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SUSTAINABLE GROWTH THROUGH VOCATIONAL EDUCATION: ANALYSIS OF ITS IMPACT ON INDIAN ECONOMY

N.Shradha Varma
Maitreyi College, Delhi University

Nupur Kataria
Maitreyi College, Delhi University

ABSTRACT

India's growth history clearly exhibits the fact that since the start of economic planning, India has its complete focus on improving growth parameters including employment rate along with major component being Gross Domestic Product (GDP). There have been many steps taken, along with constant changes in the existing policies, towards achieving sustainable growth or economic growth that fosters progressive future along with better present. One of those many steps was the introduction of Vocational Education. The idea of vocational education was accepted as a new norm in the established context of providing conventional education because it involves imparting practical knowledge and technical skills. This was a step taken towards providing employment opportunities and making use of education directly in the field. It has always been observed that if India, being a developing country, wants to achieve higher and yet sustainable growth then it must work in the direction of providing employability (even for the neglected classes or unnoticed groups) which can happen, only when, the focus of education is to provide the updated set of knowledge and required domain of skills along with structured academics. There has to be a uniform platform for providing the much needed technical know-

how and training which is well represented in the form of existing vocational educational centers, which would be followed by direct employment and utilization of acquired skills of the learners in the respective fields. Thus, this very innovative step in the educational system can help India to look for a better and sustainable future in the form of utilization of its human resource. This study focuses on understanding vocational education as a directional path towards sustainability in learning, employment and thus economic growth. It also has the analytical exercise of observing the impact of such a kind of education on the parameters determining Indian economy.

Keywords

Sustainable Growth, Vocational Education, Knowledge, Employment.

Introduction

Vocational education generally referred as *career education* or *technical education* is that aspect of the education which involves practical training preparing the learners to gain skills thus enhancing their productivity in various marketable jobs. It is the concept of education which focuses on the methodology of developing necessary skills of the people required for establishing self dependent jobs and promoting self employment opportunities for all. The idea of providing such a kind of education originates from the greater need for the technically educated and skilled people in various productions based and also in service providing activities. Vocational trainings in a way give students work related experiences that many employers expect. We are known to the fact that there has always been a strong priority given to the sustainability of the growth process by many global and national experts and even by international and domestic policymakers. The idea of emphasizing the phenomenon of sustainable growth is not only to have a constant increase in the economic growth of a country for the benefit of future generation but also for a consistent improvement in all other economic and non-economic parameters characterizing any economy. With a sharp increase in the number of manufacturing activities domestically and also globally over the last years there is no doubt that technical and skill based education is in great demand and thus in India, there is a special provision for imparting Vocational Education. For the growth and development of any country,

education is one of the significant tools which can strengthen the knowledge base of the economy hence improving the efficiency and productivity of the labor force of that country. And undoubtedly, this rise of the productive ability of the human resource is a way towards sustainable growth and development of a country. With continuous learning of the technical skills and constant addition to the practical knowledge, the ability and aptitude of the workable population can be elevated which can add on to the growth numbers of the country and this is what is being tried to achieve via provision of vocational education in India.

Vocational Education in India

The Technical and Vocational Education and Training are the inclusion of basic technical and scientific knowledge with the skill-based vocational programs. United Nations Educational Scientific and Cultural Organization (UNESCO) 2013 defines TVET as, refers to all forms and levels of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life. This is the level of skills and knowledge required to be taught prior to workplace entry to cope with the emergence of technologies in the workplace. Technical and Vocational Education programs are offered at Vocational Training Institutes and Centers, Technical Colleges at the Secondary and college of education, polytechnics and universities at Post-Secondary Education level. Manfred and Jennifer, (2004) advocated that vocational technical education comprises all more or less organized or structured activities that aim at providing people with the knowledge, skills and competencies necessary to perform a job or a set of jobs whether or not they lead to a formal qualification. These definitions show that the relationship between VTE and employments is undeniable. Originally, Vocational training was the subject of matter under the domain of the Ministry of Labor along with other central ministries and various state-level organizations. In 2013, the launch of National Skills Qualification Framework (NSQF) to provide certification to competency needed at any level through formal, non-formal or informal learning was the necessary policy step to harmonize the differences existing in terms of standards and costs of providing vocational education. In November 2014 the Government of India formed the Ministry of Skill Development & Entrepreneurship. Articulating the need for such a Ministry is essential

as the priority of all countries of the world irrespective of being developed or developing is to promote skilled manpower for the betterment of the global society. As a continuation of its efforts to consolidate skill development activities across the country, the Government of India has been in the process of launching many notable policies as it launched the National Skill Development Mission (NSDM) in July 2015 with the intention of creating convergence across skill imparting sectors and also coordinating their efforts to achieve skills of a certain standards (Ministry of Skill Development & Entrepreneurship website). It also launched the National Policy for Skill Development & Entrepreneurship with the focus on enhancing the standards of the skills provided and also to link skilling with the demand centers. Today, apart from the efforts of the government in skill formation, there has been undying support provided by the private sector of the economy in all skill development efforts through the Public Private Partnership arm (National Skill Development Corporation). In India, there are mainly two types of vocational trainings available according to a National Sample Survey Organization (NSSO) report: Formal and Non-formal. Formal vocational training follows a structured training program schedule and leads to entitlement of certificates, diplomas or degrees, duly recognized by State/Central Government, Public Sector and other reputed institutions. While the latter helps a learner in acquiring some marketable expertise, which enables him/her to carry out her/his ancestral trade or occupation without any formal recognition. The government of India has been initiating its task of imparting vocational training and skills through two bodies: Public Industrial Training Institutes (ITIs) and Private owned Industrial Training Centers (ITCs). ITIs are mainly managed by Government while ITCs have the involvement of the private players. The management and the functioning of these institutions are regulated by Directorate General of Employment and Training (DGE&T). These agencies aim at providing different training schemes to meet the requirement of the learners which are:

- The Craftsmen Training Scheme (CTS)
- Apprenticeship Training Scheme
- Craft Instructors' Training Scheme (CITS)
- Advanced Vocational Training Scheme (AVTS)
- Supervisory/Foremen Training Scheme, Staff Training and Research Program

- Instructional Media Development Program
- Women's Training Scheme
- Hi-Tech Training Scheme

Apart from these structured and well designed specific vocational courses and schemes, there are many other parallel sources of accommodating such training like Khadi and Village Industries Commission, Tool Room and Training Centers (DC, MSME), National Manufacturing Competitive Council, Council for Advancement of Rural Technology, Society for Rural Industrialization, Ramakrishna Mission. In India, there has been a considerate contribution by schools operating at various levels in furnishing vocational education formally at 10^{th} and 12^{th} standard levels, though this form of education is parallel to the conventional form of education but still schools have extended their appreciable support in this direction. In 2016, National Policy on Education came into being which was a massive programme for skill development has been embarked by the government, noting that 65% of the population is less than 35 years of age. The work force in the next decades need to be adequately educated / trained, for them to play a part in nation building. This Committee's report recognizes and stresses the urgent need to sharply increase quality in our education system, which includes skills training and vocational education, for which new innovative comprehensive programs need to be rolled out without delay. In the views of Thompson, (2002) vocational education aims at the development of human abilities in terms of knowledge, skills and understanding so efficiently in carrying on the activities in the vocational pursuits of his choice. Winer, (2000) in his contribution opined that vocational education is designed to develop skills, abilities, understanding attitudes, work habits and appreciation encompassing knowledge and information needed by workers to enter and make progress in employment on a useful and productive basis. It is an integral part of the total education programme and contributes towards the development of good citizens by developing their physical, social civic, cultural and economic competencies.

Sustainable Growth and Vocational Education

It cannot be denied that there has been significant magnitude of interest shown in Vocational Education and Training (VET) for last many years among the national and international policy

makers. There has been a considerable rise in the policy and programmatic interest in VET's role in development. Since VET is an important tool for a country's social and economic development, thus there have continued to be both policy and strategic developments in this field. Academic domain of our country has an important component i.e., VET and its contribution in the development and education field is well recognizable. Basically, the inherent objective of VET is to offer an alternative educational path for youths and adults who wish to learn and grow professionally and at the same time provides qualified manpower needed across all sectors of the economy. Since Vocational Education always focuses on imparting training of the technical skills and practical aspects with a theoretical base, thus it requires timely updating of course materials, pedagogy, and assessment methodology and evaluation process to meet the changing needs of the employers in the market force. This very feature of VET establishes a base for continuous teaching and learning for national sustainability development as its main objective is to continue to empower human beings, improve the quality and the spread of the knowledge base of the learners and thus enhance the human resource of a country. The possibility of choosing the type of learning content according to a student's learning interest and performance has given this component of education an incredible edge over other educational structures in terms of sustainability and in this regard, the subjects and their curriculums are carefully prepared to be practical in nature to ensure the achievement of their set goals and objectives. The idea of providing vocational training and adequate scientific and competence help the learners to constantly be a part of the workforce and sustain themselves in the process of economic growth of the economy. The main intention of vocational and technical training is to provide the possibility of skill acquisition, skill enhancement and enhancing entrepreneurship among the learners. Through these laid objectives, the core objective of VET is to increase the efficiency of the participants and build on the productivity base of the labor force of the economy. As we are aware of the fact that skilled human resources are the primary asset of a country, thus it is important to put the existing human potential into use by empowering them, enhancing their intellectual, academic, technical and knowledge based abilities and making them a part of sustainable economic growth process in an efficient and effective way. There is no wonder that this requires focused policy timely guidance and reform process with regulatory framework for improving the quality of the technical and skill based education and also to create more

opportunities of partnerships with the private sector. For sustaining the increasing rate of economic growth, it is essential to expose the existing and potential workforce to many skill development and acquisition programs respectively. Even the literature in this area clearly reveals the relevance of vocational education in the process of sustainable economic growth. Kehinde and Adewuyi (2015) believes that Vocational and technical education has been integral part of national development strategies in many societies because of the impact on human resource development, productivity and economic development. It holds the key to national development of most nations. In the same vein, Vijay (2017) states that, Technical Education is instrumental in making the remarkable contribution to economic growth of the Developing Countries by way of suitable manpower production according to the needs of the Industry, Society and the Global World as a whole. Ajayi, Arogundadade, and Ekundayo, (2007) also suggests that the neglect of vocational and technical education in the area of adequate personnel, financial support and facilities to encourage vocational and technical education are robbing the nation of the contribution their graduates would make in the economy. Furthermore, Asogwa and Diogu, (2007) maintained that there is an urgent need for the people's attention to be redirected towards self-reliant and sustainable means of livelihood which vocational and technical education provides. So, given the literature base, it is very important to take note of the need for research and development in VET in the way of theoretical exploration and that requires complete attention to the provision of the technological knowledge with the help of continuous infrastructural development and sustained investment in human capital resource.

Impact of vocational education on Indian economy: an econometric analysis

The previous section has examined how vocational education can help in achieving sustained economic growth and hence sustainable development in an economy. It has always been observed that if an economy wants to achieve higher and yet sustainable growth then it must work in the direction of providing employability (even for the neglected classes or unnoticed groups) which can happen, only when, the focus of education is to provide the updated set of knowledge and required domain of skills along with structured academics. There has to be a uniform platform for providing the much needed technical know-how and training which would

be followed by direct employment and utilization of acquired skills of the learners in the respective fields. This form of education would help an economy to look for a better and sustainable future in the form of utilization of its human resource.

The study done in this section focuses on understanding the vocational education as a directional path towards sustainability in learning, employment and thus economic growth in the context of Indian economy using the tools of regression analysis. Taking into account the huge literature done on the determinants of economic growth such as Jacob(1984), Barro(1998), Dewan & Hussein (2001), Benito (2009), Chirwa & Odhiambo (2016), etc., this econometric exercise takes into account the following as the main determinants of economic growth of the Indian Economy:

- *Consumption Expenditure*: The more is the expenditure on consumption in an economy, it is expected that the economic growth would also increase. This means that there is a positive relationship between these two variables. It is measured by Household final consumption expenditure (% of GDP) and data source is The World Bank.
- *Government Expenditure*: Higher the level of government expenditure, higher would be the level of economic activities in an economy and hence higher economic growth. It is proxied by General government final consumption expenditure (% of GDP) and data source is The World Bank. We expect the sign of this variable to be positive.
- *Investment*: A high level of investment implies more capital goods in the economy which would increase the labor productivity. As labor becomes more efficient, more goods and services are produced in the economy leading to higher GDP and hence higher economic growth. It is measured by Gross capital formation (% of GDP) and data source is The World Bank.
- *Trade in goods and services*: It has been perceived that with the opening up of the economy and liberalization of trade restrictions, the developing countries have grown over the years, especially India. Thus, International trade has brought a deep influence on the economic growth of a country. We expected therefore the sign of the coefficient with this variable to be positive. In this study the variable is taken as the sum of exports and imports of goods and services measured as a percentage of Gross Domestic Product (GDP) and data source is The World Bank.

- *Inflation*: Inflation to some extent measures macroeconomic stability of an economy. Thus, a lower inflation rate is expected to increase economic growth of the economy. The variable is measured by annual average Consumer Price Index (%) and data source is The World Bank.
- *Vocational Education*: Various studies have cited a positive impact of vocational education and training on the growth of an economy and hence on its sustainable development. This variable is thus expected to be positively related with the economic growth of a country. It is measured by the total number of students enrolled in vocational programs at public and private secondary education institutions and data source is The World Bank.
- The dependent variable of the study is the *Economic growth of Indian Economy* which is captured by GDP of India at Current US $ Million. The data source is the World Bank.
- This exercise is a time series exercise with time period from 1971 to 2015.

Using the Econometric Software GRETL for the given time period, a linear regression model (corrected for serial correlation) of Economic Growth on the six explanatory variables gave the following estimated model:

Model: OLS, using observations 1976-2015 (T = 40)
Dependent variable: GDP (Current US $ Million)

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Constant	−8.39731e+06	2.08309e+06	−4.0312	0.0003	***
Vocational Education	0.796179	0.106085	7.5051	<0.0001	***
Inflation	−14773.7	5896.89	−2.5053	0.0175	**
Trade (% of GDP)	22319	4626.96	4.8237	<0.0001	***
Gross Capital Formation (% of GDP)	69910.9	21725.6	3.2179	0.0030	***
Govt Expenditure (% of GDP)	67740.5	33710.4	2.0095	0.0530	*
Consumption Expenditure (% of GDP)	82503.3	20726.5	3.9806	0.0004	***
dGDP(Current US $ Million)(-4)	1.00565	0.397045	2.5328	0.0164	**

Mean dependent var 645177.7 S.D. dependent var 604511.5

Sum squared resid	4.64e+11	S.E. of regression	120469.0
R-squared	0.967414	Adjusted R-squared	0.960286
F(7, 32)	135.7182	P-value(F)	5.96e-22
Log-likelihood	−520.2606	Akaike criterion	1056.521
Schwarz criterion	1070.032	Hannan-Quinn	1061.406
Rho	−0.008076	Durbin-Watson	1.929387

*Note: * means significant at 10%, ** means significant at 5% and *** means significant at 1%.*

Results

The regression results shows that total number of students enrolled in vocational programs at public and private secondary education institutions which is a proxy for the vocational education is highly significant at 1% and positively related to the economic growth as measured by GDP, *ceteris paribus*, indicating that there has been a positive and significant impact of vocational education on India's economic growth. Consumption expenditure, trade in goods and services and Gross capital formation are also significant at 1 % and individually positively related to GDP, *ceteris paribus,* supporting the fact that greater the expenditure on consumption, trade in goods and services and investment greater will be the size of the economy and hence higher economic growth. The government expenditure is significant at 10% and is also positively related with the GDP *ceteris paribus* as expected. The inflation variable is coming out to be significant at 5% and as expected it is negatively related to GDP and hence economic growth of the Indian economy since it is one of the indicators of macroeconomic stability and greater the macroeconomic stability (lower inflation) higher will be the economic growth. The model is a very good fit as indicated by the value of adjusted R squared which is a high value of 96.02% and all variables are jointly significant since F-statistic is highly significant.

Thus, this analysis perhaps provides evidence that there has been a significant positive impact of vocational education on GDP and hence economic growth of the Indian economy and it may in fact help the economy to achieve sustainable development by providing a skilled and productive labor force increasing the overall development of the economy.

Challenges

The econometric analysis done indicates that increasing the levels of vocational education in the economy would lead to a positive impact on the sustainable growth of the Indian economy. However, this conclusion rests on the fact that this growth is maintained over time which would happen when the vocational education is not only integrated with the formal level of the educational system but also provided to all the sections of the economy with a wide coverage of high quality skilled education.

Presently in the Indian economy, the initiatives taken by the government to introduce vocational education subjects in schools are not sufficient. The reach of the programme is also inadequate especially in terms of reaching the most deprived sections of the economy and it is not yet properly integrated with the formal educational system. Apart from these, there is a lack of basic educational infrastructure at the school level to provide such skilled based courses due to lack of providing the requisite workshops, shortage of trainers and inadequate industry linkages to impart high quality and relevant vocational skills (National Policy on Education, 2016).

Conclusion and policy recommendations

This paper has attempted to analyze the impact of vocational education in India on its economic growth and hence on its sustainable development. Vocational education is the core need of the hour given the market situation as it enhances the productivity of the learners who make themselves a part of the vocational educational programs. To provide evidence to this fact, an econometric exercise has been done which showed that by increasing the levels of the vocational education at the secondary educational system in the economy, there has been a positive impact on the economic growth of the economy. However, this growth needs to be maintained in order to achieve sustainable development in the future. For this, Government has undertaken various initiatives to raise the level of vocational education but these steps are not coming out to be adequate in terms of both coverage and corresponding supporting infrastructure to impart this kind of educational system.

Thus the government needs to further deepen the reach of its skills based programs covering all the sections of the economy by setting up as many vocational skills centers and spreading

enough awareness among the students about the vocational skills based career opportunities. It also needs to integrate the vocational education with its formal level of the educational system and the courses offered as vocational should be reviewed by the concerned authorities and improved from time to time to ensure better quality and sustainability. Government should ensure that sufficient infrastructure is provided at the school and higher levels to impart high quality of the skilled based courses and that necessary workshops and training to support vocational education are held from time to time in such institutions. Also, the vocational centers set up by the government should be able to provide those technical and skilled courses which matches the career and employment choice of the individual living in that particular region. These measures would help in raising the quality, coverage and the awareness about the vocational skilled education in the economy which would in turn help our economy to achieve a higher inclusive growth over a long period of time.

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