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DEGREES WITH DIVIDENDS: EDUCATION AND EMPLOYMENT IN PUNJAB'S LABOUR MARKET

WYKSZTAŁCENIE Z DYPLOMAMI: EDUKACJA I ZATRUDNIENIE NA RYNKU PRACY W PENDŻABIE

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Abstract

Subject and Purpose: This paper examines employment and income trends in Punjab, with a focus on youth, and level of education. It aims to identify structural labour market gaps and recommend targeted policies for inclusive, sustainable employment.

Materials and Methods: This study is based on unit-level data from the Periodic Labour Force Survey (PLFS) for the years 2017-18 to 2023-24. Employment indicators and average wage estimates were calculated using Stata 17 statistical software to ensure precise, consistent, and policy-relevant analysis.

Results: The analysis reveals persistent youth unemployment, low wage returns despite rising education, and a labour market dominated by informal and low-quality jobs in Punjab. While some employment indicators have improved post-pandemic, structural gaps remain in job creation and income mobility.

Conclusions: Punjab's labour market shows modest recovery but remains constrained by high youth unemployment, low wage returns, and structural informality, demanding urgent policy intervention.

Keywords: labour economics, education, employment, self-employment, salaried person, casual wage, wage

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Streszczenie

Temat i cel: Niniejszy artykuł analizuje trendy w zakresie zatrudnienia i dochodów w Pendżabie, ze szczególnym uwzględnieniem młodzieży i poziomu wykształcenia. Jego celem jest identyfikacja strukturalnych luk na rynku pracy oraz przedstawienie zaleceń dotyczących ukierunkowanych polityk na rzecz integracyjnego i zrównoważonego zatrudnienia.

Materiały i metody: Niniejsze badanie opiera się na danych jednostkowych pochodzących z okresowego badania siły roboczej (PLFS) za lata 2017-2018 do 2023-2024. Wskaźniki zatrudnienia i szacunki średnich wynagrodzeń zostały obliczone przy użyciu oprogramowania statystycznego Stata 17 w celu zapewnienia precyzyjnej, spójnej i istotnej z punktu widzenia polityki analizy.

Wyniki: Analiza ujawnia utrzymujące się bezrobocie wśród młodzieży, niskie wynagrodzenia pomimo rosnącego poziomu wykształcenia oraz rynek pracy zdominowany przez nieformalne i niskiej jakości miejsca pracy w Pendżabie. Chociaż niektóre wskaźniki zatrudnienia uległy poprawie po pandemii, nadal istnieją strukturalne luki w tworzeniu miejsc pracy i mobilności dochodów.

Wnioski: Rynek pracy w Pendżabie wykazuje umiarkowane ożywienie, ale nadal jest ograniczony przez wysokie bezrobocie wśród młodzieży, niskie wynagrodzenia i strukturalną nieformalność, co wymaga pilnej interwencji politycznej.

Słowa kluczowe: ekonomia pracy, edukacja, zatrudnienie, samozatrudnienie, osoba zatrudniona na etacie, wynagrodzenie dorywcze, wynagrodzenie

1. Introduction

Punjab, long hailed as the "Granary of India," has historically been central to India's agricultural and rural development. However, its early success driven by the Green Revolution has gradually given way to a more complex economic landscape marked by stagnation and structural rigidity. Once synonymous with agricultural prosperity, the state now faces economic moderation, labour market distortions, and underutilization of human capital. According to the *Punjab Economic Survey 2024-25*, the state's average Gross State Domestic Product (GSDP) growth between 2015-16 and 2023-24 was 5.2 per cent, with a marginal uptick to 6.8 per cent in 2023-24 (Advanced Estimates). Agriculture remains significant, contributing nearly 29 per cent to the Gross State Value Added (GSVA) during 2011-12 to 2023-24, and employing over a quarter of the workforce. Punjab continues to be a major contributor to India's food security, supplying 46 per cent of wheat and 31 per cent of rice to the central pool in 2023-24. Yet, this agricultural dominance reveals deep-rooted economic vulnerabilities. Punjab's overdependence on agriculture, alongside a sluggish manufacturing sector and a weakly diversified services economy, reflects a structural imbalance that inhibits long-term growth (Sharma, 2024). Informalization, persistent unemployment, and a growing skill mismatch further underscore the limitations of this growth model.

Recent *Periodic Labour Force Survey* (PLFS) data (2022-23) shows that Punjab's agriculture sector employs 26.6 per cent of the workforce, significantly lower than the national average of 45.7 per cent. However, rural dependency remains high, with 35.8 per cent of rural workers engaged in agriculture. Despite a marginal decline in unemployment rates, Labour Force Participation Rates (LFPR) remain low, especially for women. The employment landscape, particularly for educated youth, is marked by underemployment and poor returns to education. Several studies (e.g., Bishnoi et al, 2024; Mehrotra & Parida, 2019, 2023; Rawal & Bansal, 2019) suggest that higher education does not consistently translate into better earnings, pointing to the inefficacy of education as a tool for upward mobility in Punjab's labour market. Moreover, The COVID-19 pandemic further disrupted employment patterns, exacerbating vulnerabilities among casual and self-employed workers (Bhatt, Grover, Sharma, 2020).

While national-level studies have examined the education-employment relationship (Duraisamy, 2002; Agrawal, 2011; Chen et al., 2022), there is limited empirical work focusing specifically on Punjab. This study addresses this gap by: (a) identifying challenges faced by educated workers, (b) examining the earnings-education relationship across employment categories, and (c) assessing whether labour market indicators reflect a V-shaped or K-shaped recovery post-COVID-19. Punjab's relevance is further accentuated by its demographic dynamics. It is a major recipient of interstate migrants, with over 2.4 million migrants, mostly from Uttar Pradesh and Bihar (Census 2011), making it the 8th largest destination state. This interlinkage positions Punjab as critical to addressing employment-related distress not just locally, but also nationally.

Critically, Punjab presents a paradox – its reputation as a prosperous state coexists with economic precarity. Investigating this paradox allows for a deeper understanding of structural unemployment and policy failures in ostensibly developed regions. By focusing on Punjab, this study contributes to the broader discourse on subnational economic distress and offers policy-relevant insights applicable to similarly placed economies elsewhere.

This study utilizes unit-level data from the *Periodic Labour Force Survey* (PLFS), conducted by the National Sample Survey Office (NSSO), covering the period from 2017-18 to 2023-24. The PLFS replaced the earlier quinquennial *Employment and Unemployment Surveys* (EUS) to address the significant time lag in employment data reporting and to provide more frequent and timely estimates to support evidence-based policymaking. The PLFS captures critical labour market indicators, including employment status, education levels, and earnings across three primary employment types: self-employment, regular salaried/wage employment, and casual wage work. For this study, all employment-related estimates are based on the *Current Weekly Status* (CWS) approach, which uses a 7-day reference period to classify an individual's principal activity status.

Earnings data in the PLFS are recorded across non-uniform reference periods, which presents analytical challenges. Specifically, for self-employed workers, earnings are reported for the past 30 days; for regular salaried/wage workers, earnings are recorded for the last calendar month; and for casual workers, daily wages are captured based on the last 7 days. Due to this inconsistency in the reference periods, our analysis treats each employment category separately, examining trends in education and income within each group before drawing broader comparisons across categories. This disaggregated approach ensures more accurate and meaningful insights.

To assess the dynamics more critically, the study focuses on two demographic groups: (a) youth (aged 15–29 years), and (b) the overall working-age population. Particular attention is given to the youth cohort, given its heightened vulnerability to labour market shocks, skill mismatch, and educational underemployment. This paper is organized to provide a comprehensive understanding of employment and income patterns in Punjab. It begins by examining employment trends using the Current Weekly Status (CWS) approach. It then explores how education relates to income for different types of workers – self-employed, regular salaried, and casual wage workers – each in separate sections. The analysis also considers the impact of the COVID-19 pandemic, particularly on casual workers. A comparative perspective is offered by evaluating Punjab's labour market performance against other major Indian states. The paper concludes with key findings and policy suggestions aimed at addressing employment challenges in the state. By focusing on each worker category individually, the study highlights how education influences earnings and reveals the broader structural issues shaping Punjab's labour market.

2. Employment Trends on Current Weekly Status Approach

Table 1 presents employment indicators like Labour Force Participation Rate (LFPR), Worker Population Ratio (WPR), and Unemployment Rate (UR) for Punjab across six years (2017-18 to 2023-24), disaggregated by youth (15-29 years) and the overall population, based on Current Weekly Status (CWS) estimates.

2.1. Improving unemployment rate and workers population ratio.

LFPR among youth rose from 39.5 per cent in 2017-18 to 46.3 per cent in 2023-24, indicating a growing willingness or necessity among young individuals to seek work. However, this rise is not consistent, with a sharp dip during 2020-21 (40.5%), likely due to the pandemic's disruptions. For the overall population, LFPR has improved gradually from 35.5 per cent to 42.9 per cent, though it remains lower than the national average, especially for women, suggesting persistent discouragement or structural exclusion from the workforce.

The second indicator, WPR among youth increased from 30.5 per cent in 2017-18 to 36.7 per cent in 2023-24, but this trend, like LFPR, was interrupted during the pandemic year (2020-21). The recovery post-COVID indicates some resilience in the labour market. However, the gap between LFPR and WPR – especially for youth – remains significant, implying that a large portion of young entrants are unable to find work. For the overall population, WPR increased modestly from 33.1 per cent to 39.7 per cent, pointing to a gradual strengthening of employment but still reflecting underutilization of labour.

Table 1. Employment indicators on current weekly status: Punjab (%)

Years	15-29 years age			Overall population		
	LFPR	WPR	UR	LFPR	WPR	UR
2017-18	39.5	30.5	22.8	35.5	33.1	10.4
2018-19	41.0	31.5	23.3	36.7	33.4	9.0
2019-20	47.7	36.6	23.2	40.4	36.0	11.0
2020-21	40.5	31.5	22.3	38.2	34.8	9.0
2021-22	45.3	35.3	22.0	40.2	36.4	9.4
2022-23	46.7	37.1	20.5	41.5	37.8	8.9
2023-24	46.3	36.7	20.8	42.9	39.7	7.4

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule**.**

Youth unemployment remains alarmingly high, fluctuating between 20-23 per cent, with only a modest decline to 20.5 per cent in 2022-23. This persistent high UR, despite rising LFPR and WPR, reveals a structural failure in absorbing educated or skilled youth into meaningful employment. It also indicates a mismatch between labour supply and demand, or poor job quality that leads to voluntary withdrawal from employment. In contrast, the overall unemployment rate has declined from 10.4 per cent to 7.4 per cent, but still reflects stress in the labour market.

The data underscores youth as the most vulnerable group in Punjab's labour market. Despite higher participation, they face disproportionately high unemployment, indicating poor alignment between education, skills, and market needs. The persistence of double-digit unemployment for youth and the sluggish overall improvement point to deeper structural issues such as inadequate industrial growth, lack of formal employment opportunities, and skill mismatches. The 2020-21 dip across indicators reflects pandemic-induced shocks, but the uneven recovery – particularly the slow decline in unemployment—suggests that job creation has not kept pace with labour supply. There is a critical need for targeted employment policies focused on quality job creation, skill development aligned with market needs, and labor-intensive sectors to absorb young workers meaningfully. As a result, there is intense competition for a limited number of quality jobs, making the unemployment crisis in Punjab more severe than in many other Indian states (Kumar, 2015). In summary, while employment indicators in Punjab have shown marginal improvement post-pandemic, high youth unemployment and low LFPR continue to pose major challenges for inclusive and sustainable growth. Additionally, studies have shown that a considerable segment of the educated youth is unwilling to take up low-paying or informal jobs, leading to rising unemployment despite the presence of job openings (Boora-Bishnoi, 2020). This trend is further exacerbated by a growing number of young individuals choosing to exit the labour force altogether, discouraged by the lack of meaningful employment options – a phenomenon particularly evident in Punjab (Mehrotra, 2015).

2.2. Classification of workers on the broad employment status group

Table 2 presents the distribution of workers in Punjab by employment status – self-employed, regular salaried/wage, and casual wage labour – between 2017-18 and 2023-24, for both youth (15-29 years) and the overall population. Among youth, regular salaried or wage employment consistently accounts for the largest share, increasing from 42.5 per cent in 2017-18 to 50.4 per cent in 2023-24. However, this category experienced a notable decline during 2020-21, dropping to 39.5 per cent, likely reflecting the pandemic's impact on formal and semi-formal employment. Self-employment among youth showed volatility, ranging from a low of 27.1 per cent in 2018-19 to a high of 36.5 per cent in 2020-21, indicating that many turned to self-employment during economic shocks. Casual wage labour, although fluctuating, remained a significant category for youth, peaking at 28.4 per cent in 2021-22 before declining to 17.4 per cent in 2023-24, highlighting persistent employment precarity. Declining casual workers share is a good sign.

For the overall population, self-employment remained the dominant form of work throughout the period, consistently around 45-47 per cent, indicating the structural informality of Punjab's labour market. Regular salaried employment showed limited growth, while casual labour saw a temporary rise during the pandemic (23.0% in 2020-21), before returning to pre-COVID levels.

Table 2. Workers classified on broad employment status: Punjab (%)

Years	15-29 years age			Overall population		
	Self- employed	Regular salaried/wage	Casual wage labour	Self- employed	Regular salaried/wage	Casual wage labour
2017-18	35.1	42.5	22.3	46.7	34.3	19.0
2018-19	27.1	47.8	25.1	42.8	36.6	20.6
2019-20	33.7	44.4	21.9	44.9	35.8	19.2
2020-21	36.5	39.5	24.1	45.7	31.3	23.0
2021-22	30.9	40.8	28.4	45.2	32.0	22.8
2022-23	32.0	46.7	21.3	46.9	34.3	18.9
2023-24	32.2	50.4	17.4	47.7	34.9	17.3

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

The data reveals that Punjab's workforce remains heavily informal, with limited transition from insecure to stable employment. The situation is more dynamic among youth, who face a dual challenge – while a relatively higher proportion enter salaried jobs, many are still pushed into self-employment or casual work due to lack of formal opportunities. These patterns reflect the fragility of the state's labour market, its limited industrial base, and the absence of strong pathways for employment mobility. Addressing this requires focused policy efforts to expand quality job opportunities, support youth entrepreneurship, and reduce dependence on informal and low-productivity work.

3. Self Employed

Recent studies using PLFS and NSSO data show that self-employment has become a dominant employment category in Punjab, yet earnings from self-employment remain significantly lower compared to salaried work.

3.1. Education trends

The data from Table 3 presents the educational distribution of self-employed workers in Punjab, segmented by youth (15-29 years) and the overall population from 2017-18 to 2023-24. A critical examination of this dataset highlights several important trends and structural issues in the labor market. The most striking trend among the 15-29 years age group is the sharp and consistent increase in self-employed youth with secondary education, rising from 37.8 per cent in 2017-18 to a peak of 62.4 per cent in 2022-23. While this declined slightly in 2023-24, the figure (51.1%) remains significantly higher than earlier years. This suggests that youth with at least a secondary education are increasingly engaging in self-employment, possibly due to limited availability of formal jobs or the growing appeal of entrepreneurship amid job market constraints.

Table 3. Distribution of self-employed workers on education level: Punjab (%)

Year	Not literate	Primary education	Middle education	Secondary education	Higher education
15-29 years age					
2017-18	5.6	14.9	23.2	37.8	18.5
2018-19	2.4	11.9	24.7	46.5	14.5
2019-20	4.9	13.7	17.7	34.4	29.3
2020-21	4.2	14.3	15.1	43.6	22.9
2021-22	4.2	8.7	16.3	52.5	18.3
2022-23	2.5	5.9	12.6	62.4	16.6
2023-24	2.6	12.0	16.7	51.1	17.5
Overall population					
2017-18	17.4	15.9	21.4	32.4	12.9
2018-19	12.6	18.7	18.5	39.1	11.1
2019-20	15.3	17.2	15.5	36.3	15.7
2020-21	14.6	17.3	15.6	36.7	15.8
2021-22	13.1	16.9	18.3	39.0	12.7
2022-23	14.6	16.0	14.9	42.9	11.5
2023-24	14.8	16.6	15.3	42.3	11.1

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

The share of self-employed youth with higher education shows considerable fluctuation—rising to 29.3 per cent in 2019-20, then dropping to 16.6 per cent in 2022-23. This volatility could reflect both structural mismatches between educational aspirations and market realities, and the tendency for better-educated individuals to seek wage or salaried employment, avoiding self-employment unless compelled by lack of alternatives.

There is a clear decline in self-employment among youth with low education levels. For example, those not literate dropped from 5.6 per cent to around 2.5 per cent, and those with only primary education fell from 14.9 per cent to 5.9 per cent over the same period. This may indicate the growing irrelevance of low-education self-employment due to both market competitiveness and structural shifts in the rural and urban economy, where minimal skills no longer guarantee even informal livelihood.

In contrast, the overall population's educational distribution among self-employed workers shows much less dynamism. The share of workers with secondary education increased modestly, while the proportion of higher-educated self-employed workers remained stagnant around 11-15 per cent. The persistent share of not literate and primary-educated self-employed (around 12-17%) indicates that a significant portion of the adult population remains trapped in low-productive, necessity-driven self-employment, lacking upward mobility.

This divergence in trends suggests that youth self-employment is becoming more education-intensive, but structural job creation is lagging behind educational expansion. Many educated youths may be turning to self-employment not as a preferred choice but as a fallback option due to high unemployment in the formal sector. The overall stagnation among adults further reflects the persistence of subsistence-oriented self-employment, underlining the need for targeted skilling, access to credit, and market linkages, especially for the rural and informal segments.

3.2 Income trends

The data from Table 4 reflects the income distribution of self-employed workers in Punjab. It shows that youth dominated by low-income self-employment. A consistently high proportion of self-employed youth earn less than ₹10,000 per month, with this group comprising over 60 per cent of youth in most years, peaking at 68.3 per cent in 2019-20. Even in 2022-23, nearly half (49.44%) of young self-employed workers remained in this income bracket. This dominance of low earnings suggests that self-employment among youth is largely subsistence-based, with limited scope for upward mobility or business expansion. It also reflects informal, low-capital ventures, often taken up out of necessity rather than entrepreneurial aspiration.

Further, there is modest gains in middle-income categories. There is a noticeable but limited shift towards the ₹10,000-25,000 income category, rising from 30.08 per cent in 2017-18 to 43.76 per cent in 2022-23, indicating some improvement in earnings among young self-employed workers. However, growth beyond this band is minimal. The share of youth earning more than ₹25,000 remains extremely small, rarely crossing 6-7 per cent in any year. This signals severe constraints on income generation, possibly due to lack of market access, capital, training, and scale among young entrepreneurs.

In contrast, the overall self-employed population displays a more even income distribution, with a declining share in the lowest bracket (from 45.29 per cent in 2017-18 to 38.96 per cent in 2023-24) and a steady rise in the ₹25,000+ categories, especially in recent years. For instance, in 2023-24, over 21 per cent of the overall self-employed population earned more than ₹25,000, compared to only 4.73 per cent of youth. This suggests that older self-employed workers are more likely to operate established, higher-revenue enterprises, possibly benefiting from experience, networks, and accumulated capital.

Table 4. Distribution of self-employed workers on income level: Punjab (%)

Years	up to 10k	10-25k	25-40k	40-55k	>55k
	15-29 years age				
2017-18	65.46	30.08	3.91	0.45	0.10
2018-19	62.98	32.18	4.75	0.09	-
2019-20	68.30	27.14	4.46	0.10	-
2020-21	63.81	30.66	3.29	1.21	1.03
2021-22	53.09	40.30	3.58	2.13	0.89
2022-23	49.44	43.76	5.27	1.50	0.02
2023-24	57.28	37.99	3.67	0.57	0.49
Overall population					
2017-18	45.29	42.64	9.27	2.50	0.30
2018-19	43.26	41.04	11.87	2.76	1.07
2019-20	52.66	33.38	9.01	3.87	1.07
2020-21	44.35	38.97	11.05	4.83	0.80
2021-22	36.22	44.06	13.87	4.27	1.57
2022-23	35.47	45.98	12.40	4.72	1.42
2023-24	38.96	40.02	13.13	5.56	2.32

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

The stark income disparity between youth and the overall self-employed population points to structural disadvantages faced by younger workers – limited financial resources, inadequate business support, and insufficient institutional backing. Despite rising education levels (as seen in Table 3), income outcomes for self-employed youth remain disproportionately low, suggesting a disconnect between education and income-generating capacity in self-employment.

The data underscores the precarity of youth self-employment in Punjab, driven more by the compulsion to survive than the potential to thrive. Addressing this challenge requires targeted interventions, such as skill-based training linked to enterprise development, access to low-cost finance, market support, and mentorship for young entrepreneurs. Without structural reforms, the dominance of low-income self-employment could further entrench youth underemployment, limit their economic mobility and contribute to broader social disillusionment.

3.2. Education and income relation

The nexus between education and earnings has been widely studied at the both national and international levels. According to the foundational human capital theory, investment in the education increases productivity and leads to higher earnings (Becker,1964). Empirical studies in India have supported this argument, revealing a strong correlation between educational attainment and earnings, especially in formal employment (Duraismy,2002; Agrawal,2011). However, recent research studies have pointed out that there are distortions emerging in this trend, particularly in the self-employment sector, where higher educational qualifications do not necessarily transcend into better earnings (Chen et al.,2022).

Table 5. Average earnings of self-employed worker on education level: Punjab

Education level	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
15-29 years age							
Not literate	6262	9248	8642	7119	8380	6571	14396
Primary education	7885	8018	6935	9053	14543	10368	11776
Middle education	10124	9842	7359	9516	11050	12278	8785
Secondary education	11158	12827	11058	13798	11381	11245	10255
Higher education	15119	10350	11618	13595	15522	16462	15022
Overall population							
Not literate	10915	12892	11006	13690	13808	14737	13572
Primary education	12100	12556	10851	11584	15683	13809	15960
Middle education	13808	13996	11920	14657	15733	15913	16137
Secondary education	16511	17847	15535	17430	19434	18445	19197
Higher education	22154	22764	24836	23885	30031	27830	29345

Source: See Table 1. (Note: For calculation of average gross earnings from self-employment, estimated persons with current weekly status 11 to 62 who reported gross earnings have been considered).

The data from Table 5 presents the average earnings of self-employed workers in Punjab. Among the 15-29 years age group, there is a general positive correlation between education and income, especially at the higher levels. For instance, in 2023-24, average earnings for self-employed youth with higher education stood at ₹15,022 – more than twice the earnings of those with only primary education (₹11,776) and far above the illiterate category (₹14,396, which is anomalously high for that year and likely reflects outlier effects). This trend affirms that education improves income potential, though the gains are more substantial at higher education levels.

Youth earnings, especially at middle and secondary education levels, show considerable volatility across years. For instance, youth with middle education earned ₹12,278 in 2022-23, but this fell to ₹8,785 in 2023-24. Such fluctuations indicate income instability among young self-employed workers, likely due to inconsistent business opportunities, lack of capital, market linkages, and susceptibility to economic shocks – especially during and after the pandemic years.

Across all education levels, youth consistently earn less than the overall self-employed population. For example, in 2023-24, self-employed workers with higher education earned ₹29,345 on average, nearly double that of similarly educated youth. This suggests that experience, networks, and scale – factors typically associated with older self-employed individuals – are crucial in determining income, and that education alone is insufficient for young workers to achieve comparable returns.

Among the overall population, the return to higher education is both significant and consistent, with average earnings rising from ₹22,154 in 2017-18 to ₹29,345 in 2023-24. This sharp increase reflects the market premium for skills and capabilities associated with advanced education, but also underscores that such returns accrue more substantially with age and experience – likely due to better business acumen, access to credit, and more established enterprises.

The data strongly suggests that young self-employed workers are disadvantaged in converting education into earnings, pointing to structural barriers in Punjab's economy. Despite acquiring education, young people face limited access to productive assets, mentorship, or enabling environments that can help them scale their self-employment ventures.

4. Regular Salaried/ Wage Workers

Persons working in other's farm or non-farm enterprises (both household and non-household) and getting in return salary or wages on a regular basis (and not on the basis of daily or periodic renewal of work contract) are the regular wage/ salaried workers or employees. This category not only includes persons getting time wage but also persons receiving piece wage or salary and paid apprentices, both full time and part-time.

4.1. Education trends

The distribution of regular salaried/wage workers in Punjab across educational levels reveals significant structural trends and educational stratification within the labour market. Among youth (15-29 years), a consistently high share of salaried employment is concentrated among those with secondary and higher education, underscoring the importance of formal qualifications for stable employment. For instance, in 2017-18, nearly 60 per cent of youth in salaried jobs had either secondary (29.6%) or higher education (29.8%), a pattern that persists in subsequent years. Notably, in 2019-20, those with higher education peaked at 36.9 per cent, reflecting possible educational expansion and greater labour force entry of graduates.

However, the trend becomes erratic post-2020, with the share of higher-educated youth declining significantly to 23.2 per cent in 2020-21 and 22.5 per cent in 2023-24. This decline may reflect a mismatch between rising qualifications and limited quality employment opportunities – an indication of underemployment or the saturation of graduate-level jobs. Conversely, those with secondary education have increasingly gained ground, rising from 28.3 per cent in 2019-20 to 41.5 per cent in 2023-24, suggesting growing demand for moderately educated workers in salaried sectors.

Table 6. Distribution of regular salaried/wage worker on education level: Punjab (%)

Year	Not literate	Primary education	Middle education	Secondary education	Higher education
15-29 years age					
2017-18	3.6	17.4	19.5	29.6	29.8
2018-19	2.9	18.8	21.0	32.3	25.0
2019-20	5.3	13.6	15.8	28.3	36.9
2020-21	4.8	13.1	15.6	43.4	23.2
2021-22	5.1	15.6	22.1	34.9	22.3
2022-23	3.0	17.3	14.9	37.0	27.9
2023-24	3.5	11.6	20.9	41.5	22.5

Overall population					
2017-18	11.0	14.4	15.6	31.5	27.5
2018-19	11.8	17.1	17.4	30.9	22.8
2019-20	13.3	14.9	14.4	27.9	29.6
2020-21	14.2	13.7	14.7	35.3	22.1
2021-22	13.3	15.9	15.2	31.7	23.8
2022-23	10.3	16.7	13.9	30.9	28.2
2023-24	12.9	14.2	17.0	34.2	21.7

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

Among the overall population, the dominance of secondary and higher education remains, though less sharply defined. A notable concern is the persistently significant share of regular salaried workers who are not literate or only have primary education (e.g., 24.7% in 2023-24). This reflects legacy employment patterns or possible low-skilled service sector absorption, which may offer job stability without demanding high education.

Critically, while the data points to expanding opportunities for educated youth, it also reveals persistent structural dualisms – educated youth face underutilization, and less educated workers remain in formal jobs, possibly through low-paying, less secure positions. This calls for better alignment between education, skill development, and employment policies in Punjab.

4.2. Income trends

The income distribution of regular salaried/wage workers in Punjab highlights stark disparities between youth (15-29 years) and the overall population, with critical implications for employment quality and wage progression. For youth, the data reflects an overwhelming concentration in low-income brackets. In 2017-18, 72.5 per cent of salaried youth earned up to ₹10,000 per month, and this figure remained high at 55.2 per cent in 2023-24 despite gradual improvements. Although the proportion of youth earning ₹10,000-₹25,000 rose significantly from 21.8 per cent in 2017-18 to 39 per cent in 2023-24, very few crossed the ₹25,000 threshold – only 5.8 per cent in 2023-24 earned above this level. This reflects a structurally compressed wage distribution for young workers, likely due to limited work experience, entry-level jobs, and saturation in low-paying service roles.

Table 7. Distribution of regular salaried/wage worker on income level: Punjab (%)

Years	up to 10k	10-25k	25-40k	40-55k	>55k
	15-29 years age				
2017-18	72.5	21.8	5.1	0.5	0.1
2018-19	77.1	18.2	3.2	1.2	0.3
2019-20	64.0	19.6	14.4	1.3	0.7
2020-21	69.3	25.4	2.1	2.8	0.4
2021-22	72.7	24.0	2.3	0.1	1.0
2022-23	59.8	34.4	3.9	1.9	0.1
2023-24	55.2	39.0	4.0	1.4	0.4
Overall population					
2017-18	58.0	24.4	9.0	6.0	2.7
2018-19	63.3	22.7	7.5	4.8	1.8
2019-20	60.0	21.6	11.0	4.7	2.7

2020-21	55.9	28.8	7.5	4.8	3.1
2021-22	58.4	27.6	5.3	5.2	3.5
2022-23	51.3	32.2	7.3	4.0	5.2
2023-24	47.2	39.6	6.1	3.4	3.6

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

In contrast, the overall population shows a comparatively better income spread. By 2023-24, 47.2 per cent earned up to ₹10,000 – still substantial, but notably lower than youth figures. Furthermore, nearly 13.1 per cent earned above ₹25,000, compared to under 6 per cent among youth. This suggests that wage progression with age or experience is possible, but access to well-paying jobs remains restricted in early career stages.

Critically, the low-income concentration among youth, even as education levels have improved, underscores a serious disconnect between qualifications and earnings. Rising education levels are not translating into commensurate wages, pointing to underemployment or the prevalence of informal conditions even within salaried jobs. Moreover, the stagnation of higher-income brackets for youth over time hints at structural barriers – such as lack of high-skill jobs, weak industry-academia linkages, or inefficient job matching mechanisms. Overall, while modest improvements are visible in the ₹10k–25k range, the persistently low wage levels, particularly for educated youth, signal a need for targeted interventions to enhance job quality, promote upward mobility, and ensure fair wage outcomes in Punjab's labour market.

4.3. Education and Income relation

Table 8 provides a clear picture of how educational attainment correlates with average earnings in Punjab's labour market. Among the 15-29 age group, higher education consistently yields the highest earnings, though with notable volatility. For instance, average earnings of graduates and above rose sharply from ₹14,213 in 2017-18 to ₹22,874 in 2019-20 but then declined and fluctuated, settling at ₹17,016 in 2023-24. This suggests that while higher education provides access to better-paying jobs, the returns are unstable and possibly affected by sectoral shifts or job quality issues.

Table 8. Average earnings of regular salaried/wage worker on education level: Punjab

Education level	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
15-29 years age							
Not literate	6456	7706	6684	9072	7306	6505	9158
Primary education	7508	7556	6539	9156	7247	9208	9646
Middle education	8512	7269	8555	7877	7631	8317	12220
Secondary education	8788	9282	9022	9568	9262	9872	10713
Higher education	14213	15313	22874	17312	16559	18117	17016
Overall population							
Not literate	7314	8073	6638	7894	7159	6862	7979
Primary education	8608	8342	7806	9740	8922	10813	10218
Middle education	9449	9077	9339	9877	9280	10966	11654
Secondary education	14469	13891	13344	15464	13420	14011	14958
Higher education	25803	24981	27399	27223	30524	33272	28912

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

At lower education levels (not literate to secondary), earnings remain modest. In 2023-24, youth with only secondary education earned ₹10,713 – less than two-thirds of what their higher-educated peers earned. Earnings for those with middle or primary education are even lower, though middle education showed a sharp jump in 2023-24 (₹12,220), possibly reflecting anomalies or shifts in wage structures in specific sectors.

In the overall population, the education-earnings gradient is more distinct and stable. Average earnings for those with higher education grew from ₹25,803 in 2017-18 to ₹33,272 in 2022-23, before dipping slightly in 2023-24. This group consistently earns more than twice the income of those with only secondary education, reinforcing the long-term value of higher education in wage progression.

Despite educational investments, young workers with higher education face fluctuating earnings, suggesting a mismatch between qualifications and job quality or sectoral demand. This weakens incentives for education unless complemented by employment opportunities. Earnings for lower education levels have stagnated or grown marginally, revealing limited economic returns and reinforcing the vulnerability of less-educated workers. Thus, to realize the full benefits of education, Punjab must address the demand side of the labour market – creating more high-skill jobs, strengthening job-matching mechanisms, and improving career pathways for educated youth.

5. Casual Wage Workers

A person casually engaged in other's farm or non-farm enterprises (both household and non-household) and getting in return wage according to the terms of the daily or periodic work contract is a casual wage labour. Usually, in the rural areas, one category of casual labourers can be seen who normally engage themselves in 'public works' activities.

5.1. Education trends

The distribution of casual wage workers in Punjab, segmented by education level, reveals key trends in labour market vulnerabilities. Among youth (15-29 years), those with lower education – primary or middle level – continue to dominate the casual labour force. In 2017-18, nearly 40 per cent of youth casual workers had only primary education. By 2023-24, the share of youth with secondary education in casual work rose sharply to 42 per cent, indicating that even moderately educated individuals are increasingly entering insecure, low-paying jobs. The presence of youth with higher education in casual work, though still limited (2.5% in 2023-24), is a concerning indicator of underemployment and weak absorption of skilled labour. For the overall population, a persistent concentration of casual workers with no or only primary education suggests entrenched informal employment patterns, especially among older or less-educated cohorts.

Government needs to Introduce modular, short-term vocational training linked to local industry demand to upgrade the skills of middle and secondary educated youth stuck in casual employment. Besides this, strengthen linkages between secondary schools and skill development programs, apprenticeships, and job placement services to reduce leakage into casual labour markets and offer wage subsidies or hiring incentives to firms employing secondary-educated youth in formal roles, especially in rural and peri-urban areas. Lastly, expand social security schemes and enforce labour codes in casual-dominated sectors like construction and agriculture to gradually formalize informal jobs.

Table 9. Distribution of casual wage workers on education level: Punjab (%)

Year	Not literate	Primary education	Middle education	Secondary education	Higher Education
15-29 years age					
2017-18	16.6	39.8	18.3	25.2	0.1
2018-19	27.0	29.2	23.9	18.2	1.7
2019-20	16.1	30.8	23.5	27.1	2.5
2020-21	10.8	30.5	32.8	24.7	1.3
2021-22	12.2	20.9	28.5	36.9	1.5
2022-23	12.6	19.5	29.7	34.5	3.7
2023-24	10.2	18.4	26.9	42.0	2.5
Overall population					
2017-18	36.3	27.7	17.9	17.4	0.6
2018-19	39.2	24.7	19.3	16.0	0.9
2019-20	40.8	21.9	17.6	18.7	1.0
2020-21	32.7	23.3	23.9	19.7	0.4
2021-22	32.4	25.6	19.5	21.8	0.6
2022-23	31.3	25.0	21.6	20.7	1.4
2023-24	32.7	26.7	19.2	20.4	1.0

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

Overall, the data underscores the urgent need for an integrated youth employment strategy that bridges the education-employment divide and promotes decent work for the semi-skilled in Punjab.

5.2. Income trends

The income distribution of casual wage workers in Punjab highlights gradual but important shifts in wage levels, especially among youth (15-29 years). In 2017-18, nearly 55 per cent of youth casual workers earned ₹250 or less per day, with only 17.6 per cent earning above ₹325. By 2023-24, the share earning more than ₹325 had risen significantly to 46.8 per cent, indicating some upward movement in casual wage rates. Similarly, for the overall population, those in the highest wage bracket rose from 18.4 per cent in 2017-18 to 51.4 per cent in 2023-24, showing a broader improvement in casual wage earnings.

However, this shift is uneven and should be interpreted with caution. In 2023-24, 33.5 per cent of youth still earned below ₹250 daily, reflecting persistent low-wage vulnerability, especially in informal segments. Moreover, casual work by nature remains precarious – often seasonal, unregulated, and lacking in social protections – regardless of minor wage improvements.

Table 10. Distribution of casual wage workers on income level: Punjab (%)

Year	Up to 175 INR	175-250 INR	250-325 INR	>325 INR
15-29 years age				
2017-18	24.2	30.0	28.1	17.6
2018-19	28.2	30.5	30.1	11.2
2019-20	19.1	27.8	32.4	20.7
2020-21	14.2	35.2	25.3	25.3
2021-22	14.1	18.2	27.0	40.8
2022-23	11.6	25.1	18.6	44.7
2023-24	19.1	14.4	19.7	46.8

Overall population				
2017-18	27.9	25.5	28.2	18.4
2018-19	27.4	29.5	28.0	15.1
2019-20	22.3	27.6	28.8	21.2
2020-21	15.0	32.1	28.1	24.8
2021-22	11.2	18.4	27.2	43.3
2021-23	13.6	19.5	21.9	45.0
2023-24	12.4	13.8	22.5	51.4

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule.

To ensure better living standards, minimum wage rates must be regularly revised in line with inflation and the cost of living. Strong enforcement mechanisms should be implemented, particularly in agriculture, construction, and informal services, where wage violations are common. Local-level wage tracking systems must be established to monitor real-time wage patterns and address wage suppression in sectors with high casual labour concentration. Casual workers should be enrolled in platforms like E-Shram and provided with access to health, accident, and income protection to stabilize livelihoods despite ongoing informality. While the data indicates a positive shift in wage distribution among casual workers, it also underscores the need for stronger and sustained state-level interventions to maintain wage growth, improve employment conditions, and promote gradual formalization of casual labour in Punjab.

5.3. Education and Income relation

Table 11 presents the average daily earnings of casual wage workers in Punjab. For the youth cohort, the earnings trend does not show a consistent or linear correlation with educational attainment. While individuals with primary to secondary education generally earn more than those without literacy, the returns to higher education among casual workers appear erratic and unexpectedly low. In 2023-24, for example, youth with higher education earned an average of ₹177 per day – substantially lower than those with middle (₹336) or secondary education (₹323). This anomaly may indicate a mismatch between the skills of highly educated individuals and the nature of casual work, where higher education does not necessarily translate into higher productivity or demand.

Table 11. Average earnings of casual wage workers on general education level: Punjab (INR)

Education level	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
15-29 years age							
Not literate	202	210	241	238	257	313	-
Primary Education	262	254	279	276	308	288	-
Middle Education	238	216	280	273	301	336	-
Secondary Education	231	222	247	266	320	323	-
Higher Education	79	198	237	239	299	177	-
Overall population							
Not literate	230	223	244	257	288	302	-
Primary Education	251	246	262	263	312	304	-
Middle Education	248	236	269	267	318	328	-
Secondary Education	240	248	257	282	324	319	-
Higher Education	263	203	276	239	306	212	-

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule. (Note: Casual wage labour is calculated for both public work and other types of work.).

Among the overall population, a modest but more consistent positive relationship is observed between education level and wages, especially up to the secondary level. However, like the youth cohort, higher education yields unstable returns, with average earnings declining from ₹263 in 2017-18 to ₹212 in 2023-24. These findings suggest that casual employment offers limited wage premiums for educational advancement beyond the secondary level.

Overall, the data underscores the structural limitations of casual labour markets in absorbing and adequately compensating educated workers. It highlights the need for targeted policy measures to improve skill-job matching and expand formal employment opportunities for educated labour in Punjab.

6. Comparison of Punjab with Major Indian States: Average Earnings by Employment Type (2022-23)

Table 12 provides a comparative overview of average monthly earnings across Indian states for three employment categories – self-employed, regular salaried/wage workers, and casual wage labour – in 2022-23. Punjab presents a mixed picture in this context. Punjab's self-employed workers earned ₹17,621 on average, which is significantly higher than the national average of ₹13,103 and ranks among the top five in the country. This suggests relatively better returns to self-employment in Punjab, potentially due to diversified agriculture, small businesses, and service-oriented enterprises. However, states like Goa (₹30,942) and Maharashtra (₹17,622) show even higher self-employment returns, likely reflecting stronger entrepreneurial ecosystems or tourism-linked economies.

Table 12. Average earnings of states classified on type work for year 2022-23 (in INR)

States	Self-employed	Regular salaried/wage	Casual wage labour
Jammu & Kashmir	12002	27357	377
Himachal Pradesh	9841	20792	360
Punjab	17621	17745	310
Uttarakhand	13319	20785	346
Haryana	16959	20106	328
Rajasthan	12887	19486	295
Uttar Pradesh	9857	18153	275
Bihar	11324	20022	336
Sikkim	10862	23399	503
Arunachal Pradesh	10884	30798	429
Nagaland	10960	25911	352
Manipur	12741	23728	464
Mizoram	16656	33071	363
Tripura	13864	18331	304
Meghalaya	9827	22891	310
Assam	17034	15266	392
West Bengal	10016	15394	265
Jharkhand	9852	22543	248
Odisha	9965	19132	237
Chhattisgarh	7504	15227	179
Madhya Pradesh	11162	17216	200
Gujarat	13413	15384	250
Maharashtra	17622	22320	242
Andhra Pradesh	14942	20684	307
Karnataka	16622	23649	316

Goa	30942	25229	474
Kerala	16064	22399	440
Tamil Nadu	15356	19629	311
Telangana	17951	26068	292
All India	13103	19719	294

Source: Calculations from PLFS unit-level data and figures are based on first visit schedule. Note: Parentheses indicate rank of the state among all states/UT in India. (Casual wage labour here includes casual work for public and others works.).

For regular salaried/wage workers, Punjab's average earnings stand at ₹17,745, slightly below the all-India average of ₹19,719. This indicates that Punjab underperforms in providing high-paying formal jobs compared to several other states such as Kerala (₹22,399), Karnataka (₹23,649), and Goa (₹25,229). This relatively weak performance reflects limited expansion of high-skilled formal employment sectors like IT, finance, and advanced manufacturing within the state.

Punjab fares poorly in the casual wage labour category, with average daily earnings of ₹310 – just marginally above the national average of ₹294. It is significantly lower than states like Kerala (₹440), Goa (₹474), and Mizoram (₹363). This implies that Punjab's casual labour market remains low-paying, underscoring weak bargaining power, limited job quality, and possibly high informal sector dependency.

While Punjab performs relatively well in self-employment earnings, it lags behind in regular salaried and casual wage employment. This imbalance signals the need for Punjab to diversify its economy beyond agriculture, invest in formal sector job creation, and enhance skill development to improve labour productivity and wage outcomes across all employment categories.

7. Conclusion

The analysis of Punjab's labour market between 2017-18 and 2023-24 reveals a complex picture of incremental progress shadowed by deep structural weaknesses, particularly in the context of youth employment. While indicators such as the Labour Force Participation Rate (LFPR) and Worker Population Ratio (WPR) have improved modestly post-pandemic, these gains mask persistent vulnerabilities – chief among them being high youth unemployment, underemployment, and a labour market skewed toward informal, low-paying work.

The LFPR among youth rose from 39.5 per cent to 46.3 per cent during the study period, suggesting growing engagement or need among young individuals to seek employment. Similarly, youth WPR improved from 30.5 per cent to 36.7 per cent, indicating a slow but positive trend in employment absorption. However, the persistent youth unemployment rate – hovering around 20-23 per cent – signals a troubling mismatch between labour supply and demand. It reveals not just a shortage of jobs, but a scarcity of *quality* jobs that align with educational qualifications and skillsets. This is further reinforced by the significant share of young individuals working in self-employment or casual labour, often as a necessity rather than a choice.

The youth employment scenario is particularly precarious. Regular salaried work, the most stable form of employment, is largely reserved for those with secondary or higher education. Yet even these educated youth experience wage stagnation and volatility, reflecting the limited presence of high-skill, high-productivity sectors. Young self-employed workers are predominantly trapped in low-income brackets – with over 60 per cent earning less than ₹10,000 per month in several years – underscoring the inadequacy of self-employment as a viable livelihood option for most.

Furthermore, the data on the relationship between education and income paints a sobering picture. While higher education generally leads to better earnings, this correlation weakens significantly among youth and in the informal segments. For example, highly educated youth in casual employment often earn less than their less-educated peers, reflecting poor returns on educational investment due to limited job matching, lack of experience, and absence of enterprise support systems.

Punjab's comparative performance with other major Indian states is also mixed. While self-employment earnings are relatively high – suggesting some vibrancy in small enterprises – regular wage earnings are below the national average, exposing the state's failure to generate high-value jobs in formal sectors. The underperformance in salaried employment, particularly in sectors like IT, manufacturing, and services, points to the need for diversification and economic restructuring.

Punjab stands at a critical crossroads. While educational attainment and youth participation in the labour force have grown, the state has not succeeded in translating these gains into meaningful, productive employment. The dominance of low-paying self-employment, erratic wage returns for educated youth, and persistently high youth unemployment are symptoms of structural malaise in the state's economic and employment architecture. To move toward inclusive and sustainable growth, Punjab must adopt a coordinated, data-driven employment strategy that simultaneously boosts formal sector job creation, empowers the informal sector, and unlocks the productive potential of its youth. The future of Punjab's economy – and the aspirations of its young workforce – hinges on the urgency and effectiveness of such a response.

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