Youth employment in India: dimensions and challenges

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February 2023

YOUTH EMPLOYMENT IN INDIA: DIMENSIONS & CHALLENGES

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I. INTRODUCTION

Youth population is on the rise globally and India is estimated to add about one-fifth of the incremental youth population in the next two decades. The relative '*greening*' of India's population and workforce that started in the late 1970s is likely to add close to 200 million working-age adults to the population by 2040. This is likely to bring down economic dependency ratio in the country, increase savings rate & investment ratios, and create chances for a leap in the macroeconomic growth rate. This opportunity in the middle stage of demographic transition when the population pyramid bulges in the middle is thus called Demographic Dividend. However, whether India is able to reap this demographic dividend would depend on whether these additional youth workforce find remunerative and productive jobs. The global reality is far from rosy and the ILO noted in the beginning of the century:

> ..... (a significant number of) "youth are underemployed, unemployed, seeking employment or between jobs, or working unacceptably long hours under informal, intermittent and insecure work arrangements, without the possibility of personal and professional development; working below their potential in low-paid, low-skilled jobs without prospects for career advancement; trapped in involuntary part-time, temporary, casual or seasonal employment; and frequently under poor and precarious conditions in the informal economy, both in rural and urban areas."
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> (ILO, 2005a)

If the youth are not absorbed into productive and meaningful work this potential demographic dividend will turn into a demographic disaster. Huge youth unemployment is the surest way to frustration, social tension and unrest, evident during the *Arab Spring*. Work by the Institute of Criminology at Cambridge University suggests that young people, bubbling with energy and vitality, often turn to crime when they do not have a job at hand. The first offence may be a petty one, but slowly it turns into more serious crime. Left untreated, youth unemployment may destabilise fragile economies, act as an incubator for violence, and leave a permanent scar on the society that transcends generations. Given the social and spatial diversity in our vast country, there are *excluded* groups/regions where the youth lack adequate marketable skills or where economic sluggishness has kept the demand for labour at a low level, trapping the region at a low level equilibrium. Thus whether our increasing share of youth population is our advantage or millstone would depend critically on their employment situation. In this paper we examine the employment situation of youth in India and try to underline the challenges that lie ahead.

II. BACKGROUND, CURRENT LITERATURE AND OBJECTIVES:

According to ILO, growing and large magnitude of unemployed youth is one of the most daunting challenges faced by both developed and developing countries (ILO, 2004, 2005b). Historically, young people always face a huge challenge in finding job after leaving education, and so unemployment among them has been more than double that of the older age groups even in advanced economies (Morsy, 2012). This is so as youth, fresh pass outs from the educational system, have no experience and also do not possess skills that are obtained through '*learning-by-doing*'. They do not have the social capital in the form of networks necessary to land a job in the private sector. In many cases, they also wait for the *right type* of employment that they aspire for, adding to what we call *wait unemployment*. Thus the labour market poses entry barrier to the youth who encounter difficulties in finding and maintaining a decent job (Dev & Venkatanarayana, 2011). However, as they mature, they are either able to get an appropriate job through acquiring skills and social capital, or they can no more afford to remain jobless and gets into whatever work is available. This brings down post-youth unemployment rates in most economies. However, the period of unemployment faced by youth just after leaving education has severe long run implications. It is argued that this leads to deskilling, obsolescence, demotivation among the youth and often puts them in a low-productive low-paying job for the lifetime (von Wachter et al, 2009; Kahn, 2010). This has considerable social and macroeconomic costs as well and estimates suggest that economic loss from youth unemployment in Europe is about 1.2% of GDP (Tse et al, 2013). In addition, youth bring in considerable amount of new ideas and creativity to the workplace and excluding them from the labour market means lost opportunities for innovation (Tse et al, 2013; Kahn, 2010).

Against this background, several studies have tried to analyse the youth employment/unemployment situation in India. Perhaps the foremost warning came from KN Raj when he commented that "India's future lay in the quality of jobs generated for its youth" (Raj, 1959). In recent times, the most comprehensive study has been that of Sharma (2022) where the employment/unemployment situation among youth disaggregated across gender and states and the link between education, skill, employment status, industry and occupation has been analysed. Notable among the others are Visaria (1998), Chandrasekhar et al (2006), Dev & Venkatanarayana (2011), Mitra & Verick (2013), Sasikumar (2019), ILO (2021). Most of these studies (barring a few exceptions) have looked at Open Unemployment among the youth population at the Usual Principal Activity status level and have not said much about

the different other types of unemployment among youth including temporary unemployment. This paper adds value to existing literature by exploring the labour market situation among youth in India across different types of unemployment. Second, it paints a long run picture of challenges to youth employment in India starting from mid-1980s, the start of our structural change. A cohort study is used to understand the movements of youth across labour-skill categories over a period of time. Third, we examine the link between youth labour market situation and demographic processes at the regional level since the whole issue of youth employment hinges on the notion of demographic dividend as mentioned in the previous section. Fourth, we try to understand whether economic growth per se and organised sector growth in particular have any impact on youth employment situation in the states of India. Fifth, accepting the fact that women labour market characteristics in India are more complex because of social and institutional factors (brought out by several studies in the literature), we examine the situation of youth males separately to understand the economic forces at play.

III. DATA SOURCES & METHODOLOGY:

We have used data from the annual Periodic Labour Force Survey of 2018-19 of the National Sample Survey Organisation (NSSO) for understanding the current situation. This was the latest round before the pandemic struck and hence gives us the *usual* situation before the extreme shock struck the economy. For past trends we have used the Employment and Unemployment Surveys of NSSO for the 38^{th} round (1983-84), 51^{st} round (1999-2000) and 68^{th} round (2011–12). In addition reports from international & national organisations like World Bank, ILO, CSO, Mininstry of Finance, GOI have also been used.

We have considered the age group 20-29 as comprising youth in our study. This is to allow our sample to reach the age group at which they generally complete school education (12 years of formal education) in the Indian system and face the choice between entering the labour market and continuing to higher education. It is well documented that a structural break occurs at this stage of education and there is a significant difference between enrolment rates at the school level and that in higher education. Unlike most of the previous studies, labour market particulars of the youth in this paper are examined on the basis of both Usual Principal Activity (UPS) status and Current Weekly Activity (CWS) status, to account for both *permanent* and *temporary* status of the sample individuals. In addition, we have looked at the Young Males separately since the labour market activities of young females in India are fraught with several institutional, structural and social constraints.

IV. LABOUR MARKET SITUATION OF YOUTH IN INDIA: OVERVIEW

a. Labour Market Participation and Employment Status

Major markers of labour market situation are labourforce participation and employment/unemployment rates. It is observed that over the entire stretch of almost four decades (1983-2018) both LFPR and WPR for youth are declining (Fig. 1). This is composed of a marginal increase during the first two decades (1983-99) followed by a sharp decline in the current century. The decline in WPR has been sharper than that in LFPR leading to almost a threefold rise in (Open) Unemployment rate among youth over this period, rise being sharper after 2011 (Fig. 2). This broad trend is true for both males and females, and across rural and urban locations, though the drops in LFPR and WPR are sharper for females than males, and in rural areas than urban areas. Naturally, Unemployment rates have increased almost fivefold for rural youth and fourfold for young females during 1999-2018 period.

As for the composition of employment, dominant form of employment among the youth workers is Self-employment in rural areas and Regular Wage work is in urban areas (Fig. 3). The share of Self-employment is however declining for the males during the entire period while for females it is showing alternate rise and fall. Share of regular employment is found to be declining during the first two decades and increasing for the next two, both for males and females. Casual employment, as expected, is found to follow a trend just reciprocal to it – increasing for the first two decades and declining for the next two. This indicates polarisation in the labour market where the size of workforce is shrinking and the axe falls on casual workers. It is also apprehended by researchers that most of the regular employment in recent times are caused by job outsourcing and this so-called regular employment is devoid of any social security.

b. Dissecting Unemployment Trends: A Four Quadrant Study

While open unemployment using Usual Principal Status has been widely discussed, very few studies have tried to dissect the anatomy of youth unemployment. We have tried to do that using a 4-quadrant approach where youth in labourforce are divided into four groups based on their usual (UPSS) and current (CWS) activities. In order of improving status and preference, these are – Chronic Unemployment, Intermittent Employment, Irregular Employment, and Stable Employment.[1] Chronic unemployment rate for the youth (those who are unemployed according to both UPSS as well as CWS) have increased from about 4.3 per cent of labourforce to more than 16 per cent of labourforce during this period, almost entire

of this increase taking place during the 2011-18 period (Table 1). This trend is mirrored at the other end of the hierarchy, and share of stable employment which had increased marginally during the first three decades (up to 2011), showed a sharp decline post 2011. Share of Irregular employment (those who are usually employed but not currently) have declined consistently while that of Intermittent employment (those who are currently employed but usually unemployed) has increased. This again points to deteriorating labour market situation for the youth whence regular jobs are shrinking and young job-seekers are increasingly finding themselves either unemployed throughout the year or only being engaged sporadically.

V. NEET: AN EXPANDED VIEW OF NON-WORK

It is sometimes argued that Open Unemployment Rate does not reflect the true situation in a developing country. Job-seekers, faced with unemployment or experiencing that their skill set is not enough to get a job in the labour market often withdraw themselves from the labourforce. As a result Unemployment Rate may decline. However for young people, in the age group of 20-29, it is expected that they would be either engaged in education/training or working or looking for work. But in developing countries we often find young people who are neither working, nor in education/training, nor are they looking for job. They are what is termed in literature as withdrawn workers. To examine this phenomenon, it is customary now to explore the proportion of population who are *Neither in Education, Employment or Training* (NEET). For young persons, it is expected that NEET and Unemployment would be very close. Any departure of NEET from Unemployment would indicate presence of *Withdrawn Workers*, which signals long term maladies in the labour market.

We find evidence of such withdrawn workers in India since proportion of youth NEET has been almost 30 percentage points higher than open unemployment rates all throughout. While NEET proportion had declined during the first two decades, from about 37 per cent in 1983 to 32 per cent in 1999, it increased in the next two decades reaching 44 per cent in 2018. Thus almost half of the youth population are neither working nor engaged in any productive activities – what we may call *wastage of human resource*. This wasted human capital is surely creating a demographic drag in the economy rather than yielding a demographic dividend. As expected, incidence of NEET is substantially higher among females (ranging from 66 per cent in 1983 to 74 per cent in 2018). However, a churning is taking place across spatial location and while incidence of NEET was lower in rural areas for the first two decades, it is now higher in rural areas and lower in urban areas.

If we look deeper into the types of NEET, we find that share of chronic NEET (those who are not in education, employment or training both according to UPSS and CWS) had undergone a marginal decrease during 1993-99 period but increased consistently thereafter (Fig. 4). At the same time proportion of youth in stable education/training has also increased substantially during this period – more than quadrupling from around 3 per cent in 1983 to more than 13 per cent in 2018. While this is heartening, it is sometimes argued that youth in India are continuing education instead of joining employment because they have nothing else to do and opportunity cost of continuing education is very low, and may even be nil when the alternative is to remain unemployed [Jeffrey (2010) calls this 'Timepass']. A section of youth are attending education/training or working for some part of the year though such intermittent/irregular EET are also declining over time.

VI. DYNAMICS OF YOUTH LABOUR MARKET STATUS: COHORT STUDY

So far we have looked at snapshots of youth labour market situation in India at four points of time. To understand the dynamics of the situation, we have undertaken a cohort study where we have tracked the 20-29 age group persons across all the four NSS-Employment Survey/PLFS rounds. Though we had four cohorts for the original 1983 sample, 3 cohorts for the 1999 sample, and 2 cohorts for the 2011 sample, we display only the 1983 cohort (Table 2). Three things stand out from the results. First, LFPR & WPR takes a jump as the youth cross about 30 years of age but declines thereafter. Second, with age, incidence of self-employment increases, that of casual wage labour decreases while that of regular wage employment remains stable. Third, and most important, some kind of *Search Unemployment* seems to be operating in the economy among youth. While initially Unemployment rate is high for the original cohort (among 20-29 years age group), as they get older, unemployment rate comes down sharply. For example, for the original cohort of 1983, unemployment rate declined from 5.4 per cent to 0.3 per cent as they reached age 36-45 in the year 1999 and stayed around that range. This indicates that the Unemployment problem in India is basically a problem of Youth Unemployment where young men and women, on just entering the labour market, are unable to find employment. Over time, they get into some form of work as they can ill afford to remain unemployed.

VII. YOUTH EMPLOYMENT AND SKILL

Thus, a close scrutiny of the employment-unemployment situation of youth indicates towards a precarious situation, especially in the recent period. On one hand there is decline in stable

employment leading to withdrawal of young people from the labour market. On the other hand unemployment rate increased substantially which is largely responsible for huge increase in incidence of NEET among young people. It also appears that the situation improved a bit during the 1993-99 period before taking a southward turn during 1999-2011 and worsening further during 2011-18 period. The only silver lining is that the percentage of population in stable education has increased substantially during the entire study period irrespective of gender and location.

The question that arises at this point is that if share of youth in stable education is increasing substantially then why unemployment rate is increasing simultaneously. The answer to this question perhaps is the inability of our general education system to impart the required skill among the youth. We have analysed the skill pattern of youth in India using a five stage skill classification – Unskilled, Low Skilled, Semi-skilled, Skilled, and High Skilled.[2] It appears that though unskilled youth population has decreased substantially over the study period, this is mostly due to shift to low skilled group – a marginal improvement in skill level (Table 3). Share of the two highest skill levels have also increased noticeably, though their combined share is still below 20 per cent. The two bottom-most groups, Unskilled and Low Skilled, still dominate the skill profile of youth, accounting for two-third of the youth population in India. Substantial gender and locational disparity is also observed in the skill pattern (Fig. 5). This low skill profile is sometimes blamed for the poor and deteriorating employment situation among the youth in the country.

It is sometimes argued that skill training is a lifelong process and people in the labourforce should have the opportunity, access and wherewithal to improve their skill level through such training even later in life. However such opportunities are rare in the Indian context and the incentives for skill upgradation is also negligible. As a result we find that the skill profile is almost set in stone at the young age and there is not much change in the skill distribution as the cohorts move up in age (Table 4).

Another issue of concern in terms of the skill pattern is the high incidence of unemployment among the Skilled and High Skilled youth population. Though incidence of Regular Employment is also higher among these two higher skill groups, close to two-fifth of youth in these two skill groups are unemployed in 2018. This is possibly a fallout of young people continuing education in the hope to land jobs but narrowing of job opportunities and progressively increasing skill demand at the higher end of the labour market shutting them out. This again points to a mismatch between the type and quality of skill formation through

our formal education system and the type of skill set demanded in the labour market [brought out forcefully by Sharma (2022) and De et al (2022) among others].

VIII. YOUTH EMPLOYMENT AND SPATIAL PATTERN

To understand the regional/spatial pattern of youth labour market situation we have divided the states/UTs into six spatial regions – Central, Eastern, Northern, North-Eastern, Southern and Western.[2] It is observed that Southern and Western states are performing better compared to Northern, Eastern and North-eastern states. They enjoy higher percentage of workers in regular employment and significantly lower unemployment rates compared to other regions (Table 5). They are also doing better in terms of LFPR and WPR. The Centrally located states of Madhya Pradesh and Chattishgarh are doing well in terms of LFPR and WPR but are lagging behind with much lower percentage of regular employment and substantially higher unemployment rate compared to the southern and western states. In terms of skill also, the southern and western states are doing much better compared to the eastern, north-eastern and central regions (Table 6). The northern region too is ahead of these three regions in terms of skill pattern. Similar trend is observed when we consider only youth males.

IX. YOUTH LABOUR MARKET SITUATION AND DEMOGRAPHIC DIVIDEND

We had started by commenting that labour market situation of youth is important because of the scope for reaping demographic dividend through increased working age population. We also mentioned that this dividend is not guaranteed and it may well happen that countries/regions with youth bulge are unable to utilise this increased working age population productively. Are the spatial differences across the states of India noted above have some overlap with demographic pattern as well? To explore this issue, we have grouped 22 major states of the country into three demographic groups based on Youth Population growth rates in the state. It is found that the youth are exhibiting better employment parameters in regions with moderate youth population growth rate compared to that of high and low youth population growth rate states. The moderate regions are having higher LFPR, higher WPR, substantially lower Unemployment rates, higher percentage of workers in regular employment, and lower incidence of NEET compared to the other two demographic regions. It is quite possible that the low and high youth population growth rate regions are exhibiting similar kind of behaviour in the labour market because of different sets of reasons, but exploring that is beyond the scope of this study.

X. EXPLORING FACTORS DETERMINING YOUTH LABOUR MARKET SITUATION IN INDIA: A REGIONAL ANALYSIS

We have already witnessed that skill pattern, unemployment rate and employment types are different across states of India both along regional and demographic lines. This difference across regions in Unemployment Rates, especially youth unemployment is a matter of grave concern. Unemployed youth, dissatisfied and frustrated with lack of earning opportunities, when concentrated in specific regions of a large and diverse country like India, is a sure recipe for lawlessness and factionalism. Indeed, large scale violence witnessed in parts of Bihar and Uttar Pradesh, the two most populous and high youth unemployment states of the country, in recent times over the employment policies of Railways and Army bear testimony to that. To bring down unemployment rates in specific regions, we must try to identify factors that affect regional unemployment rates. What are such likely factors? In literature there are references to factors like economic base and structure of a region (Brewer, 1985), economic growth & crisis (Banerji, 2014; Eichhorst et al., 2015; O'Higgins, 2001), industrial diversity (Taylor and Bradley, 1983; Simon, 1988; Neumann and Topel, 1991; Malizia and Ke, 1993), productivity of the major sector (Lakdawala, 1977), and, skill of youth (Coenjaerts et al., 2009). In this study, we hypothesise that the likely factors working at the state level are – aggregate economic performance of the state (NSDP growth), degree of industrialisation (growth in factory sector employment), Inflow of Industrial Capital (Amount of New Industrial Investment per capita), economic structure (share of major sectors in the GSDP), Public Expenditure, and Skill of the Labourforce. The functional form assumed is:

$$UR = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + U$$

where, UR = Unemployment Rate; X1 = PCNSDP Growth 2011-18, X2 = Factory Worker Growth 2011-18, X3 = Amount of New Investment 2011-18 (per capita), X4 = Share of Agriculture in State's GVA, X5 = Share of Registered Manufacturing in State's GVA, X6 = Share of Trade & Hotels in State's GVA, X7 = Share of Public Administration in State's GVA, X8 = Public Expenditure as % of GSDP, X9 = Skill Index of Labourforce, X10 = Squared Skill Index of Labourforce.

It is expected that economic growth, industrialisation, capital inflow, higher share of registered manufacturing, trade and public administration in SDP will have a negative effect on Unemployment rate, bringing it down. On other hand, high share of agriculture in SDP is expected to raise Unemployment rate. Skill may have dual impact – while initially increase in skill may lower unemployment, it may again rise at higher skill levels as already observed in

earlier sections. To account for that we have included both Skill Index and Square of Skill Index as explanatory variables. We have run the regression for All population and Males separately.

Results indicate that in a model with all the variables, only Factory worker growth, Amount of New Investment, Share of Registered Manufacturing in SDP, and Public Expenditure have negative coefficients, indicating that these are instrumental in bringing down Unemployment rate (Table 7). On contrary, PCNSDP growth has a positive coefficient indicating that unemployment is higher in fast growing regions. Share of Agriculture in SDP, share of Trade & Hotels in SDP, and share of Public Administration in SDP have positive coefficients, implying that a regional economy biased towards these sectors also have higher unemployment rate. As expected, Skill Index have a negative coefficient while its square have a positive coefficient, indicating that rise in skill level of workforce brings down Unemployment rate initially but at higher levels of skill index unemployment rate again increases. The results are similar for both the full population and males.

When we trim our variables using the Backward Elimination method, we are left with only variables showing significant coefficients. It is seen that for the full population these are – PCNSDP growth, Factory Worker growth, Amount of New Investment, share of Trade & Hotels in SDP, share of Public Administration in SDP, and Skill Index. For the males, share of Public Administration does not appear as a significant variable.

It thus appears that the best way to bring down Unemployment Rate is to expand factory employment and bring in more industrial investment. On other hand, macroeconomic growth that relies on the tertiary sectors like Trade & Hotels and Public Administration are likely to push up Unemployment rates either because these sectors are not the drivers of labour market but are consequences of a high unemployment regime or because these sectors are not as much labour intensive are they are popularly believed to be (for related issues see Mukherjee and Majumder, 2008; and Pattanaik & Nayak, 2011).

XI. REGIONAL CONVERGENCE/DIVERGENCE

One issue of related interest is regional convergence/divergence in Unemployment among youth. In a neo-liberal economic setting with large magnitude of footloose workers, large differences in unemployment rates between regions are not expected to persist for long. Workers from high unemployment regions are expected to migrate to places with low unemployment, resulting in convergence in unemployment across regions. The same impact may result from investment moving to regions where unemployment is high and hence inter

alia wage rates are lower. While this is a working hypothesis, the empirics are not always supportive of such 'equalisation theory'. Often regions show no signs of convergence because of several factors like 'cumulative causation' (a la Kaldor, 1978) and accompanying agglomeration of economic activities, selective migration, concentration of investment in already developed areas because of existing good infrastructure, regional disparity in public expenditure, mismatch between skills of surplus workers in high unemployment region and skills required from workers in high labour demand or low unemployment regions (Jackman and Roper, 1987), skill-intensive migration in which relatively skilled workers migrate out leaving a mass of unemployeds back home, which in turn may lead to fall in aggregate demand and hence lower production and employment in the source regions (Taylor, 1996). We examine the Indian evidence over the last decade in this regard.

Convergence/Divergence is examined in literature using sigma-convergence, unconditional beta-convergence, and conditional beta-convergence. In the first method, trends in variation in Unemployment Rates across regions are examined (generally using the Coefficient of Variation). Convergence is said to happen if this variation declines. In the second method, Change in unemployment rate over a period of time is regressed on initial period's unemployment rate. A negative beta coefficient would indicate that regions with higher initial unemployment rates have witnessed slower change in unemployment rate, while those with low initial rate are witnessing a sharper change. Hence regions are coming closer to each other and convergence is happening. A positive beta coefficient would indicate divergence. However, unconditional beta convergence is less frequent because of the effect of several other instrumental variables as mentioned earlier. To account for that, in the third method, some such variables are included in the regression of Change in Unemployment Rate on Initial Unemployment Rate. The interpretation of the sign of the beta coefficient is as before. We have used all the three methods here with 2011-12 as the initial period and 2018-19 as the terminal period.

Sigma convergence is indicated as the CV in Unemployment Rates across 20 major states have declined from 0.62 to 0.37. For males, this change is from 0.48 to 0.28.

Results also indicate unconditional beta convergence as the coefficient of Initial Unemployment is significantly negative in both cases (Table 8).

To check for conditional beta-convergence, we have used the following instrumental variables – LFPR; Skill Index of Working Age population; Base year PCNSDP; Amount of New Industrial Investment during 2011-18; sectoral shares of Agriculture, Registered Manufacturing, Trade & Hotels, and Public Administration in SDP; and Public Expenditure.

It is observed that for both the full set of variables and the parsimonious model with backward elimination method, the beta coefficient of the initial Unemployment Rate is negative – indicating conditional beta-convergence. Among the instrumental variables, inflow of new industrial capital is leading to convergence while increased share of Trade & Hotels is leading to divergence.

XII. SUMMARY

It therefore transpires that the labour market situation is far from rosy for the youth in India. While there is a historic trend of declining LFPR and WPR, mainly caused by increased participation in education, the trend has accelerated in recent times and that too with an increasing Unemployment Rate. About half of the youth population are neither working nor engaged in any productive activities – what we may call wastage of human resource. This wasted human capital is surely creating a demographic drag in the economy rather than yielding a demographic dividend. While unemployment is high among unskilled youth, it is also remarkably high among skilled and highly skilled youth population, raising questions about the employability of our young graduates on one hand and underlining the labour-replacing nature of current economic growth pattern on the other. Cohort studies indicate that with age, a part of the labourforce get into regular jobs while another part take up whatsoever work they can find. However, the skill level hardly improves once they leave the youth bracket, highlighting the dearth of lifelong skilling opportunities and incentives. Regional analysis reveals that labour market situation is relatively better in the Southern and Western states and states with moderate youth population growth rates. States at early stages of demographic transition (where growth of youth population is relatively high) and those at advanced stage of demographic transition (where growth rate of youth population is low) have lower LFPR, WPR and higher Unemployment rates. Econometric exercise shows that Industrialisation is still the best bet to solve the unemployment conundrum.

Notes

1 The divisions are as follows: Chronic Unemployment – those who are unemployed by both UPSS and CWS i.e. those without work throughout the year; Irregular Employment – those who are employed in UPSS but unemployed by CWS; Intermittent Employment – those who are currently working but are usually unemployed; Stable Employment - those who are employed both at UPSS and CWS (see Majumder, 2023 for details on this).

2 Skill groups are prepared using General, Vocational and Technical Educational status of individuals. For details see De et al (2022).

3 The spatial regions are as follows: Central – Chhattisgarh, Madhya Pr; Eastern – Bihar, Jharkhand, Odisha, West Bengal; Northern – Jammu & Kashmir, Himachal Pr, Punjab, Chandigarh, Uttarakhand, Haryana, Delhi, Uttar Pr; North Eastern – Sikkim, Arunachal Pr, Nagaland, Manipur, Mizoram, Tripura, Meghalaya,

Assam; Southern – Telengana, Andhra Pr, Karnataka, Tamil Nadu, Kerala, Lakhsadweep, A&N Islands, Puducherry; Western – Maharashtra, Gujarat, Rajasthan, Goa, Daman, Diu, Dadra & N Haveli

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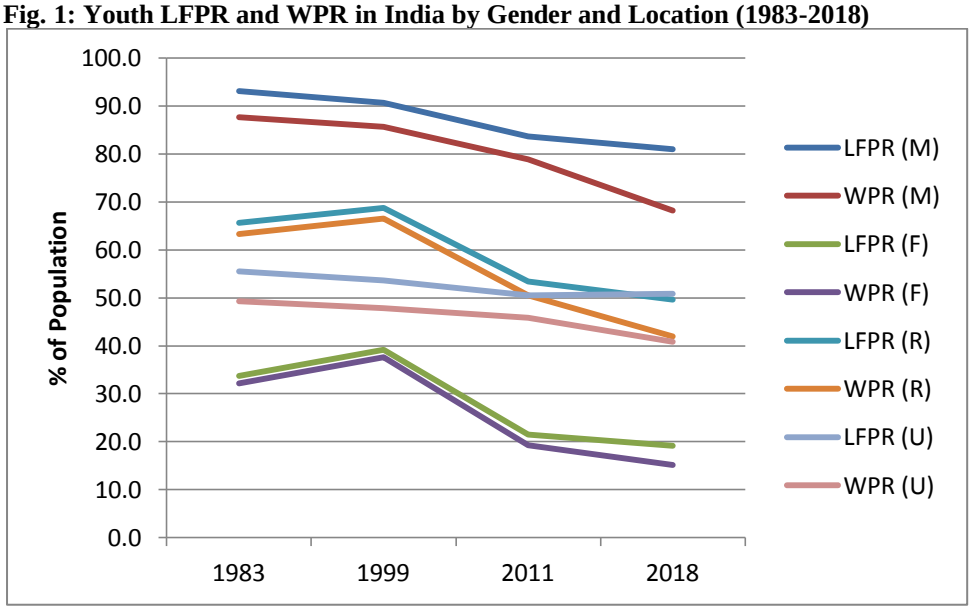
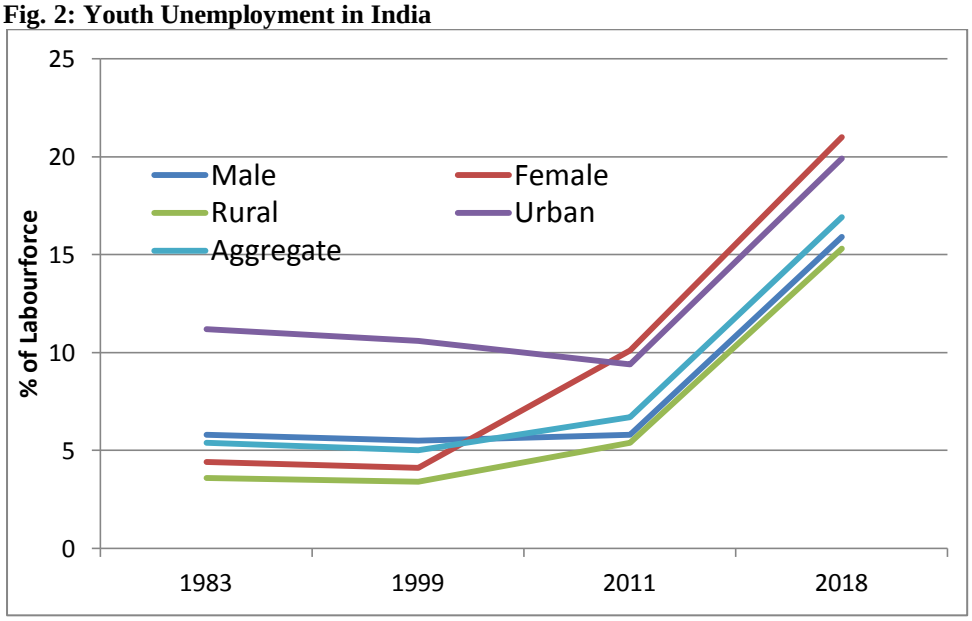
Fig. 1: Youth LFPR and WPR in India by Gender and Location (1983-2018)



Source: Authors' Calculations based on NSSO (1983, 1999, 2011, 2019)

Fig. 2: Youth Unemployment in India



Source: Authors' Calculations based on NSSO (1983, 1999, 2011, 2019)

Fig. 3: Youth Employment in India by Type

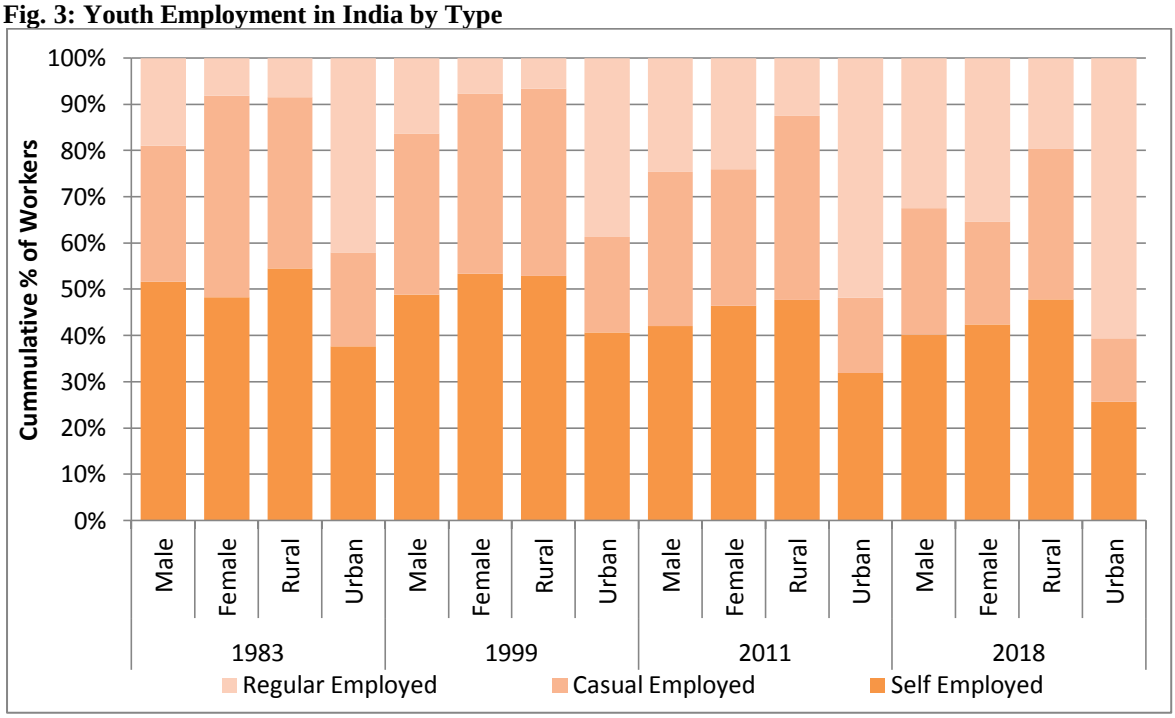


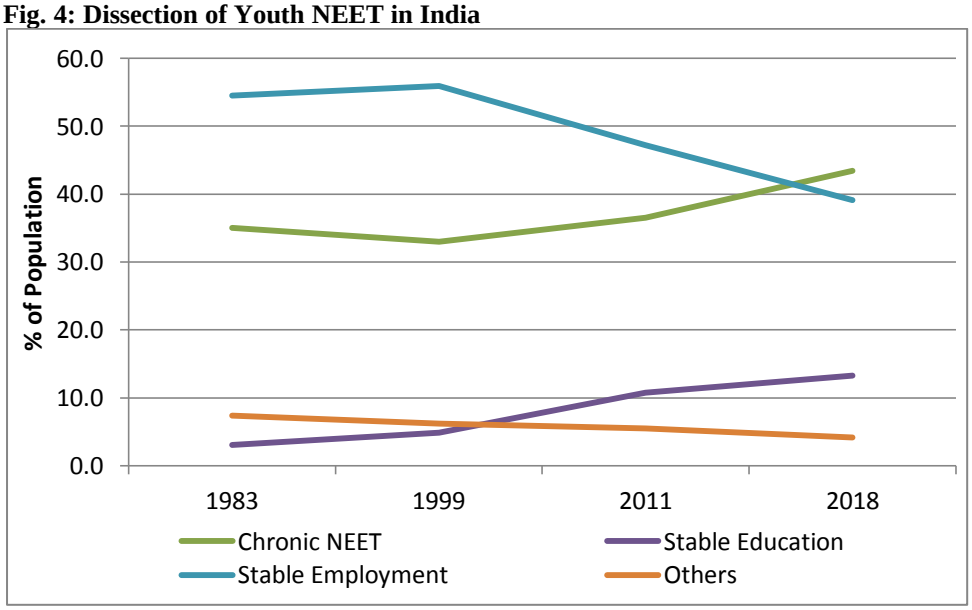
Table 1

Four Quadrant Activity Status of Youth Labourforce in India

Status	*1983*	*1999*	*2011*	*2018*
Chronic Unemployment	4.6	5.1	6.1	16.5
Intermittent Employment	0.9	0.1	0.5	3.1
Irregular Employment	2.4	2.7	1.4	0.4
Stable Employment	92.1	92.1	91.9	80.0

Source: Authors' Calculations based on NSSO (1983, 1999, 2011, 2019)

Fig. 4: Dissection of Youth NEET in India



Source: Same as Table 1

Table 2

Progression of Youth Cohorts in India (UPSS)

	1983 Youth Cohort in the year			
Indicators	***1983***	***1999***	***2011***	***2018***
LFPR	62.9	75.0	62.7	48.8
WPR	59.3	74.8	62.5	48.5
Unemployment Rate	5.4	0.3	0.4	0.6
NEET	36.7	25.2	37.5	51.5
Self Employment	50.5	51.1	53.8	63.0
Casual Employment	33.4	31.7	27.4	21.0
Regular Employment	16.1	17.2	18.8	16.0

Source: Same as Table 1

Note: LFPR, WPR and NEET are as proportion of Population; Unemployment Rate as proportion of Labourforce; Others as proportion of Workers

Table 3

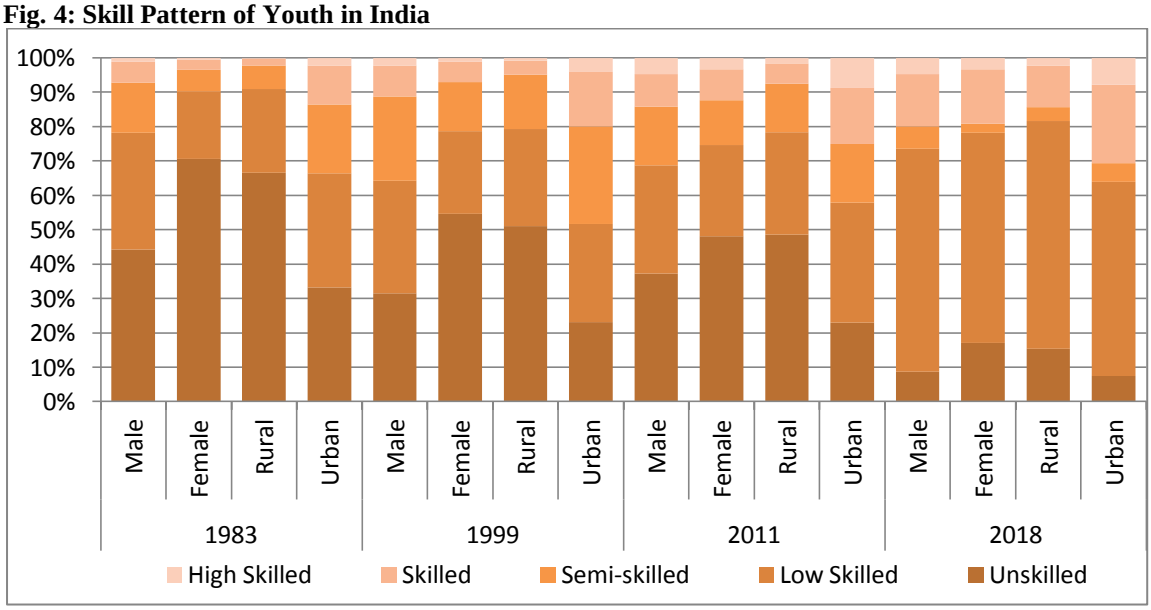
Skill Pattern of Youth in India

Skill categories	***1983***	***1999***	***2011***	***2018***
Unskilled	57.6	43.3	41.2	12.9
Low Skilled	26.7	28.3	30.6	53.0
Semi-skilled	10.4	19.3	15.0	14.5
Skilled	4.5	7.4	9.2	15.6
High Skilled	0.8	1.7	4.0	4.0

Source: Same as Table 1

Note: Categories as proportion of Population

Fig. 4: Skill Pattern of Youth in India



Source: Same as Table 1

Table 4

Skill Progression of Youth Cohorts in India

Skill Category	*1983 Youth Cohort in the year*			
	1983	***1999***	***2011***	***2018***
Unskilled	57.6	59.3	55.0	53.9
Low Skilled	26.7	22.3	26.0	37.5
Semi-skilled	10.4	11.2	11.9	1.8
Skilled	4.5	6.0	5.4	5.3
High Skilled	0.8	1.3	1.6	1.5

Source & Note: Same as Table 3

Table 5

Labour Market Indicators of Youth in India by Spatial Regions

Indicators	*Central*	*East*	*North*	*N-East*	*South*	*West*	*Aggregate*
LFPR	55.1	45.6	44.9	46.8	56.8	52.7	50.0
WPR	49.8	37.6	37.0	36.5	44.7	45.8	41.6
Unemployment Rate	9.8	17.6	17.6	22.0	21.3	13.2	16.9
Self Employment	51.9	43.0	44.8	46.8	27.3	41.1	40.6
Casual Employment	31.1	36.1	22.6	21.0	27.4	20.0	26.4
Regular Employment	17.0	20.9	32.6	32.2	45.3	38.9	33.0

Source & Note: Same as Table 1

Table 6

Skill Pattern of Youth in India by Spatial Regions

	Central	*East*	*North*	*N-East*	*South*	*West*	*Aggregate*
Unskilled	14.0	19.6	13.4	10.8	7.0	10.9	12.9
Low Skilled	68.3	65.6	59.8	74.9	59.7	63.4	63.0
Semi-skilled	5.3	3.4	3.9	2.0	5.5	5.3	4.5
Skilled	10.0	9.7	19.9	11.7	19.3	16.1	15.6
High Skilled	2.4	1.8	3.0	0.6	8.6	4.3	4.0

Source & Note: Same as Table 3

Table 7

Determinants of Youth Unemployment Rate in India – 2018

	Full Model		***Backward Elimination Best Fit Model[@]***	
Indicators	***All***	***Male***	***All***	***Male***
PCNSDP Growth 2011-18	1.099 (0.14)	0.951 (0.17)	1.138 (0.08)	0.612 (0.14)
Factory Worker Growth 2011-18	-0.828 (0.10)	-0.314 (0.47)	-0.736** (0.01)	
Amount of New Investment 2011-18 (per capita)	-0.007* (0.04)	-0.007* (0.03)	-0.006** (0.01)	-0.006** (0.01)
Share of Agriculture in State's GVA	0.123 (0.43)	0.046 (0.75)	0.072 (0.10)	
Share of Registered Manufacturing in State's GVA	0.177 (0.54)	0.231 (0.40)		
Share of Trade & Hotels in State's GVA	0.590* (0.02)	0.516* (0.02)	0.622** (0.01)	0.446** (0.01)
Share of Public Administration in State's GVA	0.464 (0.22)	0.193 (0.58)	0.486* (0.04)	
Public Expenditure as % of GSDP	-0.024 (0.88)	-0.020 (0.90)		
Skill Index of Labourforce	-3.684 (0.66)	0.644 (0.94)	-0.001 (0.10)	
(Squared) Skill Index	0.050 (0.62)	-0.009 (0.92)	0.007** (0.01)	
Adjusted R squared	0.729	0.480	0.778	0.653
F-stat	6.102** (0.01)	2.751* (0.07)	10.486** (0.01)	12.894** 0.01)

Source: Authors' calculation based on datasources mentioned in text.

Note: Figures in parenthesis are p-values. ** and * denote significant at 1% and 5% levels respectively; @ - Model with maximum Adjusted R square.

Table 8

Regional Convergence in Youth Unemployment Rate in India – 2011-18

	Unconditional Beta Convergence		***Conditional Beta Convergence***		***Conditional Beta Convergence (Backward Elimination)@***	
Indicators	***All***	***Male***	***All***	***Male***	***All***	***Male***
Initial Unemployment Rate 2011	-0.256	-0.634	-0.657* (0.05)	-0.876** (0.01)	-0.630** (0.01)	-0.881** (0.01)
LFPR			0.204 (0.49)	0.201 (0.38)		0.108 (0.34)
Skill Index of Working Age population			65.650 (0.41)	16.744 (0.76)	47.442* (0.05)	
PCNSDP 2011			-2.104 (0.78)	-2.594 (0.65)		
Amount of New Investment 2011-18 (per capita)			-0.004 (0.17)	-0.005* (0.03)	-0.004** (0.01)	-0.005** (0.01)
Share of Agriculture in State's GVA			0.028 (0.88)	0.019 (0.90)		
Share of Registered Manufacturing in State's GVA			-0.062 (0.84)	0.119 (0.62)		
Share of Trade & Hotels in State's GVA			0.652* (0.05)	0.586* (0.03)	0.497** (0.01)	0.527** (0.01)
Share of Public Administration in State's GVA			0.204 (0.70)	0.157 (0.68)		
Public Expenditure as % of GSDP			0.022 (0.95)	-0.032 (0.89)		
Adjusted R squared	0.116	0.249	0.255	0.495	0.503	0.670
F-stat	2.749 (0.11)	8.306** (0.01)	1.649 (0.23)	2.862* (0.05)	5.812* (0.05)	10.638** (0.01)

Source & Note: Same as Table 7.