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DID SKILL DEVELOPMENT POLICIES PROMOTE PARTICIPATION IN AND BENEFITS FROM SKILL EDUCATION? EVIDENCE FROM A NATION-WIDE SURVEY

Andrea Vincent* and D Rajasekhar**

Abstract

There is considerable emphasis on skill development among youth, including revamping the formal Vocational Education and Training (VET) institutions in the policies of the Indian government. Did these policies promote participation in and benefits from skill education? This question is analysed in this paper with the help of nationwide data from the Periodic Labour Force Survey from the National Sample Survey Organization (NSSO) for the year 2017-2018. The paper finds that even after numerous government policy initiatives, the participation in formal VET in India is around 2% of the population and the labour market outcomes continue to be poor. The paper first discusses the policy interventions of the Government of India in the last two decades to strengthen Vocational Education and Training programmes in the country. An overview of the status of VET in India is then provided in terms of gender-wise participation as well as by type and duration of training. This paper also explores the labour market outcomes of the vocationally trained in terms of workforce participation rate and wages earned. The paper provides some policy suggestions in the concluding section.

Keywords: Vocational education and training, labour market outcomes, unemployment rate, labour force participation rate, India

Introduction

Did skill development policies improve participation in and lead to benefits from skill education? This question becomes important because skill education is expected to play key role in improving employability among youth and promoting social inclusion by empowering socially and economically disadvantaged groups, thereby leading to economic growth and poverty reduction.The skill development policy becomes important in the context of the Sustainable Development Goals, which call upon governments to substantially increase the number of youth and adults having relevant skills, including technical and vocational skills for employment, decent jobs and entrepreneurship by 2030.

Skills to youth also become important in the context of demographic dividend, which India is poised to experience for the next few decades, due to an increase in the proportion of young and working age groups in the total population. Such a rise in the youth population is a window of opportunity as it reduces the ratio of dependents to total workers, leading to higher rates of savings, investment and growth. This change in the age structure, if properly utilised, will result in a demographic dividend, which provides immense growth opportunities to the nation. The provision of employable skills to youth remains an important challenge on the path to reap opportunities of the demographic dividend.

Despite such a window of opportunity, the importance given to skill education in India was low until 2009 as compared to the other countries. Ever since India gained independence, skill development was largely offered through Industrial Training Institutions (ITIs). The investment in Vocational

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Education and Training (VET) in India was inadequate when compared to the other developed and developing countries (Tilak 2003, World Bank 2008 and ILO 2003) and VET was neglected by the government (Singh 2001 and Gupta, Raman and Krisanthan 2017). Such an inadequate investment limited positive returns as it limited practical training, professional development of instructors, recruitment of qualified instructors, and overall improvement in the quality of teaching-learning process. Consequently, India faced the dual challenges of paucity of skilled workforce as well as non-employability of large sections of youth who are educated but lacking employable skills. The major challenges faced by the Indian VET system are poor aspirational value for VET courses, poor quality of training, lack of industry institute collaborations and skill mismatch and skill gaps.

Realising the importance of skill education, the Indian government formulated new skill development policies in the eleventh (2007-2012) and twelfth five-year plans (2012-2017). Interestingly, even though the outcomes of VET are unclear and sometimes rated as poor[1] (World Bank 2008 and ILO 2003), policymakers are keen on expanding VET. During the last decade, the union and state governments have prioritized skills development and made large investments to strengthen and revamp the VET ecosystem. India has witnessed several reforms to expand the VET system in terms of quantity and also new initiatives to improve the quality of training.

It is in this context that this paper discusses the outcomes of skill development policy in terms of participation in and benefits from vocational training by probing the current status of participation and labour market outcomes of VET. The paper addresses the following questions. Who participates in formal vocational training? Does participation vary by the residence (rural and urban), gender and social groups? Which educational groups participate in vocational training? What is the duration of the training, and does it vary by location and gender groups? Under the ambit of the National Skill Development Corporation/Directorate of Employment and Training and other ministries, different short-term training courses are introduced in the last few years. What is the type of training and does it vary by location and gender groups? What are the labour market outcomes of those receiving formal vocational education in terms of employment, labour-force participation rates and earnings? Is there a variation in labour market outcomes by the duration and type of training?

These questions are addressed in this paper with the help of unit-level data from the first round of Periodic Labour Force Survey (PLFS) conducted in 2017-2018. These data will help us to gauge the impact of policy on skill development. It needs to be however clarified that the impact of policy is not seen in terms of before and after due to the non-availability of comparable data. In this paper, insights that emerge on the influence of policy relating to skill development on participation and labour market outcomes are provided.

PLFS data are particularly suitable to examine these questions for the following reasons. First, there was a better coverage of skill-related information in the first round of PLFS which enables us to understand the impact of skill development policies on participation and labour market outcomes of VET. Second, for the first time, data for different categories of formal VET including full-time, part-time and

[1] The reasons are absence of industry-institute linkages for training and placement, outdated curriculum, lack of adequate infrastructural facilities, poor quality of trainers, lack of refresher and other training programs for faculty etc. These have, in turn, affected the overall quality of training.

on-job training (OJT) and also on the duration of training were collected in PLFS. Third, it becomes possible to examine labour market outcomes for the formal VET category and in making a clear distinction between categories of formal VET which include full-time school-based VET, part-time VET, and in-firm training. Fourth, these data make it possible to compare the labour market outcomes of different types of training of varied duration.

The paper is presented in four sections. The second section discusses the policy interventions of the Government of India to strengthen Vocational Education and Training programmes in the country in the last two decades. An overview of the status of VET in India is presented in the third section covering gender-wise participation as well as by type and duration of training. In the fourth section, labour market outcomes of the vocationally trained in terms of workforce participation rate and wages earned are explored. The paper provides some policy suggestions in the concluding section.

Policy Interventions of the Government of India

The renewed interest in Vocational Education and Training (VET) (2004-2009)

The opening up of the Indian economy in the 1990s led to the growth of the service sector and a decline in the growth of the manufacturing and engineering sectors, resulting in the need for skilled workers with new occupational qualifications not possessed by those training in traditional trades (British Council 2016). Consequently, qualitative and quantitative issues faced by the skill development system became the focus of India's policy agenda in the eleventh (2007-2012) and twelfth five-year plans (2012-2017). From 2004, there was a renewed interest in Vocational Education and Training programmes (Planning commission 2007: 74). Skill levels of workers were announced as an "area of concern" as there should be a substantial improvement in the quality and productivity of workforce. Investments in skill up-gradation and vocational training to the workforce were proposed as the solution to address the issue. Upgradation and updation of ITIs and strengthening of apprenticeship programmes through active participation of public and private industries in the design of curriculum as well as management were emphasized. Examples of Germany where the industry is involved in apprenticeship training and countries in South East Asia where industry involved operation of institutes were often cited. During the period 2004 to 2006, skill priorities of the nation were emphasised (Planning commission 2007: 74-75). In 2004-2005, a five-year central programme to upgrade 500 ITIs in Public Private Partnership (PPP) model was proposed. By 2005, 100 ITIs were upgraded through domestic support under the scheme "Upgradation of 500 Government owned ITIs into Centres of Excellence". The remaining 400 ITIs were upgraded through World Bank assistance. Institution Management Committee (IMC) was constituted with an industry partner in all the government ITIs covered under the scheme. At the Independence Day speech of 2006, the Prime Minister announced the plan to launch a mission on vocational education to address the issues of skill deficit. Consequently, a working group on skill development and vocational training was set up in the year 2006 for the preparation of the forthcoming eleventh plan (2007-2012). In addition, a task force on skill development was set up in December 2006 to recommend the strategies to meet the demand of skilled manpower for India's economy in the Eleventh Five Year Plan period and the suggestions of the task force were used to formulate the eleventh five-year plan (Planning commission 2007).

VET thus became a matter of national importance with skill development becoming policy priority from the eleventh plan period with the hope to realize the demographic dividend due to the younger workforce in India, when compared to China and other competing countries. This was supposed to help the country to meet its demand for a skilled workforce as well as to supply it to other countries who face population aging so as to complement their skill requirements. For the first time in the planning history of India, an entire chapter was dedicated to discussing the issues related to skill development in India. The plan launched a national skill development mission with a proposed outlay of 22800 crores (Planning commission 2008).

In the budget speech of 2007-2008, upgradation of the remaining 1396 ITIs into centres of excellence was proposed through the PPP Model (Planning commission 2007: 9-10). Accordingly, a scheme with a total outlay of Rs 3665 crore was framed. Interest free loan of Rs 2.5 crore was released directly to the IMC of 1227 Government ITIs which was covered under this project.

Skill development initiative – modular employability scheme was launched in the year 2008 to skill school dropouts and existing workers in the informal sector. The scheme was launched in consultation with industry as a demand-driven short term training programme with flexible delivery mechanisms (ILO 2003). The scheme also had provision for recognition of prior learning to help those who have acquired skill through the informal training system. The existing skill level of a person was tested and certified by a third-party assessment agency leading to a nationally recognised national council of vocational training (NCVT) qualification.

The policy interventions during the period 2009 to 2019

It was however criticised that VET has largely remained government funded and a supply-driven system in India. Poor institutional design for VET is an important problem, and vocational training institutes have been disconnected from industry (World Bank 2008 and ILO 2003). Many recent initiatives to revamp the formal vocational training system have been centered on evolving and promoting mechanisms for industry participation in training programmes. To ensure that the private sector participates in skill training, and to deepen their involvement in skill development programmes, the following initiatives have been taken.

The first national skill development policy was launched in 2009 with the ambitious target of increasing the proportion of skilled workforce from 2% to 50% by 2022 (King 2012) with a target of skilling 500 million people. The policy laid the initial framework for the programmes of skill development in the country. However, in 2011-2012 only 2.2% of the working age population have received formal vocational training. Many initiatives followed, including the formation of the National Skill Development Corporation (NSDC), the introduction of the National Skill Qualification Framework (NSQF), and, in 2015, the formation of the Ministry of Skill Development and Entrepreneurship (MSDE) – a flagship programme called Pradhan Mantri Kaushal Vikas Yojana (PMKVY) under the Skill India Campaign to coordinate all skills development initiatives nationwide.

The NSDC was established in 2008 in a public–private partnership model to partner with multiple stakeholders and to mobilise resources from the private sector for skill development. Further,

the NSDC provides soft loans, grants, and equity to organisations to build profitable training programmes.

Sectoral Skill Councils were formed under the NSDC in 2010 and 2011 as an industry-led and governed body to bridge the gap between demand and supply. They were formed to conduct skill-gap analysis, to develop curricula after capturing the real skill needs of sectoral employers, and to conduct assessment and certification based on employers' needs. SSCs were also entrusted to prepare National Occupational Standards (NOS) and Qualification Packs (QP) for various job roles.

NSDC launched National Skill Certification and Monetary Reward Scheme (STAR) in 2013 to train the youth who have completed 10^{th} grade in high demand job roles in NSQF levels 1 to 4. The trainees who completed training and complete assessments by authorised certification body appointed by SSC were provided with monetary rewards. The minimum stipulated duration of the programme is 30 days.

The introduction of the NSQF (2013) altered the notion that VET is a dead-end with no opportunity for higher education. The NSQF addressed this gap by providing multiple, interlinking pathways between general, technical, and vocational education and training. It has aided increased vertical mobility between and comparison of different pathways.

The National Policy on Skill Development and Entrepreneurship 2015 further strengthened the existing skill development infrastructure. The key objective of the policy is to "empower the individual, by enabling her/him to realize their full potential through a process of lifelong learning where competencies are accumulated via instruments such as credible certifications, credit accumulation and transfer, etc. As individuals grow, the society and nation also benefit from their productivity and growth." (GOI 2015: 12-13). The policy had four thrust areas 1) address the key obstacles faced by the VET system in India including poor aspiration of VET courses and lack of integration with academic education, less focus on outcome-based training, poor quality and quantity of trainers and infrastructure and lack of quality assurance framework. 2) align the demand and supply side factors of skills through active involvement of employers in curriculum design and implementation, training, apprenticeship training, and provision of gainful employment of skilled youth and leverage the use of technology to curb demand and skill mismatch. 3) promote inclusive participation of women and other socially and geographically marginalized and disadvantaged groups in skill and entrepreneurship development programmes. 4) To develop a strong entrepreneurship framework to strengthen entrepreneurship across the country. Post the launch of the National Skill Development Policy 2015, various policy interventions were undertaken to strengthen the skilling ecosystem of the country. NSDC launched its flagship programme Prime Minister Kaushal Vikas Yojana (PMKVY) in 2015. The Indian nationals who are unemployed or school/college dropouts are the beneficiaries of this short-duration training scheme. The complete training and assessment fee is paid by the Government. Training imparted under this short-term training programme is under NSQF level 5 and below. The scheme also has provisions for recognition of prior learning to assess the prior learning experience or skills.

VET was conceived as a substitute for higher education and so there were fewer linkages and pathways created between VET and higher education. This resulted in the poor take off VET in the country, as people felt it might confine them to manual jobs with little or no opportunity for higher

education (Tilak 2007). Students passing vocational courses had less defined vocational pathways to pursue vocational higher education and neither there were pathways to continue with academic education as admission criteria to general academic courses were providing openings for student's vocational streams (GOI 2020). To offer vocational education in higher educational institutions UGC initiated Bachelor of vocational education courses with options for multiple entry and exit. The establishment of National Skill Universities in 2018 by the Ministry of Skill Development and Entrepreneurship, as vocational counterparts to general education, was a step toward making skill-based education aspirational and acceptable in society.

National Career Service (NCS) was launched in 2015 by the Directorate General of Employment Ministry of Labour and Employment to bridge the gap between employers and job aspirants. It provides employment and career related services through the NCS web portal, model career centres across the country and interlinkage with states through employment exchanges. Pilz and Regel (2021), however, criticised that these comprehensive attempts to revamp the skill development system have not largely been successful, and the government has not empowered these efforts to achieve their target to skill the population from 2% in 2007 to 50% by 2022.

Status of VET in India

In this section, we will look at the status of participation in VET for the age group of 15-59 years for the year 2017-18. PLFS collected information about vocational training attended by the workforce under three categories: 1) received formal vocational training, 2) received non-formal vocational training and, 3) did not receive any vocational training. The distribution of the people by these categories is presented in Table 1.

Over 8% of the people in the age group of 15-59 years obtained vocational training in 2017-18 (Column 10 in Table 1), with 1.98% receiving formal vocational training and 6% receiving non-formal vocational training. Nearly 98% of the workforce did not receive any vocational training. The status of VET was thus poor.

Variation in participation by rural and urban areas

It will be interesting to analyse the influence of skill development policies on participation in skill education by rural and urban areas as it is often noted in the policy documents that there is a need for the rural dwellers to find jobs in urban areas in view of falling per-capita agricultural productivity. The following variations between rural and urban areas in the participation of the workforce in vocational training are found. First, the proportion of the workforce with some form of vocational training or the other is lower in rural areas (7%) as compared to urban areas (10%). Second, the participation in formal VET is almost three times higher in urban areas as compared to that in rural areas (Columns 4 and 7 in Table 1). The lower participation in formal vocational training in rural areas is attributed to the lack of formal vocational training facilities in rural areas (Kumar, Mandava, and Gopanapalli 2019). Third, the proportion of those receiving vocational training through the non-formal and hereditary channels was comparatively high in rural areas. In hereditary training, an individual obtains skills from the family

members and passes them on from one generation to another. Hereditary training is however associated with lower earnings (Ahmed and Chattopadhyay 2015).

Variation in participation by gender groups

While over 11% of men received some or the other vocational training, the corresponding proportion was only 5% among women (Columns 8 and 9 in Table 1). In rural areas, only 4% of women in the workforce received some form of vocational training mainly by self-learning, hereditary and learning on the job. In urban areas, slightly more than 6% of women obtained skill education mainly by way of formal education. The proportion of men obtaining vocational training was nearly 13% in urban areas and 11% in rural areas, and they obtained largely through formal courses, and learning on the job. Studies attributed the low female participation in vocational training to factors such as the non-availability of hostels, poor transportation facilities, limited number of trades are being offered in ITIs, gender stereotyping in training and security issues (Mathur, Sharma, and Partha 2014; ILO 2003). It appears that policy changes enunciated in India have not addressed these issues. It needs to be however noted that in view of possible rise in women's participation in labour market due to fertility decline and as an accelerator of demographic dividend, there is need to step up the participation of women in skill training.

Table 1: Distribution (in %) of the workforce by the status of receipt of vocational training, location and gender

Status of vocational training	Rural			Urban			Rural + Urban		
	Male	Female	All	Male	Female	All	Male	Female	All
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VET Not received	89.5	95.9	92.6	86.7	93.7	90.2	88.6	95.2	91.9
Received non-formal VET/hereditary	3.0	0.9	1.9	1.2	0.4	0.8	2.4	0.7	1.6
Received non-formal VET/self-learning	2.6	1.2	1.9	2.3	1.0	1.7	2.5	1.1	1.8
Received non-formal VET/learning on the job	3.1	0.7	1.9	5.0	1.0	3.0	3.6	0.8	2.2
Received non-formal VET/others	0.4	0.4	0.4	0.8	0.6	0.7	0.5	0.5	0.5
Received formal VET	1.5	0.9	1.2	4.1	3.3	3.7	2.3	1.7	2.0
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
N	**81,757**	**80,499**	**200,637**	**64,285**	**62,795**	**88,700**	**145,966**	**143,371**	**289,337**

Source: For this and the following tables, the source is computations by authors based on PLFS first round data (2017- 2018)

Variation in participation by social groups

The participation in non- formal VET programmes is found to be high among lower social groups of SC and ST as compared to those belonging to general category. The participation in the formal VET was found to be relatively high among those belonging to general category (2.5%) and OBC (1.9%).

Table 2: Distribution (in %) of the workforce by the status of receipt of vocational training and social groups

Status of vocational training	General	OBC	SC	ST	Total
VET Not received	91.97	92.06	91.58	91.54	91.89
Received formal VET	2.52	1.93	1.79	0.86	1.98
Received non- formal VET	5.51	6.01	6.63	7.6	6.13
Total	100	100	100	100	100 (n=289,337)

Variation in the participation by educational groups

The distribution of workers receiving vocational training by the level of education (Table 3) shows a predictable pattern; in the non-formal VET category, a large proportion of the workforce completed middle or below level of school education while over 93% of the workers who received formal vocational education had secondary and above education. The PLFS data does not however provide information on the education level before a student joins VET or the education level attained after the completion of vocational training.

Table 3: Distribution (%) of the workforce by the level of education and status of vocational training received

Level of education	No VET received	Received non-formal VET	Received formal VET
Illiterate	20.8	20.0	0.3
Literate without Schooling	0.3	0.2	0.0
Primary and below	20.7	22.1	1.7
Middle	23.4	25.4	4.6
Secondary	13.7	14.1	8.7
Higher Secondary	11.0	8.4	16.7
Diploma	0.7	0.9	20.5
Graduate and above	9.5	8.7	47.6
Total (n=289,337)	**100 (n=265,876)**	**100 (n=17,746)**	**100 (n=5,715)**

The basic problem of vocational education cited in the literature is that the students opting for vocational education at the secondary level do so as they fail to get admission to general education courses. Since they are unwilling to do manual jobs, they join for vocational courses to get admission for higher general education courses (Jain 1992). We observed from the field that students, who fail in secondary or higher secondary schooling, join vocational training to avoid a gap year in between. They write the supplementary exam while undergoing vocational training. So, they earn a certificate in the gap year and reappear for the exam they failed to clear. Many students also join higher studies after the completion of vocational training at the secondary and higher secondary levels, as they are not offered decent jobs or find suitable employment opportunities after the training. The other reason is the prescribed age limit for apprenticeship training which is 18 years and many students who complete vocational courses will be lesser than 18 years. Since they are not immediately placed for apprenticeship training, they change their track to academic education. The trainees who want to pursue a diploma or degree in technical courses have very limited opportunities to get lateral entry into those courses. All

these factors contribute for trainees to pursue general education after completing vocational courses and the vocational skills that the students learned aren't utilized as they fail to work in the fields that they are trained for.

Variations in participation by the duration of training

More than 70% of the workforce opted for courses with less than two years' duration as shown in Table 4. There is higher male participation in courses where the duration is more than 24 months. More number of males have undergone training in engineering trades which is usually 2 years of duration. The engineering trades require a minimum 10^{th} standard pass with Science and Mathematics or equivalent for admission. Mechanical engineering, automotive engineering, civil engineering and electrical and electronic engineering are highly dominated by males in terms of participation.

Table 4: Distribution (%) of the workforce by the duration of training

Duration of Training	Total	Male	Female	Rural	Urban
Less than 3 months	5.9	5.2	6.94	5.7	6.1
3 months to less than one year	37.8	30.2	48.5	36.1	39.0
12 months to less than 2 years	26.5	27.6	24.9	29.6	24.2
24 months or more	29.8	37.1	19.65	28.7	30.7
Total	**100 (n=6741)**	**100 (n=3933)**	**100 (n=2807)**	**100 (n=2874)**	**100 (n=3867)**

Female participation is high in courses where the duration is less than one year. A vast majority of females have undergone training for non-engineering trades. Female-dominated trades are apparel, textiles and crafts, which are shorter duration courses and require a pass in 8th standard. A gender difference was noted in the selection of course as well as the duration of training attended which indicates the existence of occupational segregation. While analysing the difference between rural and urban areas, we could not find much difference based on the duration of training.

Variation in participation by type of training

Nearly 72% of the workforce opted for full-time courses and less than 6% opted for on-the-job courses (Table 5). The Indian VET system has largely remained government-funded and supply-driven and the links between private enterprises and formal training systems remain weak. When compared with BRICS member countries, Indian firms offer the fewest opportunities for in-house training (Mehrotra and Ghosh 2014). A mere 16% of firms offer on-the-job training in India as compared with 85% in China and over 50% in Russia and Brazil (Mehrotra and Ghosh 2014).

Female participation is high in part-time courses whereas male participation is high in On-Job Training (OJT) and full-time courses. While analysing the difference between sectors, high participation for OJT and part-time courses in the urban sector was observed. In the rural sector, there is high participation in full-time courses.

Table 5: Distribution (%) of workforce by type of training

Type of Training	Total	Male	Female	Rural	Urban
Full time	72.6	75.7	68.4	76.1	70.1
Part time	21.6	17.4	27.5	18.5	23.9
OJT	5.8	6.9	4.2	5.4	6.0
Total	**100 (n=6741)**	**100 (n=3933)**	**100 (n=2807)**	**100 (n=2874)**	**100 (n=3867)**

Labour Market Outcomes of Formal VET Graduates

It will be interesting to analyse the influence of policy on labour market outcomes among vocationally trained and not trained. We have considered Unemployment Rate (UR), Labour Force Participation Rate (LFPR) and Daily earnings (in Rs) as indicators to see whether vocational training makes a difference. In Table 6 the data on labour market outcomes are presented by the status of the workforce in terms of vocational training.

Table 6 reveals that the UR is 6.5% for the overall population in the age group of 15-59 years. The unemployment rate (UR) is the highest (17.9%) in the formal VET category while the same is 0.9% for the non-formal VET category. Higher unemployment among those receiving formal vocational training indicates underutilization of human capital in the labour market and raises questions on the quality and the type of training offered at vocational training institutes (Agrawal and Agrawal 2017). The growth in the modern service sector requires highly educated and skilled people. Accordingly, the syllabus of vocational training should have been aligned to the emerging demands of the labour market. However, vocational training institutions are providing training even today to the vast majority of students for the jobs in the traditional trades/ courses such as engineering and manufacturing sector which are unable to absorb workers thereby leading to the poor labour market outcome in terms of unemployment.

Average daily earnings to those completing formal vocational training are close to double as compared to the overall average daily earnings in that age group. Males and females in the formal VET category obtained higher earnings as compared to those not receiving VET. The mean daily earnings earned by a male in the formal VET category is Rs 634 as compared to Rs 333 for a male in the not received category. For females, mean daily earnings earned in formal VET category are almost three times higher than for those in the not received VET category.

Table 6: Labour market outcomes – UR, LFPR and earnings of workforce by the status of receipt of vocational training and gender

Status of vocational training	UR (in %)			LFPR (in %)			Daily earnings (in Rs)		
	All	Male	Female	All	Male	Female	All	Male	Female
VET Not Received	6.8	7.1	5.8%	50.0	78.2	23.3	288	333	146
Received-non-formal VET	1.0	0.8	1.7	92.0	98.9	71.6	262	299	109
Received formal VET	17.9	16.5	21.4	69.0	83.7	48.5	581	634	445
Overall (15-59)	6.5	6.6	6	53	80.2	25.3	291	335	151

Note: UR is unemployment rate calculated based on the percentage of unemployed individuals using UPS (UPS+subsidiary status) estimates. LFPR is the labour force participation rate defined as the percentage of individuals in the labour force in the population

Labour force participation rate (LFPR) is also higher among people in the formal VET category when compared to those in the not received VET category. Formal and informal vocational training significantly improves labour force participation rate for females, but a large proportion of women who attended vocational training are still not in the workforce. This could be due to various supply-side factors like marital status, reproductive and child care, and care-giving responsibilities along with the need to undertake domestic chores of women (Sudarshan and Bhattacharya 2009). The lower labour force participation could also be due to the socio-cultural and institutional norms in the country including religion and culture. The higher social status of women was also found to negatively impact labour force participation in India (Chaudhary and Verick 2014). Other reasons cited in the literature are discriminatory practices in the labour market, which includes occupational segregation (Chaudhary and Verick 2014).

The unemployment rate is the lowest and labour force participation rate is the highest in the non-formal VET category. This could be explained in terms of the following. People with non-formal training usually have some traditional skills which are in demand in the labour market. Even though the unemployment rate is the lowest and labour force participation is the highest for non-formally trained, they usually engage in casual work and get lower earnings. Average daily earnings (in Indian Rupees) for the formal VET category are double than that for the non-formal VET category. Among females, mean daily earnings are significantly higher for the formal VET category than for the non-formal VET category. Those from the non-formal VET category do not have a certificate to back up their skills, which affects their employability and earnings.

The Unemployment rate is lowest among people who have completed courses with less than 3 months' duration and highest for people who have received vocational training for more than 24 months as shown in Table 7. When we investigated the duration of the course, a clear link between the duration of the course and earnings can be observed. Earnings are considerably high among people who completed longer duration courses. Shorter duration training programmes were found to be ineffective; they were neither providing employment with decent wage to the trainees nor meeting the skill demands of industries (GOI 2016). It needs to be, however, added here that vocational training of any duration is helpful to get better daily earnings when compared to having received no vocational training.

Table 7: Labour market outcomes by the duration of training

Duration of training	UR (in %)	LFPR (in %)	Daily earnings (in Rs)
Less than 3 months	11.6	64.5	462.3
3 months to less than one year	17.9	58.4	487.1
12 months to less than 2 years	16.9	74.1	564.6
24 months or more	19.9	78.8	706.7
All (15-59 years)	6.5	53.0	291.0

Note: Same as Table 6

Labour force participation rate is nearly 85% for OJT compared to 55% for part time courses as shown in Table 8. The unemployment rate is also lowest among OJT at 4.6% compared to above 17% for both full-time and part-time courses for those who received formal vocational training. There is

a considerable difference in the earnings, with mean earnings for OJT almost twice that of part-time vocational trainees.

Table 8: Labour market outcomes by type of training

Type of Training	UR (in %)	LFPR (in %)	Daily Earnings (in Rs)
Full time	19.3	71.9	597
Part time	17.4	55.1	410
On the job	4.6	84.6	794
All (15-59 years)	6.5	52.8	291

Note: Same as Table 6

Factors Influencing Mean Daily Wage

The study explored the determinants of daily wage for the working age group (Table 9) using OLS regression model. The general regression equation is:

$$Y = \beta 0 + \Sigma j=1..p\ \beta jXj + \varepsilon,$$

Where Y is the dependent variable, β0, is the intercept of the model, and βi's are the slope. The Xj's are the independent variables, and ε is the error term.

The equation for the data with 21 independent variables will be:

$$Y = \beta 0 + \beta 1X1 \ldots \beta 21X21 + \varepsilon$$

In the OLS regression model, Log (daily wage) is the dependent variable and the first variable list (age, gender, sector, religion, caste, status of general education, received vocational, duration of VET, and technical education) are the determinants.

Table 9, which presents the results of the regression analysis, shows that that obtaining any type of formal vocational training improves the mean daily wage in the working age group at 1% significance level. Within the formal VET, on the job training have 59% positive influence on the wage, whereas fulltime and part-time courses have 12 and 16 percentage points, respectively. When looked at the general education, each level of general education has positive influence on the wage at 1% significance level. Completing primary and middle level of education have lower (4 and 10 percentage respectively) influence on the wage when compared to any type of formal vocational training. In addition, on the job training have higher influence on the wage when compared to primary, middle, secondary and higher secondary level of education, but lower than the graduate and above level of education (69%).

Table 9: Determinants of daily wage

Variables	All
Age	0.01***
Gender male	0.6***
Sector Rural	-0.3***
Religion Islam	-0.07***
Caste	
Scheduled Tribe	-0.16***
Scheduled Caste	-0.13***
Other Backward Class	-0.08***
General Education	
Primary	0.04***
Middle	0.1***
Secondary	0.22***
Higher Secondary	0.33***
Graduate and above	0.69***
Vocational and Technical	
On the job	0.59***
Full time	0.12***
Part time	0.16***
Technical	0.87***
Duration of Formal VET	
Duration 3 months to 6 months	-0.03
Duration 18 months to 24 months	0.02
Non-Formal VET	
Hereditary	-0.04***
Learning on the job	0.15***
Self-Learning	-0.04***
_cons	4.87***
N	1,11,869
Prob > chi2	0
R-squared	0.3199
Adj R-squared	0.3198

*, **, *** indicate significance at 10, 5 and 1 percent levels.

With respect to non-formal VET, only learning on the job was found to have a positive influence on the wage. In addition, technical education has the maximum positive influence on the wage (87%) at 1% significance level.

Factors such as being male, households form urban areas, and age were found to have positive influence on labour market outcome of wages. The factors negatively influencing the wage are social group ST, SC and OBC, and religion (Islam).

Conclusions and Policy Implications

This paper examined the current status of VET in India in terms of participation and the effect of formal and non-formal VET on labour market returns of the vocationally trained in India. The key findings are the following. The participation in VET is meagre and less than 8% of those in the working age population received VET; even among them, a large proportion received non-formal VET. A disparity was found in the field of training between genders and more men underwent vocational training as compared to women. This finding indicates the need for gender mainstreaming in vocational training programmes and policies. Participation in formal VET programmes is low in rural areas when compared to urban areas. A large proportion of formally vocationally trained have undergone courses with less than 2-year duration. Furthermore, men are participating more in engineering trades that have higher duration whereas women are participating more in non-engineering trades of shorter duration which yields poor labour market outcomes. More than 70% of workforce have undergone formal vocational training and nearly 6% have undergone OJT which ensures good labour market outcomes.

A broad comparative analysis of the labour market outcomes of those receiving formal and non-formal VET with not receiving any VET revealed the following:

- People in the formal VET category obtained higher earnings as compared to the other two categories**.**
- Participation in formal vocational training improves the labour force participation rate in both genders.
- Unemployment rate in the formal VET category is much higher than the other two categories.

One of the main objectives of VET is to reduce unemployment among the youth by providing them with skill training. The result of high unemployment rate is therefore surprising as in the last decade the central and state governments have prioritised skill development and huge investments have been made to strengthen and revamp the VET system. The high unemployment rate however indicates some snag in the system. The reasons cited for high unemployment among vocationally trained are fewer industrial collaborations for apprenticeship training and placement. Poor institutional design for VET in India is highlighted in earlier studies and the main VET provider, the Industrial Training Institutes, were disconnected from industry (World Bank 2008; ILO 2003). Full time and part time formal training programmes can yield better results only through better industry institute collaborations and linkages.

The overall UR of the population was 6.1% in 2017-2018, which was an all-time high for the last 45 years. Post 2012, agriculture and allied sectors and manufacturing sector recorded a decline in jobs while services sustained the growth in jobs (Mehrotra and Parida 2021). Labour-intensive sub-sectors in manufacturing, which employ vocationally trained youth, such as textiles, jewellery, furniture and wood products, rubber and rubber products, paper and paper products etc., recorded a decline in jobs. Capital-intensive subsectors like machinery, electrical and electronics and motor vehicles recorded growth in employment. These sectors require skilled and trained workers but their share in total employment is low. Non-manufacturing sectors, mostly construction, recorded a fall in jobs. The slowdown in manufacturing and the engineering sectors affected the employment prospectus of

vocationally trained. VET institutions were established to cater to the needs of engineering and manufacturing industries. In 2017-2018, modern services contributed to the overall growth of employment in the service sector. The growth in the modern service sector requires highly educated and skilled people but the vocational training is not aligned to the needs of the labour market. VET institutions are largely skilling the youth for manufacturing and engineering sectors. To ensure better labour market outcomes for vocationally trained, employment opportunities should be created in the manufacturing and modern services sectors. The modern service sector, which contributed to the overall growth of employment, needs highly educated and skilled people (Mehrotra and Parida 2021). However, studies have highlighted the poor quality of vocational trainees in terms of poor academic performance and poor quantitative and soft skills (Tara and Kumar 2017). Students who join ITIs are from poor socio-economic backgrounds (Mathur, Sharma and Partha 2014) and with poor academic performance (Ajithkumar and Pilz 2019). The training outcome of VET is poor as trainees demonstrate poor English language skills, as well as cognitive, communication and quantitative skills, which they would have acquired through general education at the school level (Singh, Parida and Pattayat 2020). The quality of the training offered in the vocational training institutes has faced considerable criticism in the past (Tara, Kumar and Pilz 2016) and so any efforts to improve the quality of training will be rewarded with better labour market outcomes of the trainees. Reforms to ensure a better quality of schooling and programmes to improve the quality of training of VET programmes are unavoidable.

The National education policy (2020) elaborately speaks about reimagining vocational education in the country. NEP aims to provide high quality universal access to holistic education including vocational education opportunities to all the children in the country, especially for those belonging to socio-economically disadvantaged groups. It also aims to eliminate hierarchies in education that exist between arts and sciences and between vocational and academic streams. According to an estimate, only less than 5 percent of the Indian workforce in the age group of 19-24 years has undergone formal vocational training whereas it was 52% in the USA, 75% in Germany, and 96% in South Korea. Against this background, NEP proposes reimagining the VET space in India. In order to spread vocational education, the following steps are suggested. In view of the stringent eligibility criteria of a pass in 10th grade for joining most of the vocational courses contributing to the low participation in VET, it is recommended that most of the courses are to be offered at the secondary and higher secondary levels. The other reason attributed is the lack of vertical mobility for those who complete vocational education and training. There were fewer pathways developed to pursue academic higher education as well as further vocational education which is currently being addressed through the announcement of the National Skill Qualification Framework (NSQF) in 2013. NSQF should be detailed for all disciplines, professions and vocations and to be aligned with international standards. Recognition of prior learning (RPL) is to be made an essential component of NSQF. The perception that VET is inferior to general education as the former is meant only for the students who are academically weak is also contributing to low participation. In order to address the social hierarchy issues associated with VET, integration of vocational education to academic education at all levels is suggested. At the middle and secondary levels of education, exposure to VET is suggested through fun courses and internship opportunities with local artisans as this will help the children to understand the importance of dignity of

labour and get a hands-on experience on vocations involving Indian arts and craftsmanship. NEP 2020, suggested vocational education is to be included in the educational offerings at the secondary and higher education levels. Vocational and academic education must go hand in hand with the development of "academic and other capacities". Higher education institutions can collaborate with NGOs, industries and other skill training institutes to provide vocational education. Focus areas of skill training are to be decided based on skill gap analysis and mapping in the local industries. NEP also recommended the setting up of the National Committee for the Integration of Vocational Education (NCIVE) to oversee the efforts. Furthermore, NEP recommends the implementation of new national curriculum framework for teacher education including vocational education.

This paper finds that formal OJT yields better earnings than either full-time or part-time VET. UR is less than 5% for OJT, whereas for both formal and part-time training it is nearly 18%. LFPR is also high among people who have received OJT. People who received OJT for the duration of three months to one year earned better earnings than people who received formal and part time training for more than 24 months. Provision of general education to the workforce followed by OJT seems to ensure better labour market outcomes in terms of earnings, labour force participation and employment.

A large proportion of vocationally trained received the same through non-formal means. The unemployment rate is the lowest for those in the non-formal VET category, but they earn less. Non formal skill education such as learning on the job influences wages positively whereas all the other types of non-formal vocational training has negative influence on wage. A vast majority of workers in the unorganized sector are non-formally trained (Mehrotra 2014). They are highly skilled in artisanal skills and craft but lack formal certification. Skill India programme has undertaken recognition of prior learning to address the issue of lack of certification for the skills acquired outside a formal setup, and this is a good policy measure. Programmes like recognition of prior learning should be promoted along with the creation of suitable employment opportunities for the certified people. For entry into the formal VET system, most of the courses require at least 10 years of general education. Students who want to pursue vocational courses at the secondary or higher secondary level as well as in ITIs need to invest at least two years to get certified. The opportunity cost of not having income for two years along with financial expenses to undergo the training restricts many to enrol for formal training. Shorter duration certificate programmes with multiple entries and exits can be arranged to improve the labour market outcomes of the non-formally trained category.

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