

Skilling and Growth Nexus - Measurement, Policy and challenges in the context of India

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Abstract

“If we have to promote the development of our country then our mission has to be skill development and skilled India”
... Prime Minister Narendra Modi

Skill is the capability to do something nicely, create something new and innovations leading from existing talent, training, or practice. It is also the ability to provide solutions to the different kind of problems and situations. Developments of these skills are very important for the economic prosperity of the country. Skilling is considered to be one of the most important factor as it certainly leads to economic growth by building capability and making economy self-sustainable. Skill and the right set of knowledge are also regarded as the key factors for the growth and social upliftment of any country. It is noticed that the countries having skilled labor force find it easier to adjust in the competitiveness nature of world of work. Skilled labors are not prone to changing work environment of world.

India is on the verge of becoming a knowledge economy. It is therefore indispensable to identify the right set of skills required to be imparted to labor force and lead them towards capability development. To accomplish the very objective of the economic growth, the Gross Domestic Product (GDP) of India has to grow at a rapid pace of 8% to 9% consistently. This will require some major changes and significant improvement in infrastructure sector, agricultural sector, manufacturing sector and also need skilled labor force to fasten the process of goods and services delivery.

Major challenge India withholds is not only to impart skill leading to economic prosperity but to soak in the excess supply of labor coming from rural sector. India is a labor intensive country and there is labor availability in abundance. With the limited training infrastructure, it is indeed a challenging task to train this vast number of laborers in India and turn them into productive skilled workforce. Even the lack of awareness among labor force to go through training program is other issue. As per the National Skill Development Mission (NSDM) Document, there is a shortage of the trained laborers in India. Only 2.3 percent of the workers in India went through formal training. If we look at the statistics of labor force attending training for some other country, it was like sixty-seven percent in United Kingdom, seventy-five percent in Germany, eighty percent in Japan and so on. All these countries are already a developed nation. This fact reveals an interesting finding that the pool of Indian workforce mostly lacked requisite skills and was mostly unemployable. High percentage of labor receiving training makes them skilled and capable. It also shows a pattern of a linear correlation among developed nation workforce and skill.

Key words: Skill; Skilling and growth

Introduction

“Education, vocational training and lifelong

learning are central pillars of employability, employment of workers and sustainable enterprise development” - International Labor Organization

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Skills and knowledge are key drivers of macroeconomic growth and socioeconomic stability. All those country characterized by advanced level of skills adjusts more efficiently to the challenge and prospects of the world. In a knowledge economy-knowledge leads to economic growth- it is imparted, acquired, transferred turning economic growth into development. A knowledge economy constantly modifies its education system and incurs huge amount of investment to modernize education as per the trends, needs and requirement of the changing economy. Far-reaching adjustments and changes are required right from teaching stage to learning stage. These adjustments are essential to improving the skills. “Skills” not only includes traditional hard skills and IT competencies but also the “soft skills” which are knowledge discovery, problem solving, spirit of enquiry, adaptability, self-learning, social empathy and motivation to work.

Skilling is the way to continuously improve productivity. Capability building via skilling makes economy self-sustainable. Skilling and entrepreneurship complement each other and lead to economic growth.

India is well poised when it comes to its demographic dividend and can use this towards accelerating its economic growth. However, the excess supply of labor has to be turned into a skilled workforce for fetching a gainful employment. The demographic dividend also plays a very crucial role in the nexus between skilling and growth. If we

look at India now, it's working age population is growing faster than its young age population and the old aged population. This increased percentage of working class population in the “demographic dividend” will benefit any economy socially or economically. The economic growth will be boosted up as the higher numbers of labors gets productively employed, ultimately leading to higher wages. This in turn will lead to higher savings and therefore higher investment. Higher investment will expand the economic activities and India will be following a path to be a developed nation from developing one.

Research Objective:

The research objectives addresses following question:

- whether correlation exist between skilling and growth
- Challenges in implementation of Skilling
- To understand policy measures taken towards skilling and translating it into economic growth

Literature review:

There have been various studies conducted to know the trends and correlation among Human capital (skilling) and economic growth right from 1980's. The quantitative association among these two variables were found to be positive and significant. Summary of the some of the empirical research conducted are as follows:

Table: - Literature Review analysis

Authors	Country	Period	Results
Romer	112 countries	1960-1985	Increase in human capital leads to surge in Growth
Benhabib and Spiegel	78 countries	1965-1985	
Freire-Seren	72 , 65, and 22 countries	1960-1990	
Ljunberg and Nilsson	Sweden	1870-2000	
Aka and Dumont	USA	1929-1996	
Haldar and Mallik	India	1960-2006	

Romer conducted the study to assess the impact of skilling in his endogenous growth models. His study suggested that literacy rate has been significantly associated with the rate of investment and showed it indirectly lead to economic growth. Benhabib and Spiegel conducted the study of impact on skilling (Human capital) on factor productivity. There was again a statistical significant result showing positive correlation among the variables. His analysis can be broken into two parts. Freire-seren analyzed the link between the human capital and how it leads to growth and development in various countries. His findings were that level of income was positively and significantly associated with human capital buildup. Ljunberg and Nilsson studies and finding suggested that human capital because of the education where the primary reason for continuous growth during 19th and early 20th century for Sweden. Higher education often leads to growth. Aka and Dumont tried to study howskill, knowledge education experience of an individual leadto growth eventually leading to development over USA during the period of 1929-1996. Linear relationship between human capital variables and economic growth was observed. In the Indian context, Haldar and Malik tried to study the investment behavior in physical capital and human capital and the output. The findings were interesting. The result showed that investment in physical capital had no long run and short impact but investment in human capital had significant and positive relation to long run per capita GNP.

Research Gap:

The study is limited and confined to the India's macroeconomic environment. Whether skilling leading to growth and established nexus has not been studied in global context. In data analysis, the only indicator used to proxy skilling is employment data. This is done on assumption that only skill people would have got employed.

Research Methodology:

Secondary data sources (research papers, journals, articles, and magazines) were used to study the defined objectives. The research design is more of descriptive in nature. Having the clear set of objectives, the research design was formulated to conduct the in-depth analysis of the study with accuracy.

The data for Human capital in term to skilling is collected from CEIC website. The data for skilling is proxy by data for number of person employed in India from 2000 to 2011. In other words, employment number were taken as a parameter for skilling on the assumption that only skilled workforce were employed. The GDP data for measuring economic growth for same time was taken from Wikipedia. The standard OLS regression framework was used to assess the relationship between Skilling and growth rate. The data set look like as follows.

Year	GDP (in bil. US\$ PPP)	GDP (INR)	Employed person (Number)
2000	2,077.90	2,077,900,000,000	27,789,200
2001	2,230.40	2,230,400,000,000	27,205,500
2002	2,353.10	2,353,100,000,000	27,000,300
2003	2,590.70	2,590,700,000,000	26,442,700
2004	2,870.80	2,870,800,000,000	26,458,400
2005	3,238.30	3,238,300,000,000	26,992,000
2006	3,647.00	3,647,000,000,000	27,277,000
2007	4,111.10	4,111,100,000,000	27,549,000
2008	4,354.80	4,354,800,000,000	28,166,648
2009	4,759.90	4,759,900,000,000	28,708,000
2010	5,312.40	5,312,400,000,000	28,999,000
2011	5,782.00	5,782,000,000,000	29,579,000

Analysis& Findings:

The findings of the study conducted were that employment was positively related to growth rate. The results were statistically significant and showed direct relation between the economic growth and employment data. Increase in employment will lead to increase in economic growth. R² value shows the proportion of

change in the dependent variable explained by independent or explanatory variable. In my data growth rate is the dependent variable and employment is the explanatory variable. Since, only one factor was taken as an independent variable, 70 % of the variation in the growth is explained by employment factor. The P value is less than 0.05 and therefore the result is statistically significant and the regression model is a good fit of data.

	Slope Coefficient	Significance(P value)	R square value
Intercept term	-2.55296E+13	0.0015**	
Employed person	1052735.124	0.00062**	0.70

Further Discussion and Findings

Skilling and growth nexus:

There seems to be high correlation among the proportion of skilled employees and the growth and development of a nation. Inclusive economic growth

leads to more employment generation, which absorbs skilled labor and in turn further trigger economic growth. There are various macro-economic factors leading to economic growth. Out of the various macro-economic variables or determinant of the growth, Ex-Vice President of India Md. Hamid Ansari made a point that that Human capital would be the primary

determinants of the economic growth and the overall progress of the country. Skill development creates a pool of productive workforce and widens the productivity of the existing workforce. This leads to inclusive growth as more of the country's youth population are employed. As more working age population gets absorbed in the formal or informal sector, they will have their means of earning. The quality of life or rather says standard of living will get better. They will contribute to the economy in the form of tax and their dependence on government help programs will reduce. The government can carry out its fiscal operation with much of ease and layout more development programs. If the economy is self-sustaining and well-functioning, the GDP growth will be evenly poised showing good numbers and economy will move swiftly. The GDP to Debt ratio will improve and so the balance of payment giving huge acceleration to economic growth.

India's demographic dividend can be used to its advantage with proper skilling:

India has now become the 5th largest economy of the world. The GDP growth rate in the year 2012-2013 was

5.6%, going up to 7.6% in 2015-2016, and 7.2% in the last quarter of 2018-19(Wikipedia data).However, this fast economic growth, contrasts with an unorganized labor market. There has been certain gap in creating inclusive growth, improving productivity of labor, and a formal labor market. The demographic dividend of India gives it a luxury to accelerate this economic growth and move towards becoming a developed nation. Investment in the skill development program will ensure that economic growth is more inclusive as it will fetch a gainful and productive employment to most number of people.

Current skilling analysis:

According to the India skill report of 2015, India still lacked on the developing the skills of its workforce. Out of the total participants trying to enter the labor market, only 1/3rd of them were having the appropriate skills required for the job. However, there have been some improvements over the last few years. The 2019 skill report found that employability has continued to rise and it has increased from 33.95% in 2014 to 47.38% in 2019.

Table: year employability percentage since 2014

Year	Employability percentage
2014	33.95%
2015	37.22%
2016	38.12%
2017	40.44%
2018	45.60%
2019	47.38%

Source: Skill India report 2019

Skill requirement of India latest by 2022:

Because of abundantly available human capital, India has become one of the firmest nation turning into knowledge economy. With its strengthening knowledge economy base, there will be massive

requirement of the highly skilled labor force across major sectors like health care, financial services, IT, pharmaceuticals, etc. Further, the “Make in India” scheme under the flagship program is expected to give a big push to the value added industries and there will be requirement of high

skilled labor to meet the requirements of high-end industries.

As per the research conducted by the National Skill

Development Cooperation over the period of 2010-2014, it was reported that by 2022 there will be requirement of additional 109.73 million skilled workforces across 24 major sectors in India.

Table: Additional workforce necessity across 24 different sectors by 2022

S. No	Sectors	Employment figures for 2013(million)	Forecasted Employment by 2022(million)	Additional requirement from 2013-2022(million)
1	Auto and Auto Components			
2	Beauty and wellness	10.98	14.88	3.9
3	Food Processing	4.21	14.27	10.06
4	Media and entertainment	6.98	11.38	4.4
5	Handloom andhandicraft	0.4	1.3	0.9
6	Leather and leather goods	11.65	17.79	6.14
7	Domestic help	3.09	6.81	3.72
8	Gems and jeweler	6	10.88	4.88
9	Telecommunication	4.64	8.23	3.59
10	Tourism, hospitality and travel	2.08	4.16	2.08
11	Furniture and furnishing	6.96	13.44	6.48
12	Building construction and real estate	4.11	11.29	7.18
13	IT and ITES	45.42	76.55	31.13
14	Construction material and building hardware	2.96	5.12	2.16
15	Textile and clothing	8.3	11	2.7
16	Health care	15.23	21.54	6.31
17	Security	3.59	7.39	3.8
18	Agriculture	7	11.83	4.83
19	Education skill development	240.4	215.6	24.8
20	Transportation and logistics	13.02	17.31	4.29
21	Electronic and IT hardware	16.74	28.4	11.66
22	Pharma and life sciences	4.33	8.94	4.61
23	BFSI	1.86	3.58	1.72
24	Retail	2.55	4.25	1.7
	Total	38.6	55.95	17.35
	Removal of Duplication in retail sector	461.1	581.89	120.79
	Total requirement	10.37	21.43	11.06
		450.73	560.46	109.73

Source: Ministry of skill development and entrepreneurship

As per the India Skill Report, 2019 it was estimated that the Indian workforce would reach around 600 million by 2022 from the current level of 473 million, i.e., an increase of 27 percent. This increase in work force would mainly be because of a well-functioning and expanded Indian domestic market and adoption of new technologies like robotics and Artificial Intelligence (AI). The automation technology has reached a high level

and therefore affects the Indian IT sector and the business process outsourcing sector. These sectors are the primary players for creating additional pool of employment and are expected to create or hire 2.5 million to 3 million more workers by 2025. However, the pre-requisite condition remains the same that the workforce should have suitable skilled as per the requirement of the companies. Between 2014 to 2017, increased government

spending, massive hiring by IT, and increasing trend as an independent worker and entrepreneurship fetched gainful employment to almost 20 to 26 million people. Therefore, skill development has to continue for the increasing workforce to get absorbed in the market and ultimately leading to growth trajectory and overall development.

Challenges in the implementation of successful skilling initiatives:

Investment in skilling and development will create a pool of productive workforce and widen the productivity of the existing workforce. The Boston consulting group conducted a research where they have discussed the mismatch problem of demand and supply of labor faced by the world. It was reported that the world will require 47million more people by 2022 and India will have an excess of supply of labor with an estimated number of around 56 million. Now if these workforces are equipped with the appropriate skills, the supply gap can be filled giving huge economic boom. India has the problem of plenty, which needs to be resolved by skill development for turning these into productive and employable workforces.

However, there are many challenges in exercising this skilling and implementing it:

- The first and foremost challenge is to create stimulus for the economic growth, which could absorb the opportunity of demographic dividend India has.
- Second most important challenge is to either up-skill or re-skill the working age population lying between ages 30 – 59. Globally, it is believed that 75 % of the workforce will require adding new skill mainly in automation.
- It is expected that by 2022, nearly 1.25 million

people ageing 15-29 will join the workforce every month. The working age population of India ageing 19 to 59 is expected to expand, as 47 million more people will join the workforce. This demographic dividend is expected peak by 2040. Overall nearly 70 million workers are estimated to enter the workforce during 2018-2022. These people have to be skilled India has to reap the benefits of its demographic structure.

- Nearly 468 million of workforce in India requires up-skilling and re-skilling. The major challenge here is that almost 92 % percent of the Indian labor force population constitute in the informal sector.
- Almost half of the workers in India have educational attainment below secondary school and no vocational schooling. It was found that 31% of the workforce was illiterate, 13% percent were having primary education and only 6% percent were college graduates.
- The unemployment rate for the graduates ageing 20-24 was reported to be 29%, between 25-29 to be 12% and for 30-34 was 4%.
- In addition, the participation of women in labor force needs to be improved. In the urban area, women labor force participation was reported to be 21% compared to 36% in rural areas. Between 2005 and 2012, almost 15 million women dropped out from the labor force participation.

As regards implementation of skilling, problem is that the capacity of the Government/private training institutes is limited to absorb the growing working age population of India. Further, the training programs have eligibility criteria, which require minimum education until class 8th. This excludes illiterate working population from

receiving training. Moreover, the curriculum and the course pattern of training programs are not in alignment with the expertise and experience required at working in companies and the market behavior. Lack of participation by private sector enterprises in training also makes apprenticeship training for students far out reaching. These are the major obstacles in meeting the training requirements of working population of India.

Generation of productive and gainful employment opportunities depends on the availability of skilled labor force, which is possible by sustained investment in skill and development leading to enough job creation by entrepreneurship. Policy measures are required to fill the void space between skill deficit and the employment generation. Range of policies will be required to address the issues like education system, cognitive, technical, vocational and behavioral skills, on job training in both formal and informal sectors.

Government initiatives:

The government has taken various policy measures to address the problem of lack of skills in the labor force. The Ministry of Skill Development and Entrepreneurship has been established by the central government of India to boost up the entrepreneurial skills of the workforce. Some of the entrepreneurial training programs are as follows:

- Startup India learning program: free online learning classes and promoting bank finances for the startup venture.
- Deen Dayal Upadhyay Swaniyojan Yojana- promotes entrepreneurship among self-help groups and women. This program provides skill for livelihood generation and self-employment with the availability of credit access through government backed loans.

- Pradhan Mantri Kaushal Vikas Yojana- ensures self-employment for those unable to fetch secured wage employment.

Apart from this entrepreneurship, training programs, various flagship programs have also been launched - Make in India, Start-Up-India, and Digital India. The main motive of these flagship programs is to spur employment generation by creating productive and skilled micro, small and medium enterprises. These will create huge demand of labor and job creation.

For training, PPP (Public private partnership) model has been introduced where the training provided is being funded by private enterprises. The government has also introduced the Apprenticeship Act where private entities are compulsorily supposed to hire certain number of apprentices and train them. The government is also taking initiatives to make international collaboration with institutions like the UN prioritizing on skills, entrepreneurship and job creation programs.

Conclusion:

For any economy to be competitive and accelerates its existing growth rate, skilled workforce plays a very crucial and important role. Skill development is regarded as the prominent factor for the growth of the economy. There is a requirement of the collective determination from all the participants like training institutions, government, and workforce to make it a successful program. The policy has to be far reaching and if reached to larger audience, will have greater impact on employment generation. This will not only boost up the functioning of the economy but also provide skilled labor for the flagship program like Make in India. Vocational training and PPP model also play their part in imparting skill. NSDC has made recent progress in developing better training

infrastructure by more public private partnership. There has to be emphasis on the skill India entrepreneurship as it leads to creation of massive employment opportunities. The schemes like Start up India and Stand up India need more promotion for maximum awareness among people and so that they can be the beneficiaries of the model. India is moving towards becoming a Knowledge economy and therefore it is very important to have a skilled work force and the skills imparted have to be very much in alignment with needs and requirement of the modern day business.

Suggested policy measures and other Recommendation:

The favorable conditions for sustained and stable economic growth can be created by imparting the required skills to the workforce for fetching gainful employment. There is no reason why a country cannot become an aspiration nation fulfilling the dreams of millions of its citizens. However, the challenges faced are numerous and require additional policy measures:

Government policy measures:

- De-regulation of the labor market is required. Formalisation will provide incentive to the private entities to invest in up-skilling their workers. The workers also find it in their interest to be up skilled apart from having better working condition and the social security benefits. There should not be any legal hindrances in conversion of informal jobs into formal sector jobs.
- There should be investments in the sectors that seem promising for employment generation- directly inside the sector and indirectly even outside the sector. The government should promote ease of doing business and structured

investment.

- The focus should be on the inclusive growth where investment in skill and development will provide gainful employment to the massive unemployed work force.

Skill provider's policy measures:

- The existing and new workforce should be trained as per the needs and requirement of the modern day functioning of industry and the business. It is very important to determine the type of skills required which can actually break the vicious cycle of low skilled labor and lack of job creation.
- Analysis and effective method of performance evaluation are very important parts of training as these are pre-cursor for up-skilling, and resultant growth.
- The concept of on the job training has to be taken more widely not just be applicable to large firms. It has to be applicable to smaller firms and in informal sector as well.
- The skilling institutions and the education system need to be work in alignment with the trends and the skills and competencies required by industry. This could be followed effectively by measures like Apprenticeships act, and on the job training measures.
- The education system should be revised gradually based on the changing nature and trend developing in the economy. The education should also impart social and behavioral skills along with higher cognitive skills. Vocational education needs revision to be up to the workforce requirement.

Policy measures from employment perspective:

- There should be increased participation into practices like apprenticeships act, and on the job training measures.
- Firms should be following the corporate social responsibility.
- Employers should be continuously involved in up-skilling and re-skilling the existing workforce and providing training to the new entrant in the work force.
- Modern labor and human resource practices are expected to be adopted by the employers.
- The employers should be supportive to their employees and not lay them off during economic crunch.

These policy measures can actually lead to creation of a virtuous cycle of better employment opportunities by spurring economic growth, spurring job growth in companies and ensuring that the labor force has the desired skills for getting a job. The policy measures should focus on the gap prevailing between the education pattern and needs of industries. There is a lack of market for skills, which requires heavy investment in skill and development. The data analysis also showed that is a strong correlation between skilling and employment. Once, landing up into productive gainful employment, one can improve their standard of living leading to social development of a nation. They also contribute to the economic development of the country as they do not withstand as a liability dependent on the government programs for their sustenance. Higher the skilled labor force, they bring economic prosperity.

12. Scope for further research:

- Study is restricted to Indian macroeconomic environment only and challenges and policy measures are discussed in same context. Skilling and growth nexus research can be done on a global level and recommendation can be provided for the same.
- There was only one indicator which was employment data serving as a proxy for skilling. There can be various research where more than one independent variables could be taken as proxy indicator of Skilling
- This research study is primarily based on secondary data. There can be research based on mix of primary and secondary data.

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