BENEFIT-COST ANALYSIS

SKILLS

Analysis of skill development interventions in RAJASTHAN

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Cost-Benefit Analysis of Skill Development Interventions in Rajasthan

Rajasthan Priorities
An India Consensus Prioritization Project

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Academic Abstract

The paper uses earnings data from the Fifth Annual Employment -Unemployment Survey (2015-16), government specific reports and annual budgets, along with existing studies to conduct a cost-benefit analysis of three skill-related interventions: Vocational Training, Apprenticeship and Support to SMEs. At a 5% social discount rate, the benefit-cost ratio of vocational training is around 4, as against 5 for apprenticeship and 6 for support to SMEs. Given the lack of basic skilling indicators in India, these results are based on a series of assumptions regarding the structure of skilling costs and benefits in the country.

Policy Abstract

The Problem

As the youngest major country in the world India presently has just 2.3% of her workforce with some kind of formal skills training. According to government's skill gap analysis report, approximately 119 million skilled workers will be needed in the 24 key sectors of the economy by 2022. For the next two decades, over 12 million youth are expected to enter India's labor force. In order for India to cash in on its demographic dividend, its needs to create more jobs and educate, train and impart skills to the youth on priority.

According to National Skill Development Corporation (NSDC) estimates of 2012, Rajasthan had a huge need for skill development. By 2022, it is expected that the state will have a workforce of around 480 lakh with around 98 percent of that to be either fully or partially un-skilled. This stands unfavorably when the manpower demand is taken into consideration—by 2022, the state will need about 11 percent of the total labour demanded to be fully skilled. Needless to say, the state is to have an excess of minimally skilled manpower and a deficit in skilled manpower by 2022 (National Skill Development Corporation, 2012).

Rajasthan was one of the first states in the country to set up a Skill Mission, the Rajasthan Mission on Livelihoods, in 2004. The Rajasthan Skills and Livelihoods Corporation is executing various schemes and programmes including Employment Linked Skill Training Programme (ELSTP) to provide training to unemployed youth, Regular Skill Training Programme (RSTP) for the purpose of short term skill training and hand holding for self-employment and self enhancement, Pandit Deen Dayal Upadhyay Grameen Kaushalya Yojana (DDU-GKY), a centrally sponsored scheme for training the youth in various high-growth economic sectors, Skill Development Initiative Scheme (SDIS) which include various wage employment oriented training programmes and Special Projects which are being conducted in collaboration with various institutions for the purpose of enhancing the quality of training (VasundharaRaje.in, n.d.). In the year 2015 and 2016, RSLDC managed to set up 300 new skill development centers in private public partnership (PPP) model, with a capacity to train 22,000 (National Skills Network, 2016). Between 2014 and 2017, the Department of Skills, Employment and Entrepreneurship of Rajasthan skilled more than 6 lakh youth (RSLDC, 2017).

For effective skill development in Rajasthan, it is crucial for the state government to link the different schemes aimed at livelihood generation through skill development or training initiatives. Additionally, industries must be encouraged to partner in up-skilling programmes. New PPP models of operations matching core competencies should be undertaken as part of Corporate Social Responsibility (CSR) initiatives (RSLDC, n.d.).

Intervention 1: Vocational Training

Vocational training is training that emphasizes the skills and knowledge required for a particular trade, craft or job function. These courses provide job-specific technical training, with hands-on instructions.

In India, Ministry of Skill Development and Entrepreneurship (MSDE) promotes vocational training through various schemes like, Craftsmen Training Scheme (CTS) and Skill Development Initiative Scheme (SDIS). Depending on the trade, the CTS courses range from anywhere between six months to four years, while SDIS courses which run from four weeks to six months are of much shorter duration.

The benefit of education is measured by the difference of what the vocational training graduate produces and that of a control group of graduates with a lower level of education. In empirical applications of human capital theory, earnings have been used as a proxy of graduate productivity (Psacharopoulos, 1995).

For our paper, we estimate the benefit of vocational training as follows:

Benefit = Mean income of vocational training graduates — Mean income of school graduates without vocational training

Our analysis shows that over a working life from 18 to 59, the average individual in Rajasthan with vocational education will earn 1.8 lakh rupees more than an equivalent individual without vocational education (at 5% discount rate). This accounts for expected income growth as well as changing labour force participation and unemployment over the life cycle.

The cost of vocational training includes the costs to all parties of delivering vocational training. This implies, the cost to the individual (Training fees, charges for school materials, opportunity cost of education) as well as the cost to the government (Funding of educational institutions, curriculum development, administration costs, stipend, certification and assessment) of providing vocational training. Assuming a 40% drop out rate, the costs to the government per skilled person are 1118 rupees, while for students the cost is 0.45 lakh rupees, ~40% of which represents foregone earnings.

We have assumed the average duration of a vocational training course to be one year and used the costs and benefits data for the year 2015-16. We have, however, also provided benefit to cost ratios for scenarios representing different durations of skill training.

Intervention 2: Apprenticeship

'Apprenticeship' means training programmes that combine vocational education with work-based learning for an intermediate occupational skill (i.e., more than routinized job training), and that are subject to externally imposed training standards, particularly for their workplace component. It is the oldest form of skills transfer as the modality of skills development, which is closest to companies and employers.

In India, apprenticeship is regulated by the Apprentices Act, 1961. The Act is based on the principle of 'learning by doing'. Government of India recently introduced a few amendments to this Act as well. According to the Apprentices Act, employers who fall under the purview of the Apprentices Act, with 40 or more employees, is required to appoint between 2.5 percent to 10 percent of the average strength of the workforce in the preceding financial year as apprentices for each financial year. Apprenticeships are time-based, with duration ranging from six months to four years.

The rationale behind cost and benefit of apprenticeship is similar to that of vocational training. The cost of providing a 1 year apprenticeship includes the following:

- Cost to the individual of 0.22 lakh rupees representing foregone earnings as an unskilled worker less the stipend paid during the apprenticeship

- Cost to the employer of 1.5 lakh rupees reprsenting apprentice salaries, supervision and training costs, administrative costs, and
- Cost to the government of 0.2 lakh rupees representing costs associated with reimbursing the employers

The total cost of each apprenticeship is therefore 1.9 lakh rupees.

The benefits of apprenticeship include the benefit to the individual as well as the benefit to the employer.

- Benefit to the individual after the apprenticeship of 6.5 lakhs: Incremental mean earnings of a full-time worker who undergoes apprenticeship from ages 18-59, adjusting for expected income growth as well as changing labour force participation and unemployment over the life cycle.
- Benefit to the employer during the apprenticeship of 2.2 lakhs: Productive workforce, contribution to revenue, cost saved for recruitment through retention (no need to train new workers), and recruitment of people with demonstrated capabilities in carrying out efficient and productive work.

The total benefit of each apprenticeship is therefore 8.7 lakh rupees

Intervention 3: Support to SMEs

According to the World Bank's International Finance Corporation (IFC) jobs in Small and Medium Enterprises (SME) account for more than half of all formal employment world-wide (International Finance Corporation, 2013). Across developing countries as a whole this number averages as high as 66%. This has been the case for India too. SMEs in India employ nearly 40% of the workforce and constitute 37% of GDP. The global experience also demonstrates that job creation by SMEs is not always a given unless aided by strong and supportive policies. Globally, a wide variety of policies around several core themes such as access to capital, worldwide markets, technology and innovation and a supportive business ecosystem have been utilized to aid SME growth and job creation.

In India too, the Ministry of Micro, Small and Medium Enterprises (MSME) has implemented a variety of policies and implementation schemes intended to aid the creation and growth of

small and medium enterprises. It promotes the growth and development of the MSME sector by providing support to enhance competitiveness of the MSMEs.

Because of difficulty in quantifying the costs and benefits for credit support policies to SMEs and lack of available data, we have referred to the limited existing literature in this area.

Banerjee and Duflo (2008), suggests that one rupee of loan increases profit before interest payment by 0.89 rupees and this is used as a proxy for benefit to the SME. The cost of credit which is the summation of cost of borrowing, default rate and admin cost, is 16 rupees for every 100 rupees lent to the SME. The BCR for this intervention comes out to 5.56.

BCR Table

The Benefit-cost ratio (BCR) for the three initiatives are summarized below:

Summary BCR Table

Interventions	Benefit per individual / SME (INR)	Cost per individual / SME (INR)	BCR	Quality of Evidence
Vocational Training	183,396	45,616	4.0	Medium
Apprenticeship	872,633	191,906	4.5	Medium
Support to SMEs	-	-	5.6	Limited

Source: Excel spreadsheet accompanying this paper

Note: All figures assume a 5% discount rate

Scaling up the interventions

According to the Rajasthan National Skill Development Corporation (NSDC) skill gap report, there is an excess demand for 28,95,574 skilled workers in Rajasthan for the year 2018-19. Using this as a proxy for the number of people that need to be skilled (either vocational training or apprenticeship), we can identify the scaled up costs of both interventions.. Benefits, costs and net gain from the two such scaled-up interventions are reported in the table below.

Scaled up costs and benefits for the Interventions

Interventions	Benefits per year, crore	Costs per year, crore	BCR
Vocational Training	53,104	13,209	4.0
Apprenticeship	252,677	55,568	4.5

Note: All figures assume a 5% discount rate

Introduction

The criticality of skill development to India's labour market has been underlined by virtually every serious study in the area for well over a decade if not for much longer. From the establishment of the NSDC in 2009 to the adoption of Skill India as a key policy thrust of the current government, the skill development has continued its journey to the centre-stage of economic policy in the country. Notwithstanding its increasing centrality, however, the dent that the government skill programs have made on the real challenge so far, has been marginal at best. India is currently facing a paradoxical situation where a large population of youth is entering the labour market looking for employment and on the other hand, industries claim to have a lack of appropriately skilled manpower. This reflects the criticality of skill development to enhance the employability of the growing young population (Pathak, 2016). The country has been undertaking several steps in this direction since then. Schemes such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Skill Loan Scheme (SLS) and Rural India Skill (RIS) among others are reflective of this. However, it still has an enormous potential to tap onto its youth. The challenge of imparting skills to the vast majority of India's gigantic labor force in a short window of time before the demographic deluge turns into a demographic disaster remains as acute and intractable as ever. Nevertheless, this is a battle that India simply cannot afford to lose.

Achieving efficiency in use of limited resources to bring about maximum impact should, therefore, be a key objective for India. It is imperative that policy analysis helps identify the best intervention that can maximize the "bang for the buck" for the very costly marginal rupee that India decides to spend in skilling its workforce – a rupee that could have been equally importantly spent in health, education, sanitation, or economic impetus to industry.

Vocational education is part of the concurrent list of the subjects in India implying that both centre and the states can legislate on it. While skill development is undeniably a major national level challenge for Indian policy makers, the economic reality of each of the 29 states in the Indian union is quite unique and the likely economic impact of alternative policy interventions are likely to be strongly linked to the conditions in the states.

The current paper aims to focus on three different interventions in the state of Rajasthan (India's seventh largest state by population, home to well over 70 million people) and assess

their relative effectiveness using the benefit-cost ratio approach. The three interventions the paper will concentrate on are: The paper aims to focus on three different interventions and assess their effectiveness using the benefit-cost ratio approach. The three interventions the paper will concentrate on are-

- Vocational training
- Apprenticeship
- Support to MSMEs

For each intervention, the paper will give a brief description about the intervention, provide the empirical findings on the intervention as found in the existing literature, and then present the BCR in the Indian context.

Theory

A program's benefit-cost ratio (BCR), measured as the discounted present value of program benefits divided by the discounted present value of program costs, is widely used to evaluate a program. It provides a sense of how much benefits are generated per dollar of costs. This is expressed as:

$$BCR = \frac{\frac{\sum_{t=1}^{t=n} B_t}{(1+r)^t}}{\frac{\sum_{t=1}^{t=n} C_t}{(1+r)^t}}$$

A BCR greater than 1 indicates that the program generates net benefits and a BCR less than 1 implies the costs of undertaking the program exceed the benefits generated by it.

Vocational Training

Description of Vocational Training in India

The Ministry of Skill Development and Entrepreneurship (MSDE) is responsible for coordinating skilling initiatives in India and the Directorate General of Employment & Training (DGE&T) under it is an apex organization for development and coordination of the vocational

training to the employable youth in the country and to provide skilled manpower to the industry. It promotes vocational training through various schemes like, Craftsmen Training Scheme (CTS) and Skill Development Initiative Scheme (SDIS). In CTS, training is provided in 70 engineering and 63 non-engineering trades in the Industrial Training Institutes (ITIs). Some of the trades are- welder, electrician, fitter, wireman, carpenter, etc. The duration of CTS courses ranges from six months to four years, depending on the trade and entry qualification varies from 8th to 12th class pass-out. The courses on Modular Employable Skills under the SDIS are of shorter duration and range from four weeks to six months, provided by Vocational Training Providers (VTPs). Presently, there are 613 modules covering 70 sectors.

Literature Review

Over the years, a sizeable international literature has accumulated in the skill development area, with some progress even in the Indian and other developing country settings. This section attempts a brief overview of the literature, largely to provide a backdrop for comparison to the findings in Rajasthan. The issues involved are multi-dimensional and the review is arranged, to a large extent, by questions.

Vocational training is training that emphasizes the skills and knowledge required for a particular trade, craft or job function. It is also known as career and technical education (CTE) or technical and vocational education and training (TVET). These courses provide job-specific technical training, with hands-on instructions. In job searches, applicants who have undergone vocational training have an edge over others since they already possess the required skill and certifiable knowledge that is required to enter the field. While some students forego traditional academic education and take up vocational training in high school, others receive training either in college or at trade schools for adults.

Vocational training vs. general education – which pays more? It is well established that, for many countries,, the wage returns to academic qualifications are significantly higher than the returns to vocational qualifications, government training programs and adult skills training (Blundell, Dearden and Sianesi, 2005; Dearden et al., 2002; Dickerson, 2005; Carneiro and Heckman, 2003).

Returns to vocational education: Overall, however, it is difficult to show a causal relation between training and changes in sales volume, productivity and other profit measures of firms because there are many factors besides training, that can influence them (Lankard and Brown, 2001; Moy and McDonald, 2000). The same holds for the correlation between initial training and benefits accruing to the individual later in life as it is difficult to isolate the effect of VET from other variables that might have an impact on performance.

Based on England's Labour Force Survey, Jenkins et al. (2007) find negative average returns to National Vocational Qualification level 2 and there is less evidence of any association between vocational qualification level 2 and probability of employment. However, level 3 qualifications are associated with a higher probability of employment.

Using the student outcomes survey in Australia, Karmel and Nguyen (2006) compare students that have only partially completed VET certificate and VET graduates and find positive association between the highest (VET) education level and employment.

An OECD report on the subject concluded that it is an open question whether it is worthwhile to invest in vocational and technical education (Hoeckel, 2008). It states that though there is demand for blue-collar workers (i.e. VET graduates) in today's economies, VET is costly compared to general education.

An International Institute for Education Planning case study (Lauglo, 1993) on the vocational systems in Germany, Japan and Sweden found that short tailor-made courses have a higher unit cost than a stable continuous process.

A study on the analysis and benefits of Vocational Education and Training in EU undertaken by European Centre for Development of Vocational Training (2011) recognized that the interplay between institutions, legislation and practice prevented the coordination of VET and its research in a way that would benefit policy making. Some other countries also faced the problem of institutional arrangements. The study concluded that with proper institutional arrangements and proper synthesis of the entire system, the economic benefits of VET are widespread. They result in positive impacts on wages, employment, mobility as well as employment opportunities.

How to improve matters: A study undertaken on the vocational training and education system in Maharashtra (Majumdar, 2012) suggested an effective administrative setup to be established through the passing of a separate Act at the state level for the purpose of creating Vocational Universities, in accordance to the PPP Model.

It is widely believed that some of the major problems in the VET sector in India lay in employability and demand and supply matching, the requirements of the informal sector, financing, the state government's role and horizontal and vertical mobility among others. Education patterns at the school level should be redesigned in order to facilitate skill development as well as to promote and expand research in educational institutions.

Calculation of Costs and Benefits

Accurate measurement of costs and benefits of the policy interventions considered, naturally lay at the heart of the exercise undertaken here. This, however, is not an easy task. Costs are incurred by government, individuals and organizations, and similarly benefits accrue to all three. Uncontested methods of capturing and measuring the externalities created, however, are still beyond the available methodologies employed in the literature.

Also, the scope of our exercise here is primarily a secondary one, focusing on extant studies rather than undertaking original research. The papers covered, typically deal with specific aspects rather than comprehensively estimating costs and benefits associated with the policy interventions in question. Almost no literature is available at the state level and papers citing national level statistics need to bridge non-uniform observation periods and regions. Assumptions, sometimes sweeping, are therefore necessitated to ascribe rupee values to complex, unobservable variables using plausible proxies. Inevitably then, the individual estimates made are associated with broad confidence intervals. As such, the comparability of resulting BCRs are at a level of degrees of magnitude rather than of their simple numerical values. In addition to using extant research, we have, however, used some recent government collected data to estimate a few key values in the exercise.

For the calculation of benefits, we referred to the Fifth Annual Employment- Unemployment (2015-16) unit level data. The Annual Employment-Unemployment Survey is a household survey conducted by the Labour Bureau (under the Ministry of Labour and Employment) in all

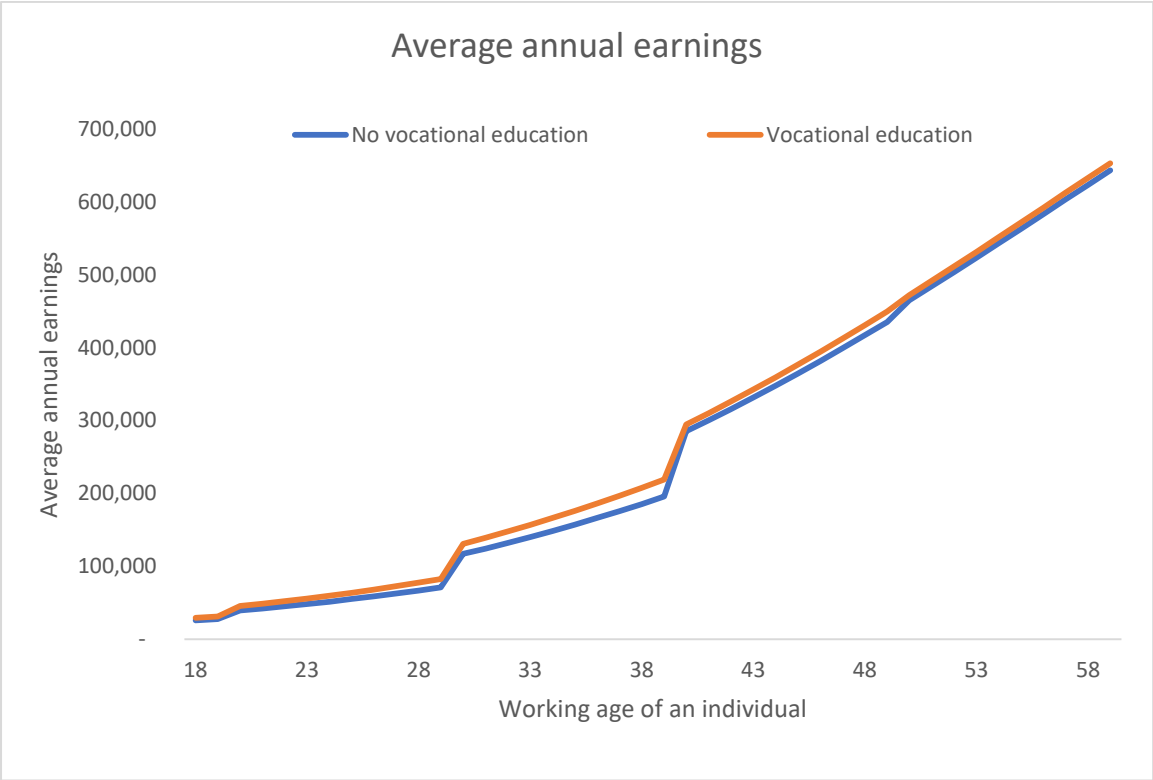
the States/UTs and covers all the districts. The survey covered a total sample of 1,56,563 households and from these households 7,81,793 members were queried. The annual survey throws important information on the various labour force related parameters such as labour force participation rate, unemployment rate, youth employment and unemployment rates, etc. and the data can be disaggregated by the sector of work as well as by region (states). We filtered out the data for Rajasthan and using the appropriate level of educational qualification, estimated the earnings for people who have received vocational training and those who haven't.

There are a total of 4657 observations for Rajasthan, people who have completed middle school. Out of these 4657 people, 4272 people have not received any kind of vocational training and only the rest 384 people have undergone vocational training. We use the difference in the mean income of middle- school graduates with vocational training and middle school graduates without vocational training, adjusted for unemployment rate, labour force participation and annual growth rate in income to arrive at the benefit of vocational training. Unemployment and labour force participation by ten year age have been extracted from NSS 68 (2011-2012) and income growth is based on Rajasthan Priorities Project projections.

The graph below depicts the predicted age earning profiles of an 18 year old in Rajasthan with VT and without VT adjusted for income growth, labour force participation and unemployment..[2] Due to limited number of observations for those with VT, we have used the average earnings for ten-year age groups, rather than each individual age, to calculate the age earnings profile. This explains the discontinuities at age 21, 31, 41 and 51 where there is an assumed change in both the average earnings for those working, and the labour force participation rate.

Of note is that earnings of vocational education graduates are only marginally higher than their non-vocationally educated peers across the life cycle, with an average premium of only 8%. This might partially explain the reluctance of young people in the state to enter and stay in vocational education programs.

[2] The inherent assumption behind this graph, and which is also standard in the returns to education literature, is that the earnings structure across ages that exists today will persist into the future.



Source: Spreadsheet accompanying this paper

The cost of vocational training will include the costs to all parties of delivering vocational training. This implies, the cost to the individual as well as the cost to the government of providing vocational training. Since vocational training comes under Ministry of Skill Development and Entrepreneurship (MSDE) we are using the total expenditure incurred by the ministry in the year 2015-16 and dividing it by the number of people skilled in that year to calculate the per capita cost to the government of providing vocational training.

The cost to the individual has two components- direct cost and indirect cost. The direct cost to the individual consists of the training cost, for which we have used the tuition/training fees charged by the government and private vocational training institutes, Industrial Training Institutes (ITIs). The indirect cost is the opportunity cost of availing vocational training, it is the income foregone while pursuing vocational training.

We have adjusted both the government and individual cost for the dropout rate which we have assumed to be 40%. We assume the person starts working at the age of 18 and retires at the age of 59 and the average duration of the vocational training course is one year.

Estimating costs and benefits using different discount rates gave the benefit-cost ratios as reported in the table below.

BCR for Different Discount Rates

Discount	Benefit per student (INR)	Cost per student (INR)	BCR
3%	259,925	45,616	5.7
5%	183,396	45,616	4.0
8%	116,707	45,616	2.6

Source: Spreadsheet accompanying this paper

Sensitivity Analysis

The BCR values presented above depend, among other things, three variables – the discount rate, the age at which the training is imparted as well as the duration of the training. The table below provides a sensitivity analysis of the BCR with regard to these three variables. The age of training refers to the age at which the trainee starts the VT program. Data indicates that most VT programs are considerably less than a year in duration. The costs calculated in the table below are pro-rated from the cost estimates in the BCR calculations above.

BCR – Sensitivity Analysis

Discount rate		3%			5%			8%		
Age of training (years)		18	25	35	18	25	35	18	25	35
Duration of VT	3 months	23.0	14.3	5.3	16.3	10.9	4.4	10.4	7.7	3.4
	6 months	11.5	7.1	2.6	8.2	5.4	2.2	5.2	3.8	1.7
	1 year	5.7	3.5	1.3	4.0	2.7	1.0	2.6	1.9	0.8
	2 years	2.9	1.8	0.6	2.1	1.4	0.5	1.4	1.0	0.4

Clearly the BCR rises dramatically as the duration of VT falls. This is because a shorter VT lowers costs to a fraction without any perceptible change in the discounted benefits. There is not much in the data to distinguish between the shorter and longer VT programmes, with the former being the predominant kind.

Apprenticeship

Description of Apprenticeship in India

Apprenticeship in India is regulated by the Apprentices Act, 1961. The primary objective of the act is to meet the skilled manpower requirements of the industry by fully utilizing the facilities available in the industry for imparting practical training. The Act is based on the principle of 'learning by doing'. According to the Apprentices Act, employers that have a training infrastructure (as laid down in the Act) and manpower strength of 40 or more are obligated to engage apprentices. The employers can engage apprentices in a band of 2.5% to 10% of total strength of the establishment. There are five different types of apprentices, trade, graduate, technician, vocational and optional trade apprentices. Directorate General of Training under Ministry of Skill Development and Entrepreneurship monitors the implementation of the Apprentices Act in respect of trade apprentices and Department of Education in the Ministry of Human Resource Development is responsible with respect to graduate, technician and vocational apprentice. The trade apprentices are given a monthly stipend by the employer and for the categories of graduate, technician and vocational apprentices, the cost of the stipend is borne by both the employer and the government. (Directorate General of Training (DGT), Ministry of Skill Development and Entrepreneurship, n.d.). Apprenticeships are time-based, with duration ranging from six months to four years.

Literature Review

'Apprenticeship' refers to at-workplace training programmes that combine vocational education with work-based learning for an intermediate occupational skill (i.e., more than routinized job training), and that are subject to externally imposed training standards, particularly for their workplace component (Steedman, 2012). It is the oldest form of skills transfer as the modality of skills development, which is closest to companies and employers.

A significant number of studies have been commissioned in countries such as Germany, Switzerland, Austria, Canada, UK, Australia and USA to critically analyse the effective costs and benefits of apprenticeships and also to increase popularity of apprenticeships within the society and the business environment through the establishment of a business case for the same. The first benefit-cost analysis in Germany was conducted in the 1970s wherein the "Expert Commission on Costs and Financing of Vocational Education and Training" (also known as the "Edding-Commission") developed the conceptual framework.

Current cost-benefit analyses of apprentices are internationally conducted, typically based on a standard benefit-cost analysis of a single firm that hires apprentices. The benefit-cost model attempts to accurately capture the variety of monetary costs and benefits associated with apprenticeship training in specific sectors and industries. Net benefits and costs are usually calculated per apprentice, per year. There are only slight differences in approaches how costs and benefits are calculated between the countries. (Muehlemenn et al, 2013), in their recent comparative study on Cost-Benefits analyses in Apprenticeships in 4 European countries (Switzerland, UK, Germany and Austria), discuss the various approaches, methodologies and the influencing factors which lead to higher and lower net benefits and decisions of enterprises to hire).

Ryan and Unwin (2001) in their study of the apprenticeship systems in the UK considered the quality of apprenticeship training in terms of the length of training as well the acquisition of qualifications. On the other hand, McIntosh (2004) explicitly considered the empirical estimates of actual wage returns to apprenticeship. His analysis of the Labour Force Survey between 1996 and 2002 showed that after completion of Apprenticeship, there was an increase in the wages of men by about 5-7% while for women, there was no change in the wage return.

Dearden et al. (2002) viewed the returns to apprenticeship as part of a wider study on the returns to academic and vocational qualifications. In their study, they found a very small and statistically insignificant effect on wages.

Similar studies have been undertaken in Germany as well. Cooke (2003) considered the impact of apprenticeship on Germany on both initial as well as starting wages in 1984 and the wage growth between 1984 and 1997. The results showed that the starting wages for

apprentices and non-apprentices were similar. However, the wage growth for former apprentices was significantly higher. Winkelman (1997) compared the vocational training in Germany to the United States. He found that in Germany, more than 70% of the workforce had passed through apprenticeship while in the USA, only a mere 12% of the workforce had undergone a formal company training programme.

A Cost-Based Analysis of Registered Apprenticeship across 10 states in the US was conducted (Reed et al, 2012). It also addressed the question of women's experience with apprenticeship. It was found that women participate at lower rates than men and are concentrated in social services occupations, mainly in child care and health care. Suggestions such as undertaking targeted outreach campaigns, building women's basic skills, helping women develop accurate expectations about particular occupations, helping them arrange adequate child care, assisting employers to enforce policies to combat harassment at male-dominated worksites, and connecting women with their peers for support and encouragement were made to improve the situation for women in the Registered Apprenticeship programme.

Another study conducted by ILO in India (Rothboeck, 2014) to see if there exists a business case for apprenticeships, focuses on five cases from various industries (light and heavy manufacturing, the retail and hotel industry). The cases re-affirm that apprenticeships create more benefits than costs; investments are in fact often recovered during the apprenticeship period or immediately within the first year itself when apprentices are retained. For many enterprises benefit- cost aspects are one important aspect, which determines training decisions. However, there are also other factors and cultural differences between enterprises, how they see and therefore invest into apprentices: some see apprenticeships more through a production lens, whereby they encourage apprentices to be workplace ready and productive as soon as possible. Other enterprises have a more long-term investment perspective, and aim at retention and employment opportunities.

Calculation of Costs and Benefits

The rationale behind cost and benefit of apprenticeship is similar to that of vocational training. The cost of providing apprenticeship includes the cost to the individual, employer

and the state. The table below list downs the cost to different stakeholders and also mentions the sources which we have used for our analysis.

Costs to Various Stakeholders (with source)

Stakeholder	Cost	Data Source
Individual	Opportunity cost (foregone earnings of an unskilled worker)	The minimum wage of an unskilled worker as notified by the state government is used to calculate the opportunity cost
Employer	Apprentice salaries, supervision and training costs, administrative costs	Using an existing study conducted in India, we estimated the cost to the employer
Government	Reimbursing the employers, marketing and promotion costs	Budget of the government was used to evaluate the cost to the government

We are assuming the average apprenticeship training lasts for one year. The cost (opportunity) to the individual for undergoing apprenticeship is the income forgone of an unskilled worker for one year. We have used the minimum wage of an unskilled worker as a proxy to estimate the opportunity cost. We deduct the stipend he gets in that one year from the income foregone to arrive at the final cost to the individual. Using the study conducted by the ILO (Rothboeck, 2014) to assess the returns from apprenticeship training in India, we estimated the cost to the employer by taking the average cost of apprenticeship of all the case-studies. By dividing the government budget allocation to apprenticeship by the number of apprentices to be trained, we get the per capita cost to the government.

The benefits of apprenticeship include the benefit to the individual as well as the benefit to the employer. The table below lists the benefits to different stakeholders and also provides the data sources used .

Benefits to Various Stakeholders (with source)

Stakeholder	Benefit	Data Source
Individual	Returns to wages, employment chances	Existing literature (secondary data) to estimate the earnings of a person who undergoes apprenticeship training and for a person who doesn't undergo apprenticeship we used the minimum wage of an unskilled worker as notified by the government
Employer	Productive workforce, contribution to revenue, cost saved for recruitment through retention -no need to train new workers	Using an existing study conducted in India, we estimated the benefit to the employer

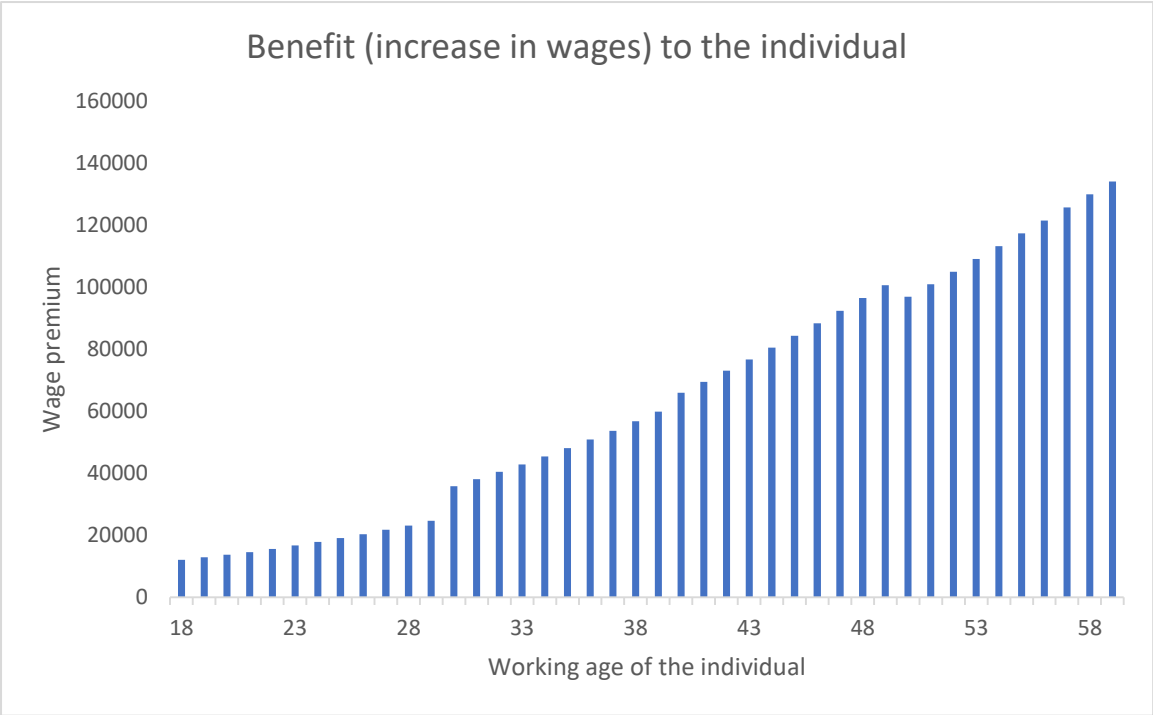
The average of total benefit to different employers, as specified in the ILO study, was taken to evaluate the benefit to the employer. The ILO study also provides examples of post-apprenticeship productivity or wages, which we have used to estimate the increased income an individual gets after he undertakes apprenticeship. We subtract the income of an unskilled worker from the post-apprenticeship income to calculate the benefit of apprenticeship to the individual. We assume an average individual starts working at the age of 18 and works till he turns 59 and that every year income grows according to the Rajasthan Priorities, an Indian Consensus Prioritization Project assumption. As above we adjust for labour force participation and unemployment across ten year age groups.

According to the ILO study, cost and benefit to the employer are given in the table below.

Cost and Benefit to Employer (ILO Study)

	Buhler India, Bangalore	Classic Moulds and Dies, Chennai	EFD Induction, Bangalore	Foodworld, Bangalore	Lemon Tree, Gurgaon - Housekeeping	Lemon Tree, Gurgaon - Cooks	Lemon Tree, Gurgaon - Clerks	Average of all the cases
Cost for training per apprentice	154364	135100	133250	105600	195133	168067	157367	149840
Benefits generated per apprentice	200806	162226	154232	143174	277455	293620	293620	217876
Productivity in year after 1st year of apprenticeship	82050	108000	120750	64800	110400	73600	66400	89429

Benefit to the individual, in terms of an increase in annual income is depicted in the image below.



Estimating the total costs and benefits using different discount rates gave the benefit-cost ratios as reported in the table below.

Cost and Benefit at Different Discount Rates

Discount	Benefit per apprentice (in Rs.)	Cost per apprentice (in Rs.)	BCR
3%	1,238,480	191,906	6.5
5%	872,633	191,906	4.5
8%	578,105	191,906	3.0

Source: Spreadsheet accompanying this paper

It is important to note here that the exercise above may not capture all the socio-economic benefits that possibly emerge from apprenticeship given its likely externalities, hence the BCR is likely to be an under-estimation. Several other associated questions are relevant as well. How do the BCRs work out at different skill levels and age brackets (typically apprenticeship happen at the beginning of work-life, but mid-career apprenticeships are conceivable as well.)? What role does selection play in determining these BCRs? How do HR practices enhance them? Unfortunately, data limitations prevent us from addressing these important issues.

Support to MSMEs

Description of Support to MSMEs in India

The need to create a large number of jobs consistently is one the biggest challenges facing India. The government, its policy-making arms, think tanks and industry organizations are all aligned that between 10-12 million jobs have to be created annually to take advantage of India's much vaunted demographic dividend. Globally, job creation on such scale has historically arisen out of small and medium enterprises (SME). According to the World Bank's International Finance Corporation (IFC) jobs in Small and Medium Enterprises (SME) account for more than half of all formal employment world-wide[3]. Across developing countries as a whole this number averages as high as 66%. This has been the case for India too. SMEs in India employ nearly 40% of the workforce and constitute 37% of GDP. The global experience also demonstrates that job creation by SMEs is not always a given unless aided by strong and supportive policies. Globally, a wide variety of policies around several core themes such as

[3] Assessing Private Sector Contribution to Job Creation and Poverty, IFC Study January 2013

access to capital, worldwide markets, technology and innovation and a supportive business ecosystem have been utilized to aid SME growth and job creation.

In 2016, there were a reported 36 million micro, small and medium enterprises, employing over 80 million persons (MSME.Gov.in, 2016). Indian SMEs account for 45% of the manufacturing output and 40% of exports, and more than a third of India's GDP (37%). The Ministry of Micro, Small and Medium Enterprises (MoMSME), is the apex body for the formulation and administration of rules, regulations and laws relating to micro, small and medium enterprises in India. MSME classifies enterprises into one of three categories based on their investment in plant and machinery (for manufacturing) and on equipment (for services enterprises). Primary responsibility for development SMEs in India resides with the states, with the central ministry responsible "to assist the States in their efforts to encourage entrepreneurship, employment and livelihood opportunities and enhance the competitiveness of MSMEs" (Press Information Bureau, GOI, 2015). Over the years, multiple governments have recognized the need for providing the SME sector strong support and constituted numerous committees to recommend appropriate action. Furthermore, individual states such as Andhra Pradesh[4] and Rajasthan[5] have articulated their own MSME Policy.

The Ministry of Micro, Small and Medium Enterprises (MSME) in India has implemented a variety of policies and implementation schemes intended to aid the creation and growth of small and medium enterprises. It promotes the growth and development of the MSME sector by providing support to enhance competitiveness of the MSMEs. The various schemes undertaken by the Ministry range from providing adequate flow of credit from banks, support for technology upgradation and modernization, to integrated infrastructural facilities and assistance for better access to domestic and export markets. MSME continues to refine such policies through periodic industry inputs and study of global trends and experience.

Literature Review

A study conducted by the Small Business Branch of Industry Canada looks into the cost-benefit analysis of the Canada Small Business Financing Program (CSBFP). CSBFP is a

[4] Micro Small and Medium Enterprises Policy, Govt. of Andhra Pradesh, 2015
[5] Rajasthan MSME Policy, 2015

government funded program intended to improve the Canadian small and medium-sized enterprises' (SMEs) access to finance. It is a guarantee scheme that prevents losses to lenders by covering up to 85% of the loan value of defaulted loans. The programme is funded through a mix of loan registration, administration fees and government contributions. The cost-benefit analysis focused on costs to administer the program including salaries and benefits of staff, direct operating expenditures, capital costs, and costs of loan defaults to lenders. It also focused on the benefits generated through the program to various agents, including additional salaries and wages paid to new employees, interest revenues earned by lenders, direct and indirect GDP impacts to the economy, and registration and administration fees collected by the program. The study concluded that the program generated significant net benefits for the Canadian economy. At 5% discount rate, they estimated a BCR of 5, which translates into five dollars' worth of benefits generated for the society for one-dollar cost borne by the program (Seens, 2015).

Calculation of Costs and Benefits

Based on the Canadian study of the CSBFP, similar cost-benefit analysis can be conducted for India. However, due to lack of availability of similar data for India and specifically for Rajasthan, we have used an existing study conducted in India to estimate the BCR for credit support to SMEs in the country.

A study by Abhijit Banerjee and Esther Duflo (Banerjee and Duflo, 2008) shows that directed credit to firms is used to finance more production- results in acceleration in the rate of growth of sales and profits. They find that elasticity of sales with respect to bank credit is 0.75 and that of cost is 0.70. For the average firm, this suggests that one rupee of loan increases profit net of interest payment by 0.73 rupees, and hence profit before interest payment by 0.89 rupees.

The cost of credit includes the cost of borrowing for the lender, default rate and administration cost. The cost of borrowing for the lender, the bank is the repo rate, which is 6%. Assuming default rate to be 9% and admin cost to be 1%, the cost of credit equals 16 rupees for every 100 rupees lent to the SME.

Using the profit before interest payments from Banerjee and Duflo's study as estimated benefit for the SME (i.e. 89 rupees) and cost as 16 rupees, ***BCR equals 5.56***.

Conclusion

India is currently facing a paradoxical situation where a large population of youth are entering the labour market looking for employment and on the other hand, industries claim to have a lack of appropriately skilled manpower. This reflects the criticality of skill development to enhance the employability of the growing young population (Pathak, 2016). There is an urgent need for inclusive growth. Skilling must be provided with speed, quality and sustainability. Prime Minister Narendra Modi's efforts through the Skill India Mission in 2015 has given an impetus to previous efforts in skill development. The country has been undertaking several steps in this direction since then. Schemes such as the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), Skill Loan Scheme (SLS) and Rural India Skill (RIS) among others are reflective of this. However, it still has an enormous potential to tap onto its youth.

Vocational Training and Apprenticeship, two of the skilling schemes of the government are effectively evaluated in this paper. The paper conducts a cost-benefit analysis of the two schemes and at 5% discount rate, the benefit-cost ratio of vocational training is around 4, vs. 5 for apprenticeship.

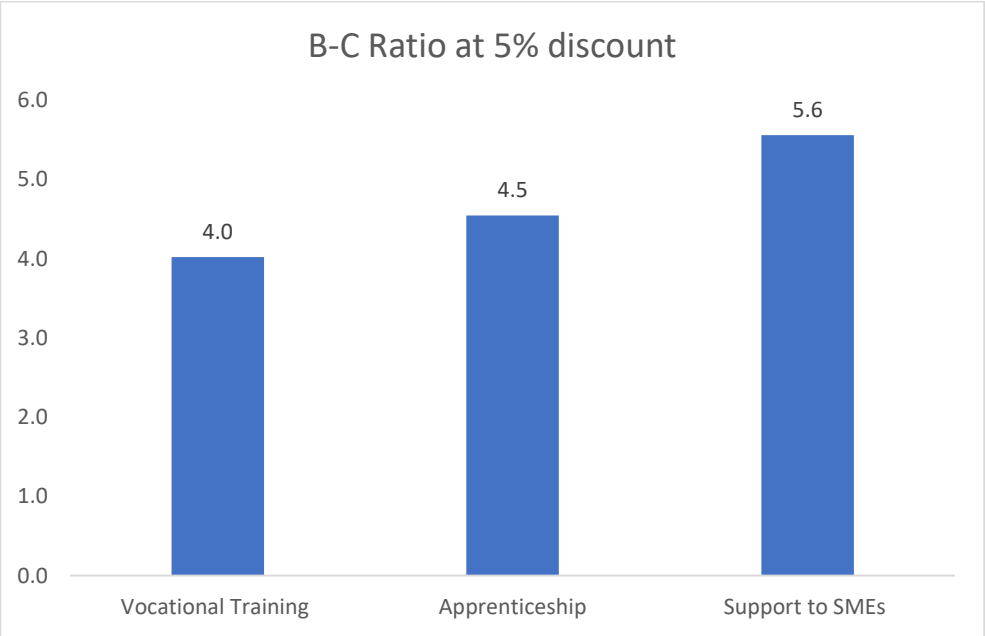
The greater than 1 BCRs validate the wide belief that apprenticeship and vocational training will help in solving India's problem of education and sustainability. To ensure effectiveness of these programmes, there must be strong and effective linkages between the industry and the trainer institute. Reworking of education and governmental efforts in the area must be undertaken.

Monitoring and evaluation is the integral to any programme or initiative. Thus, the government must undertake holistic evaluation of all skill development programmes in the country. This will enable it to identify the impact of the programme, assess alternate strategies, revamp the model to facilitate more efficiency and thereby bridge all the gaps in the implementation process.

It is important to bear in mind that the foregoing analysis is essentially partial in nature, with a strong implicit *ceteris paribus* assumption built in. There may very well be general

equilibrium effects ignored here, effects that can be significant, particularly for a state. Encouragement to SME for instance may cause inter-state migration or more likely greater investment in Rajasthan from other states. Innovation – both job-reducing and skill-replacing – is almost certain to continue. Productivity gains from better skilled workers can produce second-round income effects. All these and other effects can affect the estimations made here, but are currently virtually impossible to predict or quantify in a meaningful way. These effects are likely to be more pronounced for skill development at an early age rather than those at later stages in work-life. With that caveat in mind, it is hoped that the ratios and resulting ranking provided herein would serve as a guide to policy-makers in Rajasthan to build a more efficient skill development system for the state.

Summary Infographic



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Sector Expert Review

Rajasthan Priorities
An India Consensus Prioritization Project

Dr. Prabhat Pankaj
Director
Jaipuria

Macro context and remarks

India's 'demographic dividend' is likely to be marred due to several factors, of which 'skill gap' and 'women participation rate' are most glaring. The problem of skill gap is present both in formal as well as informal sectors. Addressing skill gap through vocational training and apprenticeship is only a part of the solution. They do not cover the entire gamut of working labour force. There is yet another problem of 'apathy toward training'. The main reason for such apathy is apprehension for a post-training gainful and sustainable employment. Strengthening the link between skill-training and gainful employment is vital for the success of skill building programme. Of course, a cost-benefit analysis is called for each rupee invested towards skilling and training and also for prioritizing the expenditure.

Women participation rate is vital for 'demographic dividend' as not many women come out and join job market or start business of their own, even though they are educated. Demographic dividend is about participation of young population in workforce. Women workforce participation rate stands at 34.2 per cent and if we account for bulge in young population and given that 50 per cent will be women, the effective dependency ratio is estimated to go up to 1.26 for India by 2030. This will not put us in any advantageous position. Women who are able to complete schools or take a degree from college must stay in job market or start something of their own. In view of this, participation of women need to step up in skill building programmes. Of course, income generated in the hands of women has greater impact on family poverty, education, and nutrition.

Comments

The paper under review deals with estimation of cost-benefit ratio with respect to three skill-related interventions in Rajasthan state, i.e. vocational training, apprenticeship, and support to small and medium enterprises (SMEs). It uses secondary data from annual employment-unemployment survey. Based on a generic assumption of 5% social discount, paper finds that benefits to cost ratio is the highest for support for SMEs, followed by apprenticeship and vocational training.

- The paper is forthright in outlining that 'demographic dividend' of India has a limited window of next 15-20 years and in the absence of desired education and skilling most of it may turn into a 'demographic liability'. There is a huge skilling gap exists and due to this employability turns out to be big question mark.

- There is yet another aspect which needs to be looked into is 'women participation rate' in labour market vis-à-vis participation of women in vocational and apprenticeship skilling. The question to be asked here is—how different is the BCR for female vis-à-vis male? It is well established that it makes big difference in terms of total benefits if similar amount is earned by women than men in the families below poverty line.

- Is BCR a kind of investment priority indicator? If the purpose is for setting funding priorities, then I believe BCR can be a partial indicator rather than a conclusive

indicator. For example, SMEs support entail several spill-over benefits which cannot be measured based on mere employment-unemployment data. However, BCE does provide essential guidelines and basis for setting priority to policy makers.

- The paper is a good attempt and systematically carried out. The review of literature is satisfactorily done. Within the limitation of studies as spelled out in the paper, it has made sensible calculations. I am sure, policy makers would find it a plausible base-scenario for decision making.

Sector Expert Review

Rajasthan Priorities
An India Consensus Prioritization Project

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Ministry of Rural Development

The formation of a new Ministry of Skill Development and Entrepreneurship highlights the growing need to address the complex issue of a rapidly growing economy, a growing young labor workforce, and a seemingly paradoxical phenomenon of huge domestic supply gap of skilled manpower. With more than 60% of the population in the working age group of 15 to 58 years, an annual entry of more than 10 million young people into the workforce, and an ageing world population, India has a huge demographic dividend which it can reap domestically and internationally. At the same time, less than 5% of the population has formal vocational training, the labor market is still largely non formal (93% of the workforce in unorganized sector), and the existing skill development infrastructure in the country, especially for blue---collar workers, is largely in the government sector (ITIs). Thus there is an urgent need to utilize this demographic dividend.

An OECD report on this subject concludes that it is open question whether it is worthwhile to invest in vocational and technical education. (Hoeckel, 2008). However, benefits can take various forms and arise at different points in time, during or (much) after the course or training. The foregoing paper makes a case for positive BCR in the case of individuals based on mean income levels correlated with vocational training. The state yields net benefits both in terms of social rents (both individual and public costs plus positive externalities form increased productivity due to better education) and in fiscal terms (education expenses versus increase in tax income from higher earnings from better educated individuals) (Wolter and Weber, 2005).

When discussing benefits accruing from vocational training [government sponso sponsored, or student paid], there are certain variables which come into play and need to be taken into consideration while designing any policy on Vocational Training.

Firstly, as pointed out by Meer (2007) the typical VET student differs systemically from the general student and as such labor market outcomes can either not be directly compared or are skewed and incomplete. In India only 15% of private training institutes are in the technical blue collar sector which is catered to mostly by government run/regulated ITIs. Getting short term courses run through a nascent training infrastructure has its own problems. This is compounded by the fact that as indicated above, the average VET student comes from a background, which is different and more challenging than the average student getting into the organized labor market. She is typically rural, with poor schooling, and poor access to choices of training or improvement. Thisis coupled with a lack of aspirational branding of VET courses, thus leading to poor outcomesfrom the VET training.

An important corollary to the above is the fact that international experience suggests that employers mostly want young workers with strong basic academic skills, and not necessarily vocational skills. What employers are looking for are individuals who have the ability to communicate, solve problems and teamwork, and not students trained in a narrow vocational skill. Even in countries with large vocational education systems there is a trend towards moving to a more general education system and increasing generalization of the vocational curricula. Experience worldwide suggests that India would do well to not expand its vocational education system but focus on strengthening its general education system. (World Bank 2008). This is a chicken and egg situation, and in this country the government has taken a strategic decision to go ahead with strengthening the vocational training system, while at the same time continue with its effort to strengthen the educational system. At the same time, the government has also initiated measures to bring vocational training into the curriculum of the general education system.

Which brings us to the second most important aspect of vocational training in India– of focus on the vast un---served and under---served non---formal sector. The Deen Dayal Upadhyaya Grameen Kaushal Yojana is a program under the Ministry of Rural Development, Government of India, which focuses primarily on skilling low---income, rural labor force. However, this sector faces its own set of challenges. On the demand side, few employees in the informal sector see the importance of skills trainingFor. the employers, there is a definite value addition, but one which they are not willing to finance. Further, skilling in the informal sector does not automatically transform to higher wages or better job confidence. On the supply side, most government training centers are in the formal production sector.

Even the few private players are more keen to provide industrial training for placement in the formal sector rather than programs which cater to the informal sector. There is an added problem of non availability of data from the ground which can inform future policy changes.

The paper compares benefits accrued to skilled middle school graduates vis---à---vis non skilled middle school graduates and concludes the positive BCR to skilling. Focusing the study on middle school graduates rather than those who have completed a minimum K---10 degree is that students attending VTE tend to be the lowest attainers at the end of compulsory education. Thus the issue of ability bias is addressed to a large extent by this specific sample selection. There is a positive BCR with very low SDR (social discount rates) showing that there is indeed a case to be made for public funding of skilling. However debatable the assumptions and however many factors may or may not have been taken into

account into the study, it is nobody's case that skilling not just yields positive outcomes, but is an imperative, given the labor market requirements and the growing under---utilized workforce in the country.

However, the question which should and which is currently occupying the minds of practitioners and thinkers of government policy is – how do we make VET more cost effective in the country? The World Bank, OECD, NSDC, and various other agencies and individuals have put forth many suggestions and recommendations, many of which are already being followed and in place. The NCQG, the formation of NSDC as a nodal agency, the formation of Sector Skills Councils, reorganization of the ITIs on a PPP model, are all measures which have addressed the systemic and functional changes required in the skilling eco system. However, there is still much more that needs to be done in this area. Based primarily on the cost---benefit paradigm of looking at the policy issues related to skilling, there are two important points that need to be addressed at present.

Question 1 – Who should pay for VET?

A basic course in microeconomics teaches us that demand is the willingness to buy coupled withthe ability to buy. Many current programs, especially those funded by the government like the PMKVY and the rural based programs, suffer from a lack of demand. Firstly, this is due to the fact that many of the courses are not aligned to the labor market requirements. Secondly, for rural training, the courses related to skilling for the non formal sector, do not exhibit an obvious perceived incentive in the labor market. This means that an investment in the skills related to the non formal sector do not obviously lead to more secure jobs or better wages. Thirdly, many of the courses are ad hoc in nature and do not fully prepare the candidate to be job ready. The government and skilling regulation agencies are now issuing guidelines for putting in soft skills, general education, and language skills as mandatory part of the skill course curriculum for better labor market acceptability.

Due to the fact that the courses are not aligned to market requirements, coupled with inability or unwillingness of the employers to pay for the skilling, the major part of the skilling funding has to come from government.

There is anecdotal evidence to show that when skilling is paid for by the end customer, there is better performance and better outcomes. Since there is a strong positive correlation to skilling and better wages, there is a strong case to shift a part of the skilling funding to the studentBeicht. and Walden

(2005, quoted in OECD Report) observe a trend across many countries towards more contributions by individual students to the funding of VET even though current student contributions are already considerably higher than those made by university students. However, this will work only if there are skilling programs which are better aligned to market requirements.

The question of who pays, also has a bearing on the availability and quality of private skilling providers in the market. There is a need to better regulate the market in terms of assessment rather than in terms of licensing and straight jacketing within government regulatory bodies like the AICTE. The NCQF and the NOS were expected to do this, but there is still much room for dismantling obstacles to the private sector stepping in with providing market fee based skilling programs.

Secondly, at present there is no system to ensure that the employers bear a part of the costs related to skilling. This leads a case of adverse selection where there is no incentive on the part of the employer to participate in the skilling program of the government. Although there are sector skill councils made with participation of the employers of that particular sector, these are not as effective in terms of program design and management.

Question 2 – Are there other cost variables which can be influenced for better outcomes romf the cost--- benefit relationship of skilling?

Role of the State

In a classroom based training model, a system currently being followed in India, the programs are predominantly funded by the government (Ball, 2005). By contrast, in dual system countries, there is a private public partnership model wherein the government bears the school training cost and the employer funds the workplace training cost. There may or may not be a component of student payment. However, there is a component of student paying costs in terms of reduced salaries or foregone income. Further, the transfer of funding by government also shows distinct different patterns.

There is a model wherein the funds spent by government may be transferred directly to the students or the government may make payments to the skill provider or the employer. In India, a mixed model is being followed, while we search for a solution that will be the best fit.

Role of the Employer

This is an extremely important variable which affects the benefit---cost outcomes off skilling. The Sector Skill Councils were formed to include industry in the skilling program, in terms of curriculum design, assessment norms, and industry feedback on market requirements. Further, in India, special Centers of Excellence have been set up with government funding to address the issue of high costs of technical vocational training.

Role of Program Design

The benefits of VET also depend on how it is provided (Gospel and Foreman, 2002) Single employer training is the most effective, especially when integrated with broader human resource planning of the employer. However, it is expensive and staff retention issues also dissuade companies from investing heavily in this model. Colleges provide much wider coverage but may lack the industry connect. Private providers need to be flexible and adaptive to market needs. However, there are wide fluctuations in quality. Multi---employer training and the dual system of training may perhaps provide answers to improving the benefit---cost ration of skilling.

In conclusion, there is a strong case to validate the wide belief that vocational training will help in overcoming India's challenge and opportunity of the demographic dividend. The government has taken a bold and effective strategic decision to go ahead with major government funding to press ahead the Skill India agenda. At the same time it is imperative that the scarce resources of the country are put to the best possible use and that we get the maximum returns on deployment of government funds to skilling.

The current initiatives that are being undertaken are a step in the right direction. However, implementation of these policy initiatives needs to be strengthened. At the same time, any course correction in policy needs to be in line with a holistic view of skilling in general and how it needs to be always validated in terms of a positive benefit---cost ratio. There are various issues relating to monitoring and evaluation, assessment, course design, and branding, which have not been touched upon here. However, the most urgent need today is to involve the employers, to strengthen private public partnerships, and to incentivize the market to add value to the skilling market in the country.

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Rajasthan is the largest Indian state. It has a diversified economy, with mining, agriculture and tourism. Rajasthan has shown significant progress in improving governance and tackling corruption. However, it continues to face acute social and economic development challenges, and poverty remains widespread. What should local, state and national policymakers, donors, NGOs and businesses focus on first, to improve development and overcome the state's remaining issues? With limited resources and time, it is crucial that priorities are informed by what can be achieved by each rupee spent. To fulfil the state vision of "a healthy, educated, gender sensitive, prosperous and smiling Rajasthan with a well-developed economic infrastructure", Rajasthan needs to focus on the areas where the most can be achieved. It needs to leverage its core competencies to accelerate growth and ensure people achieve higher living standards. Rajasthan Priorities, as part of the larger India Consensus – a partnership between Tata Trusts and the Copenhagen Consensus Center, will work with stakeholders across the state to identify, analyze, and prioritize the best solutions to state challenges. It will commission some of the best economists in India, Rajasthan, and the world to calculate the social, environmental and economic costs and benefits of proposals.

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