analysis framework using the Usual Status (ps+ss) approach. The findings reveal a quantitative expansion in labour supply, with aggregate graduate Labour Force Participation Rates (LFPR) rising from 60% to 66.20%, heavily driven by a 13.1% increase in rural female participation. At the same time, aggregate graduate unemployment declined to 13% by 2023-24. However, a deeper qualitative mismatch persists: labour market absorption is structurally skewed toward informality, with rural graduate self-employment rising to 64.7% while secure, regular salaried employment stagnates at 12.7%. Further, a significant sectoral divergence exists between capital-intensive, high-Gross Value Added (GVA) industries and low-productivity, high-employment multiplier sectors. Ultimately, the paper highlights a lack of coordination between the theoretical results of formal higher education and the advanced technical, digital, and personal competencies demanded by India's fastest-growing sectors.

Keywords: Educated Unemployment, Periodic Labour Force Survey (PLFS), Skill Mismatch, National Skill Development Corporation (NSDC), Employment Quality

Introduction

In today's global knowledge economy, higher education is understood fundamentally as the primary driver of human capital formation, economic growth, and social mobility. In accordance with basic principles of economics, increased availability of higher education results in changes in the structure of the national labour force, moving it away from low-productivity manual sectors into higher-value-added, knowledge-based sectors. As for newly emerging countries, higher education is used as a strategy to not only increase overall labour productivity but also create a flexible labour force ready for new technologies, which could attract more private capital

and support industrial upgrading. Higher education at the macro level is therefore supposed to provide two benefits – career development for young people and skills for industry.

Although current trends in the macroeconomic context of India represent a significant and highly structural threat to these human capital theories, they give rise to an interesting socio-economic paradox. India has a notable demographic dividend, consisting of the largest young population in the world, while also developing into one of the fastest-growing economies today. However, while there has been a dramatic increase in the number of highly educated graduates entering the job market, there has not been a corresponding structural capacity to absorb such high-calibre talent in the country, resulting in chronic, structurally educated unemployment among newly emerging graduates.

A growing gap between economic output and labour demand causes this structural disparity. As national growth shifts towards capital-intensive, technology-driven sectors, the resulting Gross Value Added has not created a corresponding number of new positions for the average degree holder. Instead, the economy has developed a two-track structure in which high-value industries require highly specialised skills that most graduates lack. At the same time, the majority of the workforce continues to work in low-productivity, informal jobs. This creates a situation in which the graduate workforce is stuck between two worlds, holding degrees that are overqualified for manual work but underspecialised for emerging high-growth industries such as healthcare and computer services.

Due to the emphasis on the aggregate supply model, there has been an oversupply of graduates with general qualifications who lack the technical skills needed for their professions. This clearly indicates the failure of the concept of social mobility through education due to a qualitative problem. It can thus be said that in order to solve the problem of unemployment in India, it is necessary to focus on qualitative synchronisation. The challenge for the coming years is not merely to educate more individuals but to ensure that the skills being cultivated are directly relevant to the sectors projected to lead the formal economy. By bridging the gap between academic instruction and industry requirements, it is possible to restore the link between educational attainment and productive employment. This study attempts to analyse the specific sectoral shifts and competency requirements that are necessary to realign the Indian education system with the contemporary labour market.

Against this setting, this paper analyses the structural dimensions of graduate unemployment in India using data from the Periodic Labour Force Survey (PLFS) 2017-18 to 2023-24 and the NSDC National Skill Gap Study (2025). The first objective maps multi-year trends in graduate Labour Force Participation Rates and Unemployment Rates across rural and urban labour markets. The second objective assesses the structural skill mismatch by contrasting the

employment quality of the graduate workforce against sector-wise GVA multipliers and projected employment demand for 2026-27. Together, these objectives assert that India's graduate unemployment crisis is not a problem of inadequate educational expansion but of an increasing qualitative misalignment between what the education system produces and what the labour market structurally demands.

Literature Review

India's place in global development is debatable. While it holds one of the largest groups of young, educated people, it also deals with high rates of unemployment among educated people. Over the past thirty years, more colleges and universities have been coming up, due to investment from both private and public sectors, which has led to a rise in the number of graduates. Yet, there aren't enough jobs to match this trend of the rise in graduates. According to Rangarajan and Dev (2019), since reforms, economic growth in India hasn't generated many jobs in the organised, formal sector. Even with good GDP growth, the number of positions available is not increasing as fast as qualified youth entering the job market. This mismatch between more educated people and fewer job opportunities contradicts what human capital theory suggests should happen, highlighting the complexities in India's current situation.

According to Dev and Venkatanarayana (2011), even with rising education rates, graduate unemployment hit 35.5% in 2004, the highest for any group then. As more folks enrolled during the 1990s and early 2000s, there weren't enough jobs created for these students. So, lots of well-educated people ended up unemployed. Mamgain (2017) adds to this argument by showing that the burden of educated unemployment is neither uniform nor static. There are large gender and regional differences. Unemployment is much higher among young, educated women than among men. Some states report very high trends, while others remain relatively low. Rao (2022) further confirms that these trends have continued into recent years, with educated unemployment remaining high, especially among graduates and postgraduates, and that women still have worse outcomes than men. Together, these studies show that India's educated unemployment problem is long-standing, uneven, and deeply rooted. While the statistics on rising graduate unemployment in India are well-documented, understanding the root cause requires moving beyond individual educational outcomes to macro-level or structural indicators of the economy.

Economic growth at the macroeconomic level in India is no longer institutionally linked to labour absorption in the past twenty years due to the capital-intensive nature of investment and structural issues (Majid, 2019; Mehrotra & Parida, 2019; Rangarajan & Dev, 2019). There has been a rapid rise in both total GDP and GVA of the services sector, but there has been no increase in actual employment creation, thereby forcing the increasing number of graduates in

the labour force to be engaged in the informal economy (George, 2024; Majid, 2019). The inability of the system to generate salaried jobs has led to a structural problem where the increase in education has been channelled towards informal jobs (George, 2024; Mehrotra & Parida, 2019).

George (2024) states that while India is one of the world's fastest-growing economies, over 90% of its 470 million workers are in informal, unstable jobs. Strangely, educated youth suffer the most, too. While Chand and Singh (2022) challenge the assertion that the employment landscape has worsened, citing a rise in labour force participation rates in recent years. This disconnect between educational expansion and job acquisition cannot be attributed solely to individual-level or personal failure among graduates, but to a structural inadequacy of India's labour market. Sahoo and Sahoo (2019) look into how unemployment relates to macroeconomic factors in India from 1991 to 2017. They found that higher GDP growth generally lowers unemployment rates. But their research groups literacy into one category, so you can't really know if a degree has a specific effect on job prospects. Chen, Kanjilal-Bhaduri, and Pastore (2022), using PLFS 2018-19 data, found that returns to education in India have declined over the past decade as graduate supply has consistently outpaced demand for high-level skills, with returns varying significantly by gender, social group, and employment sector.

Mehrotra and Parida (2019) study the structural transformations that took momentum in 2004-05, but stalled after 2012. There was a fall in agriculture and manufacturing, which had been the traditional employers of Indian workers. According to the findings, a major portion of employment is generated by small and micro units of the unorganised sector. This shows that the degree job gap is not uniformly distributed but rather reflects failures in certain sectors to create formal employment. According to Majid (2019), between 2000 and 2012, India's GVA growth was high, especially in the services sector. Again, most of the labour shifts were within the unorganised sector, not from the unorganised to the organised sectors. This suggests that more GVA does not necessarily translate into more jobs. India's higher education system is faced with serious problems, such as graduate unemployment, a deficit of job-relevant skills, and lower wages. Academic qualifications are not up to date with industry needs.

George & Baskar's (2024) research highlights a 30% unemployment rate among graduates, really emphasising how fast degrees are losing value in India. Even premium institutes like IITs have placement rates below 70% due to oversupply far exceeding market demand. As the market has become saturated, real wages for entry-level engineers have fallen 22% since 2010. According to Bahl & Sharma (2021), overeducated employees in India face a 7% wage hit. However, undereducated workers do not see a wage boost. This research examines how the education-occupation mismatch affects wages there. In addition, failing to account for the presence of an education-occupation mismatch leads to wage disparities among workers with

similar levels of education being understated. The paper considers only the wage implications after the hiring process and does not discuss the role of degree attainment in securing a job.

Batheja et al. (2024) attempt to ascertain whether employers' preference for a college degree depends on either skills acquired through schooling or signalling, by conducting an application experiment in Micro Small and Medium Enterprises (MSMEs) in India. It shows that neither the universities attended by the applicants nor the score on the certification test affects employers' callback rates, implying that the degree is not functioning as a signalling tool in the Indian graduate job market. Bahl & Sharma (2024) examine how the education and occupation mismatch affects income inequality in India. The results reveal that over-education is associated with lower wages, whereas appropriate job matching tends to reduce income inequality. Ruchi Ramesh (2024) examines India's pressing need to turn its vast youth population into a productive global talent hub. While around two-thirds of the country falls into the working-age group, a severe structural gap remains, with less than 5 per cent of workers having formal vocational training. To address this, the NSDC was created to promote private-sector participation and ensure that training is aligned with industry needs. The study discusses important frameworks such as PMKVY, SANKALP, and STRIVE and identifies implementation bottlenecks, including the administration's over-reliance on local district committees. In the end, the study calls for local planning and strong public-private partnerships to capitalize on this short-term economic advantage.

Securing a degree in India does not promise access to quality employment. Khare (2014) argues that higher education institutions are producing graduates without supplying them with market-relevant skills, which creates a gap between degree attainment and actual employability. Sharma (2016) similarly finds that higher education positively influences employment outcomes overall. But women, rural workers, and marginalised communities, including SC, ST, and OBC groups, continue to face significant disadvantages in labour market absorption. Together, these studies establish that India's graduate unemployment problem is structurally uneven and cannot be understood outside its specific social and geographic context. Cheng et al. (2022) further state that government, universities, students, and employers each hold fundamentally different understandings of employability. The government pressures universities to improve placement rates while neglecting broader labour market conditions, universities measure success through employment statistics rather than actual skill development, and employers expect work-ready graduates with practical experience that formal education rarely provides.

Shifting the focus toward specific educational credentials, Bairagya (2015) utilises multi-round NSSO data to analyse the socio-economic determinants of this crisis. His findings reveal a paradox: possessing technical or professional education does not automatically shield graduates from labor market friction. Bairagya argues that the current state-led push to scale up technical

education overlooks inherent structural issues, such as severe regional disparities and localised informational asymmetries, which prevent even highly trained individuals from being absorbed into formal employment.

Further, Thomas (2023) uses longitudinal data of NSSO rounds to recent Periodic Labour Force Surveys (PLFS) to track the widening gap between potential labor supply and actual non-agricultural labor demand. Thomas demonstrates that the post-2012 slowdown in labor absorption was not merely cyclical but systemic, resulting in a huge rise in unemployment among young, educated men and the withdrawal of qualified women from the labor market. His work highlights that localised, state-level industrial policies are the need of the hour to address this pattern of systemic unemployment among youth.

Examining the dynamics of the scarcity of supply of skilled graduates through recent PLFS data, Sen, Chakraborty, and Roy (2024) model how skill-to-job matching impacts human capital across generations. Their empirical analysis reveals that while the proportion of the skilled population has grown significantly over time, only 8.58% of these skilled individuals manage to secure appropriate, high-skilled formal employment. The remaining vast majority are forced into low-skilled informal jobs or long-term unemployment.

Despite their individual contributions, each of these studies examines only one aspect of the education-employment problem. Sharma (2016) focuses on inequality, Khare (2014) on systemic gaps in graduate skill development, Cheng et al. (2022) on the divide between stakeholders, Unni (2015) on the theory-practice divide, and Kumar (2023) on ground-level realities in states like Uttar Pradesh. Essentially, none of these studies use multi-year data to trace how the education-employment gap has progressed over time across rural and urban labour markets. This paper aims to fill that gap by analysing graduate employability through structural and skill-based extent using recent verifiable data from PLFS and NSDC, producing a more complete and India-specific understanding of why educational attainment is failing to translate into productive employment for a lot of India's educated youth.

Research Objectives

1. To map the multi-year trends of Graduate Labour Force Participation Rates (LFPR) and Unemployment Rates (UR) across rural-urban demographic divides.
2. To evaluate the structural skill and qualification mismatch by contrasting the employment activity status of graduates against sector-wise GVA multipliers and employment projections.

Research Questions

1. How have graduate Labour Force Participation Rates (LFPR) and Unemployment Rates (UR) diverged across rural-urban demographic boundaries and gender lines in India between 2017-18 and 2023-24?
2. To what extent does a structural mismatch exist between the qualitative employment status of Indian graduates (supply side) and the sector-wise Gross Value Added (GVA) multipliers and employment projections modelled for 2026-27 (demand side)?

Data Sources & Methodology

Data Sources

This study utilises secondary macro-level data from two significant databases, namely:

1. The Periodic Labour Force Survey (PLFS) Annual Reports (2017–18 to 2023–24): These reports are officially published by the Ministry of Statistics and Programme Implementation (MoSPI). The analysis specifically extracts data from Table 24 (Unemployment Rates by General Education level) and Table 21 (Percentage distribution of workers by usual status).
2. The National Skill Development Corporation (NSDC) Report: This report has been utilised for demand-side indicators, specifically Table 2.1 and 2.2 (Gross Value Added multipliers vs. Employment Multipliers) and Table ES.1 (Sector-wise Projected Jobs).

Methodology

The paper adopts a descriptive and comparative trend analysis framework. The labour supply indicators are calculated using the Usual Status (ps+ss) approach, which takes into account both principal activity status (ps, which measures an individual's primary economic contribution for 365 days and subsidiary economic activity status (ss), which records secondary work lasting for at least 30 days to ensure that the informal working patterns are also captured. The study further maps the percentage distribution of employed graduates across three broad Usual Activity Statuses: Regular Salaried/Wage Employees, Self-Employed (Own-Account Workers & Unpaid

Family Helpers), and Casual Labour. These structural workforce shares are contrasted chronologically against the National Skill Development Corporation's (NSDC) sectoral Gross Value Added (GVA) contributions and demand-side high-growth industry profiles. By cross-tabulating these PLFS employment outcomes against sectoral GVA trends, the study identifies critical structural mismatches. This mapping reveals the divergence between the specific vocational training fields supplied by the higher education sector and the actual high-skill talent demands generated by India's rapidly expanding service and industrial sectors.

Empirical Analysis & Findings

Objective 1

Macroeconomic Trends in Graduate LFPR and Unemployment (2017–18 to 2023–24)

To understand the structural dynamics of graduates in the Indian labour market, we can analyse changes in two key indicators from the Periodic Labour Force Survey (PLFS): the Labour Force Participation Rate (LFPR) and the Unemployment Rate. The data is further divided by sector (rural and urban) and gender to reveal the depth of the trends across different contexts.

Structural Expansion of Graduate Labour Supply through LFPR Trends

The overall labour force participation rate of Indian graduates shows an encouraging upward trend over the 7 years under consideration. The total graduate LFPR (rural and urban combined) rose from 60% in 2017-18 to 66.20% in 2023-24. Overall, there is an evident trend among young people who are very well educated toward pursuing employment.

When we look more closely, we see that such growth is structurally uneven across India's demographic groups.

GRAPH 1 - Comparative Multi-Year Trajectory of Graduate LFPR by Sector (2017–24)

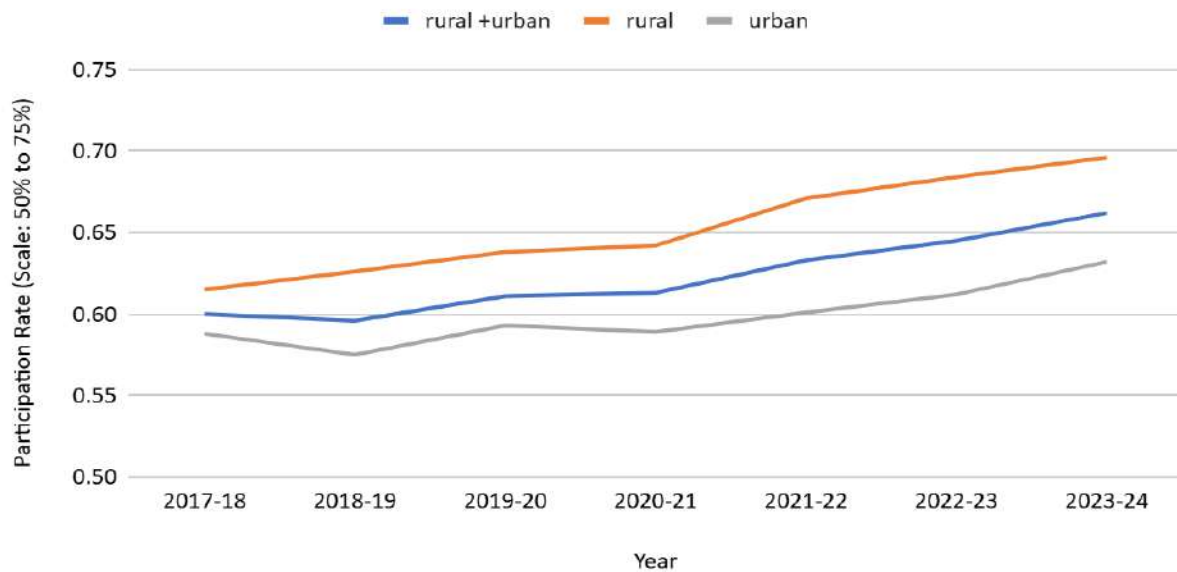


Figure 1: Comparative Trends of Graduate LFPR by Sector

Historically, urban centres have been viewed as the main labour providers for graduates. The data show that the rural labour market has experienced stronger labour supply growth than its urban counterpart. Rural graduate Labour Force Participation Rate (LFPR) shot up by 8.1 percentage points, from 61.50% in 2017-18 to 69.60% in 2023-24.

This shift carries a direct implication for skill development policy: since ITIs, NSDC training centres, and vocational programs have conventionally been concentrated in urban areas, the rapidly expanding share of educated job-seekers is now emerging in a region where skilling infrastructure is comparatively sparse. Training capacity needs to be intentionally expanded and directed towards non-metro and rural areas; otherwise, this rising rural graduate supply risks translating into rising rural graduate unemployment instead of quality employment.

GRAPH 2 - Demographic Breakdown of Graduate LFPR Trends by Gender and Sector

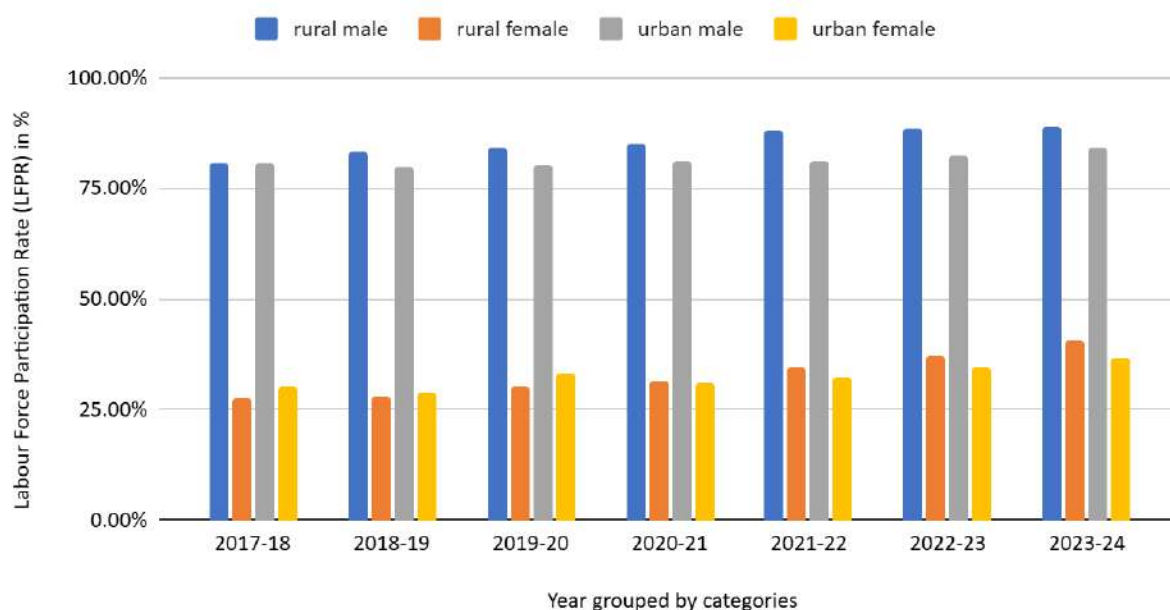


Figure 2: Comparative Trends of Graduate LFPR by Gender and Sector

The macro-expansion is due to an institutional shift in female labour supply, mainly in the rural sector. Rural female LFPR revealed a massive growth from 27.60% to 40.70% (by 13%). The urban female LFPR followed a similar slope from 30.20% to 36.60%, but at a slower rate. Meanwhile, male labour force participation rates across both rural and urban areas grew steadily but slowly (around the 80% mark by 2023 - 24).

The Gender Bias in Influx: The macroeconomic expansion process is largely influenced by the institutional change in female labour force participation rates, especially in the rural sector. Rural females' LFPR experienced a huge increase from 27.60% to 40.70% (by 13.1%). The urban LFPR for women followed a similar pattern, although less pronounced, from 30.20% to 36.60%. On the other hand, male labour force participation rates showed a steady growth rate in rural and urban areas (approaching 80% by 2023 -24).

This pattern shows an evident consequence for how skilling and higher-education access must be planned from now on, as the growth in labour supply is being driven intensely by rural women instead of a comprehensive rise across all groups; generic, one-size-fits-all training and education programs are less likely to be well suited to this new workforce. Skilling initiatives need to be purposefully gender-responsive and locally accessible, and designed for constraints like mobility,

safety, and household responsibilities that rural women face, rather than assuming the same delivery model that worked for urban male graduates will be equally effective here.

Paradox in Graduate Unemployment Rates

Simultaneously, tracing the corresponding results on the demand side reveals another fascinating comparison. As evident from the PLFS data, the unemployment rate for graduates (both rural and urban) fell consistently over the years, from 17.20% in 2017-18 to 13% in 2023-24.

On breaking down the figures along the regional and gender lines, several major aspects become apparent:

GRAPH 3 - Multi-Year Contraction in Graduate Unemployment Rates across India (2017-24)

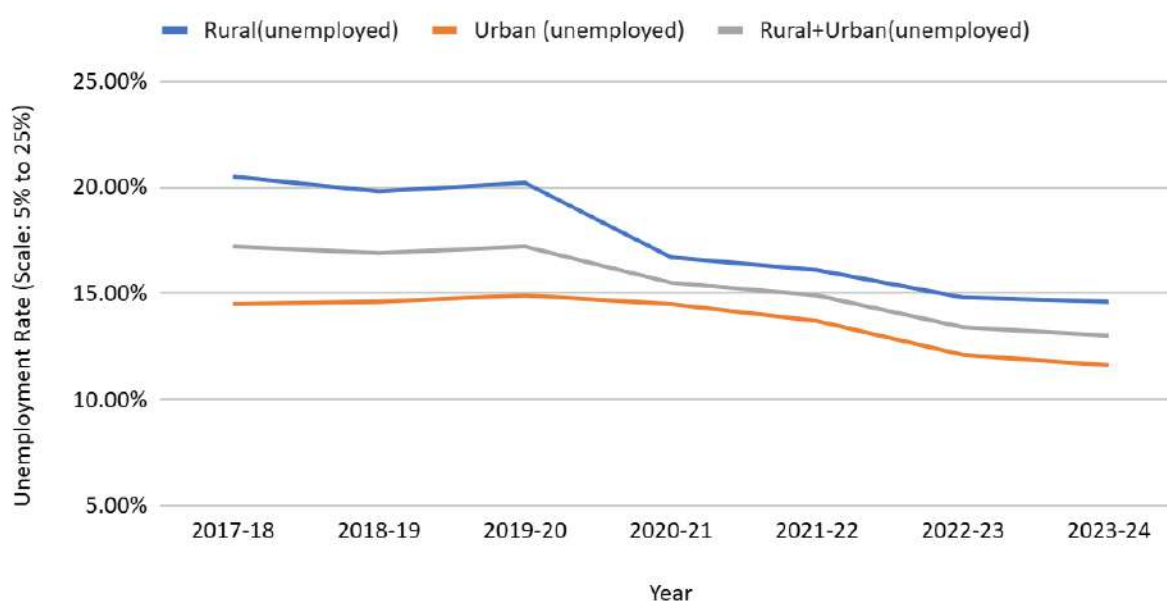


Figure 3: Multi-Year Contraction in Graduate Unemployment Rates across India

Although unemployment levels worldwide have been falling, the situation is different in India, where rural graduates are more exposed to unemployment than urban graduates. The unemployment rate among rural graduates fell from 20.50 per cent in 2017-18 to 14.60 per cent in 2023-24, whereas the urban unemployment rate fell from 14.50 per cent to 11.60 per cent.

Women are entering the labour market in droves, but many end up unemployed after finishing school. It is even worse for female graduates from rural areas, with an unemployment rate of

32.70% in the 2017-18 academic year. Urban counterparts are not doing great either, at 24.40%. These rates were reduced to 22.7%. On the other hand, by 2023 - 24, urban male graduate unemployment fell to 9.20%, and rural male unemployment stood at 12.10%.

This drop in the headline unemployment rate points to an important implication for how policy effectiveness is assessed, since subsequent findings show graduates are increasingly absorbed into informal, self-employed work rather than stable and regular salaried jobs; a falling unemployment rate itself is not proof enough that skilling or higher-education outcomes are any better. Policy and institutions should be judged not just on whether graduates find any work, but on whether that work is formal, secure, and linked to their qualifications.

GRAPH 4 - Asymmetries in Graduate Joblessness: The Persistent Female Unemployment Penalty

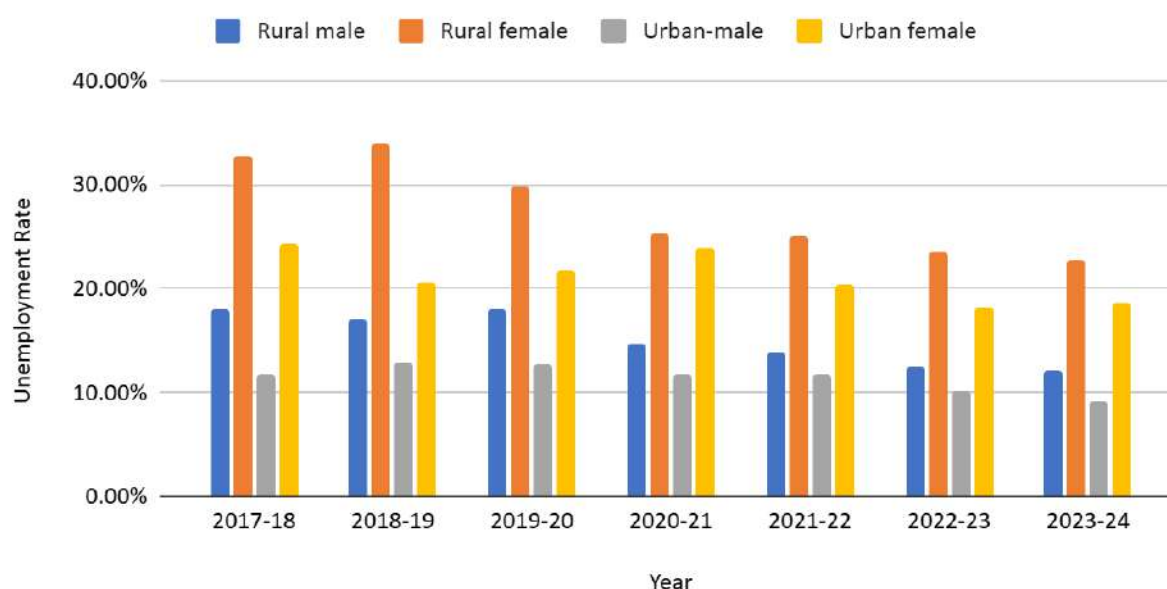


Figure 4: Trends in female unemployment penalty

This gap has a different policy implication than the trends above because it cannot be attributed solely to skill or educational gaps: women are entering the labour force in increasing numbers, often possessing educational qualifications equivalent to those of men, and are still facing unemployment rates nearly double that of men. This suggests that the hurdle is not fundamentally on the supply side, where women lack skills, but on the demand side, where employers fail to absorb them at comparable rates. Skilling programs alone are insufficient to resolve this disparity. It also requires employers to be held accountable for female hiring

outcomes, rather than leaving female workforce absorption determined exclusively by employers.

Core Paradox of the Economic Data

When analysing data on LFPR and unemployment together, one can see a distinct type of economic behaviour. According to traditional labour-market models, a sudden surge in labour supply (that is, the sharp rise in the LFPR shown above) usually creates upward pressure on unemployment rates, unless similar levels of demand growth accompany it. However, the situation in India's graduate labour market is the opposite – labour force growth accompanied by a decrease in unemployment.

Even though it might seem like a total system success, the significant gender differences reveal structural issues. More female graduates are entering the labour market, but their unemployment rates are almost double those of men. So, while there is progress, there are still major disparities.

This fast-paced quantitative expansion brings us straight into the second major question of this paper: if the country is managing to absorb the growing number of graduates, what is the structural nature of this absorption? Are these individuals employed in highly productive, salaried jobs, or is the decline in unemployment levels due to graduates lowering their reservation wages and accepting informal underemployment?

Objective 2

Structural Skill and Sectoral Mismatches

This section analyses two dimensions to evaluate the structural skill mismatch in the Indian labour market. First, the quality of employment being absorbed by the growing graduate workforce on the supply side, and second, the sectoral distribution of economic output and projected job demand on the demand side.

Graph 1 — Employment Status Distribution (%) — Rural vs Urban, 2021–22 to 2023–24

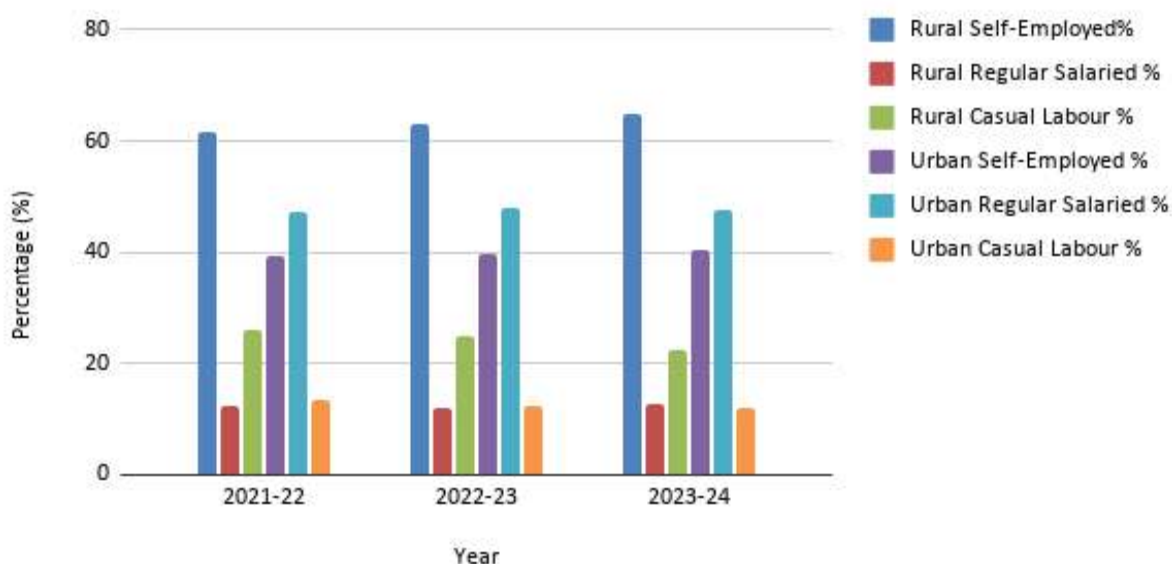


Figure 5: Employment Status Distribution (%) — Rural vs Urban, 2021–22 to 2023–24
Source: PLFS Annual Report 2023–24, Statement 6, MoSPI, Government of India

Conversely, a closer analysis of employment quality reveals an alarming structural trend. In rural areas, self-employment accounted for 61.5% of all workers in 2021-22, rising to 64.7% by 2023-24. At the same time, regular salaried employment remained inactive at only 12.5% to 12.7%. Urban areas display a more favourable picture, with regular salaried employment at roughly 47-48%; however, this still implies that more than 50% of urban workers are left out of stable formal employment. Most importantly, these metrics show little structural change over three years, suggesting that the labour market is soaking up the expanding workforce not into worthy formal jobs but into informal and unstable forms of work. This pattern directly contradicts the aspiration for rising educational achievement.

This finding warrants policy attention for tertiary education in particular. If a rising proportion of graduates, even in the urban areas where over half remain outside stable formal employment, are experiencing lower absorption into regular salaried work, this suggests that a general degree alone is no longer adequate to ensure formal employment. Skill development can no longer remain a separate and optional component of higher education. The technical and vocational competencies needed by formal employers should be built into degree programs, ensuring that graduates are equipped with the skills required for employment upon completion of their studies.

Graph 2 — Sectoral Divergence: High GVA vs High Employment Multiplier Sectors, 2021–22

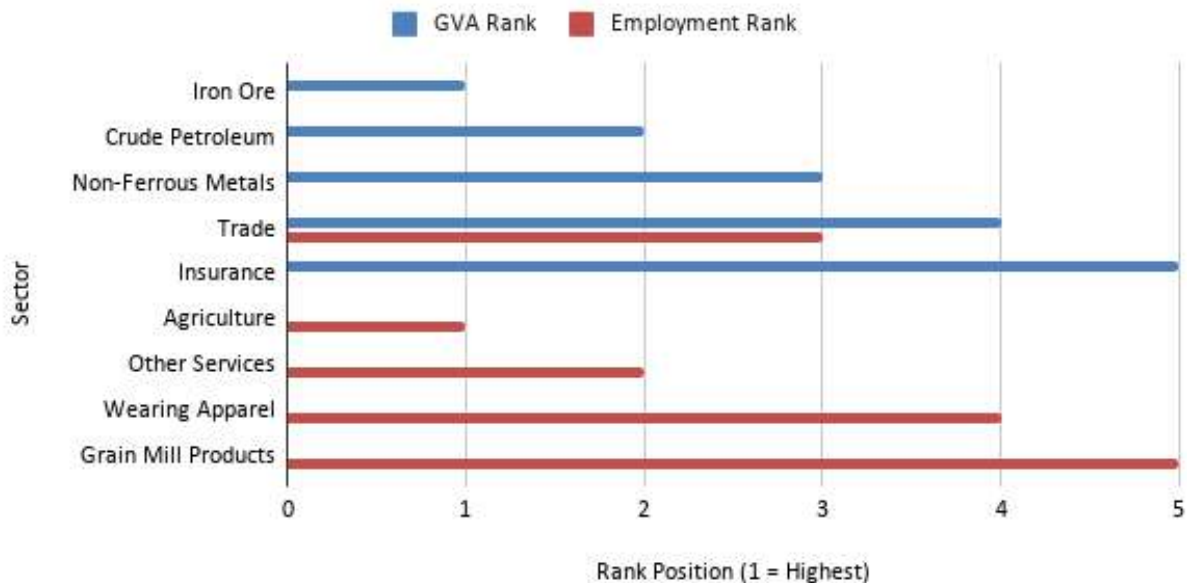


Figure 6: Sectoral Divergence — High GVA vs High Employment Multiplier Sectors, 2021–22
Source: NSDC National Skill Gap Study (2025), Table 2.1, NCAER Computations

Breakdown of NSDC sectoral data highlights a vital structural deviation in the Indian economy. The sectors generating the highest Gross Value Added per unit of activity, including iron ore, crude petroleum, and insurance services, are primarily capital-intensive industries that absorb very little labour. On the flip side, major sectors like agriculture, apparel manufacturing, and grain milling products have low productivity and don't require much skill. Interestingly, Trade is the only sector that appears in both high GVA and top employment multipliers. This really drives home how little overlap there actually is between economic output and job creation. This deviation presents a structural barrier for India's evolving graduate population. The high-value sectors they desire to enter simply do not generate adequate employment to absorb them at scale.

This divergence suggests two key policy implications. First, graduates and career-guidance systems are highly oriented towards high-priority sectors like insurance and finance, but these sectors are limited by structural factors that restrict their capacity to absorb large numbers of workers, which implies that career aspirations need to be better aligned with sectors that possess greater employment-generation capacity. Second, Trade is particularly significant as the one sector characterised by both high economic productivity and strong employment potential, yet it

continues to experience a shortage of qualified graduates because it is widely seen as a low-status career path. Addressing this perception gap through enhanced career guidance could enhance the matching of graduates to formal employment opportunities that are currently going unfilled.

Graph 3 — Projected Employment Growth by Sector, 2022–23 to 2026–27

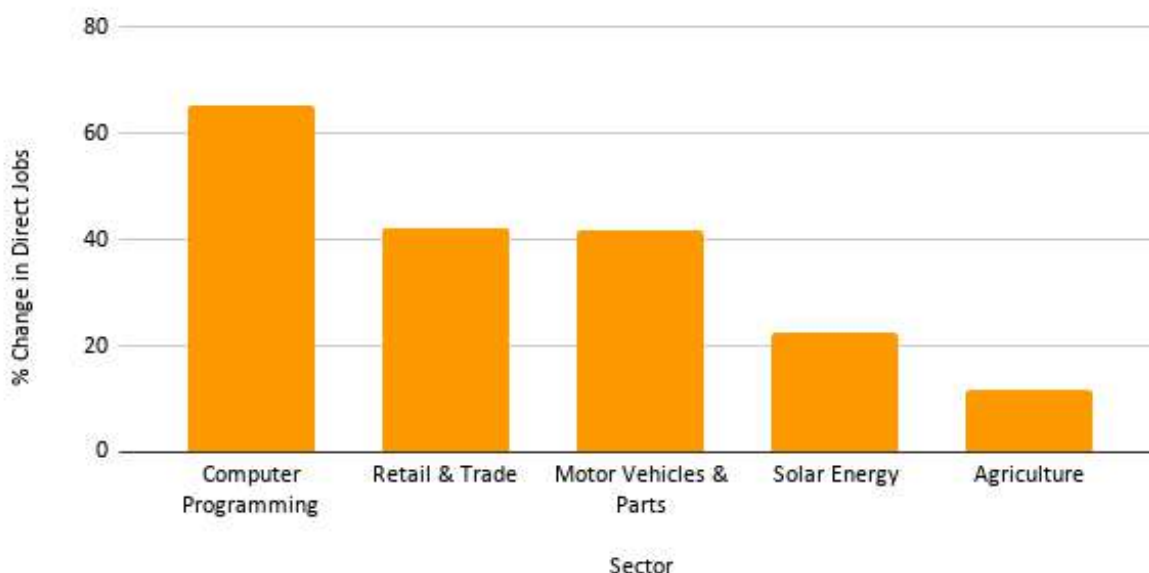


Figure 7: Projected Employment Growth by Sector, 2022–23 to 2026–27

Source: NSDC National Skill Gap Study (2025), Table ES.1, NCAER Computations

Moreover, the NSDC National Skill Gap Study exacerbates the chronic mismatch. Computer programming is the fastest-growing sector, with a projected 65.3% increase in direct jobs between 2022-23 and 2026-27, followed closely by retail and trade at 42.3% and motor vehicles and parts at 41.7%. These are sectors that specifically demand advanced technical proficiencies, including data analysis, digital fluency and specialised engineering skills. Agriculture, which currently absorbs the largest share of India's workforce, is projected to grow at only 11.7%, being the slowest among all sectors studied. There is a disparity between areas with growing employment and the skills required, underscoring an urgent need for skill development and training. It exposes that India's higher education system fails to produce graduates whose abilities and demonstrable skills are misaligned with the demands of the economy's fastest-growing sectors.

This mismatch between projected labour demand and current graduate skill sets points to the need for curriculum redesign. Since the fastest-growing sectors persistently demand competencies like data analysis, coding, and digital fluency, higher education institutions should recognise these competencies as foundational and no longer treat these as specialised skills confined to computer science or engineering programs. Instead, curricula across disciplines should be periodically aligned with the NSDC's sectoral growth projections to ensure their continued relevance to labour market needs.

Core Mismatch Finding

Combining the supply- and demand-side conclusions, it is apparent that India's graduate workforce is structurally unprepared to meet the sector-wise employment demands anticipated for 2026-27. Examining the supply side, despite a growing labour force, a large number of workers continue to be absorbed into self-employment and informal work rather than valuable formal employment, with rural regular salaried employment stagnating at just 12.7% in 2023-24. The sectors producing the highest economic value are not the sectors generating the most jobs, and the sectors projected to grow fastest by 2026-27 need the accurate technical and digital skills that India's current degree programs fail to provide. The crisis is therefore not one of quantity, where India is not producing graduates in outstanding numbers, but one of coordination between educational output and the structural demands of a diversifying economy.

Collectively, these three findings reveal a common underlying issue which is not a shortage of graduates or a shortage of jobs, but rather weak coordination between higher education institutions and skills-development institutions, including the NSDC and vocational training providers and the sectors that generate employment opportunities. Addressing this mismatch therefore requires coordinated interventions at all three levels simultaneously as reflected in the policy recommendations that follow.

Policy recommendations

One of the major discrepancies, or rather inadequacies, identified by the sectoral analysis in this paper regarding our graduates' lack of market readiness lies in the coordination failure between India's education output and its emerging employment landscape. A critical finding of this paper is that sectors projected to grow fastest, such as computer programming and motor vehicles, with growth rates of 65.3% and 41.7%, respectively, specifically demand technical and digital competencies that current graduate programs are not able to deliver. Despite high enrollment in technical disciplines, graduates are being absorbed into self-employment and informal work, with regular salaried employment in rural areas stagnating at just 12.7%. This clearly suggests

that the quality of technical education is not meeting industry requirements. The solution to this is to make industry-relevant skills like data analysis, coding, and digital fluency essential to incorporate into degree programs. Universities and technical institutes should be required to benchmark their programs against NSDC skill gap projections periodically.

Retail and trade, projected to grow at 42.3%, occupy a unique position in India's employment landscape. According to the paper's findings, trade is the only sector appearing in both high GVA and high employment categories, making it structurally significant. However, graduates consistently overlook retail as a career option, perceiving it as low-status. This perception gap means that a sector generating significant formal employment remains undersupplied with skilled graduate labour, and graduates rather opt for disciplines that are structurally misaligned with the current job market. Career counselling frameworks at the university level must actively address this by providing graduates with accurate labour-market information on formal employment opportunities, growth trajectories, and salary profiles in sectors they currently undervalue.

The data from the study reveals that despite a significant rise in rural graduate LFPR, from 61.5% in 2017-18 to 69.6% in 2023-24, rural regular salaried employment has barely moved, stagnating at 12.7%. This means that the rural labour market is absorbing a growing educated workforce almost entirely into self-employment and informal work. Policy must specifically target the formalisation of rural graduate employment by creating fiscal incentives for firms that hire graduates on formal contracts in non-metro locations.

Female graduate unemployment remains nearly twice that of male graduates, despite women entering the labour force in significant numbers. This gap cannot be attributed to a lack of ambition or participation; the LFPR data make that clear; rather, it points to structural barriers to absorption. Policy focus needs to be given not only in encouraging more female participation, which is already on the rise, but also in holding employers accountable for not hiring at equivalent rates, which can be achieved only when female hiring outcomes become visible and measurable by rule, rather than leaving them untracked and at the discretion of the employer.

It was also found that agricultural employment unexpectedly rose during the 2019-20 pandemic years and remains one of the largest employers even now. However, the projected growth in this sector is among the lowest. This peculiar stat suggests that graduates are not entering the agricultural sector by choice but are falling into it because nothing else is available, a classic case of distress absorption. There needs to be a mechanism specifically designed to pull graduates out of distress employment in sectors that are not aligned with their degrees. This also highlights a technical shortcoming in our measurement of employment rates; it is necessary to determine whether the employment is skill-matched or of high quality. Only when this information is known can effective policy interventions be put in place. To close this internal skills gap, a shift towards localised planning, a dedicated administrative workforce and greater integration of

corporate funding to upgrade vocational centres is required. To capitalise on this fleeting demographic dividend and avoid huge underemployment, India needs to swiftly transition from a degree-based education system to a modern, globally benchmarked, technical, continuous, hands-on training model.

Conclusion

The analysis of PLFS data between 2017-18 and 2023-24, as done in the paper, shows that graduate labour force participation increased from 60% to 66.2%, while graduate unemployment declined from 17.2% to 13%. This shows that the graduate labour market expanded and absorbed the growing number of educated workers, but the pattern was highly uneven across gender and location. The rise in aggregate labour supply was driven mainly by rural female graduates. The female LFPR increased by 13.1%, yet this group still faced an unemployment rate of 22.7% in 2023-24, more than twice the rate for urban male graduates. Rural graduates also face higher unemployment than urban graduates, even though their participation grew faster than that of the urban graduates.

A better response would be to strengthen job creation in rural areas and to improve coordination between education and employment opportunities. Measures such as local market tracking and targeted employment support could help graduates secure stable work.

The number of graduates is increasing. The quality of education they receive is a big concern. Many new graduates are turning to self-employment or other forms of work instead of taking stable jobs. In some areas, only 12.7 per cent of graduates had regular salaried jobs in 2023-24. This means that, even as the unemployment rate might be going down, many graduates are still not getting the jobs they want or the ones which align with their level of education. When we look at the sectors, the problem becomes even clearer. Some sectors, such as computer programming, are growing rapidly. They need people with advanced technical skills. India is not producing graduates with these skills.

On the other hand, sectors like agriculture offer many jobs, but they do not pay well and are not very productive. This is an imbalance between what graduates are learning in college and what the economy needs. It is not one group's fault. Colleges, employers and the government are all failing to do their part. Colleges need to closely analyse what they are teaching and whether it is relevant to the jobs available today. The government should focus on creating quality jobs, along with ensuring the growth of the economy. Some things that could help include offering apprenticeships for final-year students and mapping the skills needed in each district. This could help graduates get the skills they need to get jobs.

This study has some limitations. It is based on existing data. Does not talk to graduates or employers directly. Future studies could examine the skills required in each sector and how different state policies affect graduate employment. If things remain the same, many Indian graduates will be stuck with degrees that do not help them get a job and would be of no use. The job market is going to value what they studied. They will not be able to use their education to get ahead. India's educated youth will continue to face this problem unless something changes.

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