

HUMAN CAPITAL AND INDIA'S GROWTH STORY: A POLICY PERSPECTIVE OF SKILL FORMATION

Bir Singh

Department of Economics, Delhi College of Arts & Commerce, University of Delhi, India

Email : birsing@gmail.com

ABSTRACT

At present, economic growth is regulated by the forces of the global production system. The structure and pace of industrial production globally now is pushed by technological progress, economies of scale, and availability of skilled manpower. The experience of industrial development of the Western world attests to the inevitability of technological growth. However, the countries of the East Asian region could achieve industrial transition through human capital formation largely.

The policy makers of the region charted their growth stories along human resources only. Economic growth of countries like Japan, South Korea, Singapore, and China has come mainly from human capital augmenting technology. It was attributed to the endogenous growth strategy that they had adopted.

India's achievement on human development has been quite abysmal not for its population size but for lack of political concern for inclusive growth. The very focus of political leaders across parties has concentrated on winning elections every five years with populist policies. The wastage of demographic dividend in absence of human capital formation policies is one such disaster.

India's labour market informality does indicate that the economic situation of the masses is vulnerable and it is partly due to the shortage of skills that are relevant for the global production system. This is an alarming situation for when it comes to India's macroeconomic performance. But what made it become so alarming? In this paper, we attempt to understand as to why the policy makers couldn't give adequate priority to human capital formation for boosting economic growth.

Keywords: Human Capital, Economic Growth, Endogenous Growth, Informalisation

INTRODUCTION

Even as human capital is pivotal for achieving high inclusive growth, India's policy framework hasn't accorded due attention to skill formation for labour absorbing structural transformation. It constrains the growth of total factor productivity that determines overall economic prosperity of a country. In addition, low skill endowment in labour force accounts for high informalisation in the country (Singh, 2023).

Low base of the skilled manpower is one of the dominant factors that can explain the macroeconomics of low manufacturing employment growth in India. In the light of wage setting models of macroeconomics that attribute the wage determination to the strength of collective bargaining argues that that any segment of labour may enjoy in the labour market. Some macroeconomic models assign higher weightage to the institutions and inherent skills that labour possess greater bargaining power.

The skill endowment adds to bargaining power of labour in the globalised world. A world economic order that is known for weakening of labour market institutions. In the same way, labour organisations-trade unions- have become too weak to sustain protect labour interests in the face of labour labour displacing technology. The large informality does indicate that economic situation of masses is vulnerable and this vulnerability can be reversed of labour has acquired some kind of skill relevant for the modern industrial production.

Even as there exist multiple factors on demand and supply side are responsible for rising informal jobs in industrial sector, skill formation is one of the prominent factors that can turn the fortunes of the labour. While the demand side factors are constrained by forces of global production system, the supply side factors are policy driven and government's commitment to inclusive growth through expansion of organised industrial sector (Mehrotra et al., 2012). The countries that have effective institutions and policies to raise the pool of skilled manpower are found to have realised the full potential of manufacturing sector to generate employment and reduce poverty (Barro, 2001).

Indian economy suffers from severe shortage of skilled workers despite being one of the youngest nations in the world, with more than 54% of the total population below 25 years of age and over 62% of the population in the working age group (15-59 years). Human capital formation calls for building up a network of institutions¹.

It is estimated that only 2.3 % of the workforce in India has undergone formal skill training percent compared to 68% in the UK, 75% in Germany, 52% in USA, 80% in Japan and 96% in South Korea. Large sections of the educated workforce have little or no job skills, making them largely unemployable.

The country's population pyramid is expected to bulge across the 15-59 age group over the next decade. This demographic advantage is predicted to last only until 2040(Mehrotra et al., 2013). India therefore has a very narrow time frame to harness its demographic dividend and to overcome its skill shortage. This is an alarming situation when it comes to India's macroeconomic performance. But what made it become so alarming? We argue that policy makers, although designed industrial policies for rapid growth didn't pay the required policy attention to the human capital formation.

The rest of the paper is divided into three sections. Section 2 discusses the significance of human capital for economic growth by dwelling on endogenous growth theory. Section 3, elaborates on India's perspective on human capital led economic growth and its weaknesses. Section 4, suggests the way forward for human capital formation.

¹The success on this front depends on the synergy among all of them to achieve the target of "Skill India". Towards this, a separate ministry, the Ministry of Skill Development and Entrepreneurship was created in 2014 and thus the National Skill Development Mission was launched with a target of training 300 million people by 2022. It has a mandate to introduce reforms in five key areas concerning these existing institutions, (i) curriculum flexibility, (ii) training equipment and workshops, (iii) pedagogy, (iv) industry interface, and (v) financial model.

HUMAN CAPITAL AND ECONOMIC GROWTH:

Theoretical Background

Even as economic growth resulting from human capital can enable a labour surplus country to enhance total factor productivity faster, it is the political economy that decides the nature of economic growth strategy. The earliest developed economies of the world chose to grow using exogenous growth models that required huge investment in the physical resources. It all began with the Industrial Revolution of England in the late 18th century. The resources were procured by force from the English colonies. However, this kind of privilege has ceased to be an option for the developing countries.

The countries that gained their independence in the middle of the 20th century had to struggle for resources to ignite their growth process. While the countries of the East Asian region chose to begin with human capital augmented growth strategy, India adopted exogenous growth path using capital intensive technology. Apart from laying down foundations of heavy industrialisation, it never thought of developing indigenous technology which could initiate a labour absorbing structural transformation.

In the current age of globalisation, economic growth and development is regulated by the forces of globalisation particularly the global production system. The structure and pace of industrial production globally now is pushed by technological progress, economies of scale, and availability of skilled manpower. The experience of industrial development of the Western world attests to the inevitability of technological growth. However, the countries of the East Asian region could achieve industrial transition through human capital formation largely.

The policy makers of the East Asian region countries had understood the importance of human capital early on and thus charted their growth stories along human resources only. Economic growth of countries like Japan, South Korea, Singapore, and China has come mainly from human capital augmenting technology (Fogel, 2008). Their model of growth has been endogenous as opposed to the exogenous growth strategies that were adopted by the developed countries of the world.

Table 1: Research and Development Expenditure as share of GDP(%)

Country	1996	2000	2005	2010	2015	2022
China	0.56	0.89	1.31	1.71	2.06	2.40
East Asia & Pacific	2.22	2.26	2.43	2.42	2.38	2.63
European Union	1.68	1.72	1.74	1.93	2.04	2.32
Hong Kong	na	0.46	0.77	0.75	0.76	0.99
Japan	2.69	2.91	3.18	3.14	3.29	3.26
Korea, Rep.	2.26	2.18	2.63	3.47	4.22	4.81
Latin America	na	0.57	0.60	0.75	0.80	0.65
Low & middle income	na	0.66	0.85	1.12	1.43	1.86
North America	2.38	2.57	2.46	2.65	2.65	3.32
OECD members	2.12	2.27	2.20	2.36	2.45	2.96
Russian Federation	0.97	1.05	1.07	1.13	1.10	1.10
South Asia	0.63	0.66	0.79	0.79	0.58	0.63
India	0.65	0.77	0.84	0.82	0.62	0.66

Source: World Development Indicators

In India's context, the government's commitment is reflected by huge government investment in heavy industries and basic infrastructure (Chakravarty, 1987). However, there was a complete absence of a blueprint for labour absorbing industrial growth. Except for stressing the need for a robust manufacturing sector, there was no long-term policy on the sector until very recently. Trade regime was introduced in India in absence of enabling pre-conditions of suitable industrial organizational structure, efficient human capital, and proper business environment. As regards industrial organisation, the majority of industrial enterprises are owned by family business houses.

The inherent structure is such that the monopoly of big corporate houses does not allow new entrants to get into it (Das Gupta, 2008). In addition, there are discernible concerns with quality of human capital which is positively related with expenditure on Research and Development as shown in Table1.

The role of human capital is very important for industrialisation. Any country aiming to become a competitive economy in the trade-led growth requires developing human capital. This calls for improving the quality of education and skill endowment (Mehrotra and Acharya, 2017). There are studies that have underscored the role of human capital for enhancing and sustaining economic growth in long-run (Lucas Jr, 1993; Mankiw et al., 1992). The slow industrial growth in India is a multi-dimensional phenomenon which depends on factors like infrastructure, technology, skilled manpower etc. So, in a way, the reforms have forced globalisation on the Indian economy (Mehta, 2011) as there was no level playing field for indigenous industries at the time of economic reforms. The industrial policy could not take care of this aspect.

The fate of industrial policy hinges upon a synergy of pre-conditions that exist in a country. Tregenna (2015) argues that Industrial policy sets the process of industrialisation in motion. It deals with tariff and trade policy, tax relief, subsidies, export processing zone, role of the state in ownership of industries etcetera. The success of industrial policy entails complementarity between trade policy, technological policy, labour market policy, and skills & education policy broadly.

It is necessary that not just scarce resources must be channelized to the manufacturing sector, but also the political economy of rent generated from the state support to industries must promote re-investment of such profits. India's industrial policy since the 1990s has been shaped by changing global political economy. The factors like FDI, trade, and technology caught attention in the industrial policy framework. The employment and wage growth were under their influence hence. However, a synergy across the policy spectrum did not emerge which is so crucial for improving industrial performance.

The centrality of Skill formation has attracted policy attention with a long delay only from the Eleventh Five Year Plan (2007-12) onward. Macroeconomic theories emphasize the criticality of pool of human resources for boosting economic growth (Romer, 1994). The policy makers designed a vast architecture of skill development which culminated in the form of National Skill Development Corporation in the year.

The current government has pushed it further with new passion. The institution/programme has completed roughly two decades (2012-2022) now. While it is relevant for realising the existing demographic dividend until 2050, the implementing agencies have to sharpen their targeted focus and renewed commitment.

The lack of skills renders them unfit for industrial production. *Ceteris paribus*, this weakness and incapability make them fall prey to contractual employment. In addition, there are many other handicaps that have constrained industrial development in India for many decades and may continue like this. As India's labour supply has very less proportion having technical education, it would be appropriate to look into the prospects of developing those industry groups that have been left by manufacturing giants in the Asian continent. This will gradually break the constraints from the manufacturing sector and would also sustain it.

While in the short run, labour productivity may be enhanced by adopting technology; the latter itself is created by human resources in the long run. In India, import of technology has been a central issue for industrial development since the very inception of economic planning. While it was procured through imports in the pre-reforms period, this dependence was met through technology transfer by inviting foreign direct investment in the post-reforms period.

The development of indigenous technology could not be achieved in the country even till date. The productive capacity of the manufacturing sector is going to be seriously affected by labour market flexibility in the long run. This is not good for prospects of industrial growth and overall economic growth in the future. We argue that policy makers couldn't create appropriate economic institutions for developing human capital in India and thus derailed the process of inclusive growth.

INDIA'S EXPERIENCE WITH HUMAN CAPITAL FORMATION

India's achievement on human development has been quite abysmal not for its population size but for lack of political concern for inclusive growth. The very focus of political leaders across parties has concentrated on winning elections every five years with populist policies. The wastage of demographic dividend in absence of human capital formation policies is one such disaster.

Srivastava (2020) argued that higher economic growth and reduction in poverty are caused by better pool of human capital. He further maintains that the elasticity of poverty reduction due to economic growth if human capital is evenly distributed. The poverty elasticity of India's economic growth has been low up to 1980s that has improved marginally in the post economic reforms period. In any case, outcomes of globalisation policies on an economy are determined by the degree of human capital there.

The policy focus on skill development began way back in 1956 with the adoption of the First Industrial Development Policy, 1956. The policy measures like Technical and Vocational Education and Training (TVET) and The Apprenticeship Act came into being. Later on, a network of Industrial Training Institute came into being since 1969 and a separate accreditation body known as The All India Council of Technical Education (AICTE) was set up in 1987 on the recommendations of the National Policy of Education in 1986. However, with introduction of the New Economic policy 1991, the skill manpower deficit was perceived to be haunting for industrial development and economic inclusion. The expansion of India's external economy informal jobs also grew that required semi-skilled workers. However, skilled manpower is in huge shortage in India even at present as revealed by Table 2.

In the post 1991 era, the economies of East Asia-China, Korea, Indonesia, and Taiwan have emerged as fastest growing industrial economies. However, total factor productivity did not grow homogeneously in all these economies. China's growth has come from growth of physical capital per worker and total factor productivity. Labour productivity growth was astounding too. The increasing labour force participation rate and working age population growth were also significant.

Whereas in the case of India and Indonesia, it was an increase in working age population and labour productivity growth that brought about per capita economic growth. The extent of labour productivity growth (7.4%) was highest for China. By contrast, it was slightly above four percent for the rest of the three countries. However, the reference year for each country was different. For India it was 1991, whereas it was 1967, 1973, and 1979 for Korea, Indonesia, and China respectively.

In the first twenty years of this reference period, the labour productivity grew on account of total factor productivity in all these countries. The contribution of total factor productivity was highest for China (3.5%) followed by India (1.7%), Indonesia (1.2%), and Korea (3%). However, the contribution of human capital to labour productivity was highest (.7%) for Korea, followed by China (.6%), India (.4%) and Indonesia (.2%) respectively. Looking beyond the first twenty years of the reference year, the contribution of physical capital to labour productivity declined for all three countries vis-a-vis India. It is quite interesting to know that the contribution of total factor productivity has increased even more in the case of China. Whereas it has declined for Korea marginally and turned negative for Indonesia. So, at the end of day, it is growth of total factor productivity that is important for raising labour productivity in the long run. In this respect, India has come a long way.

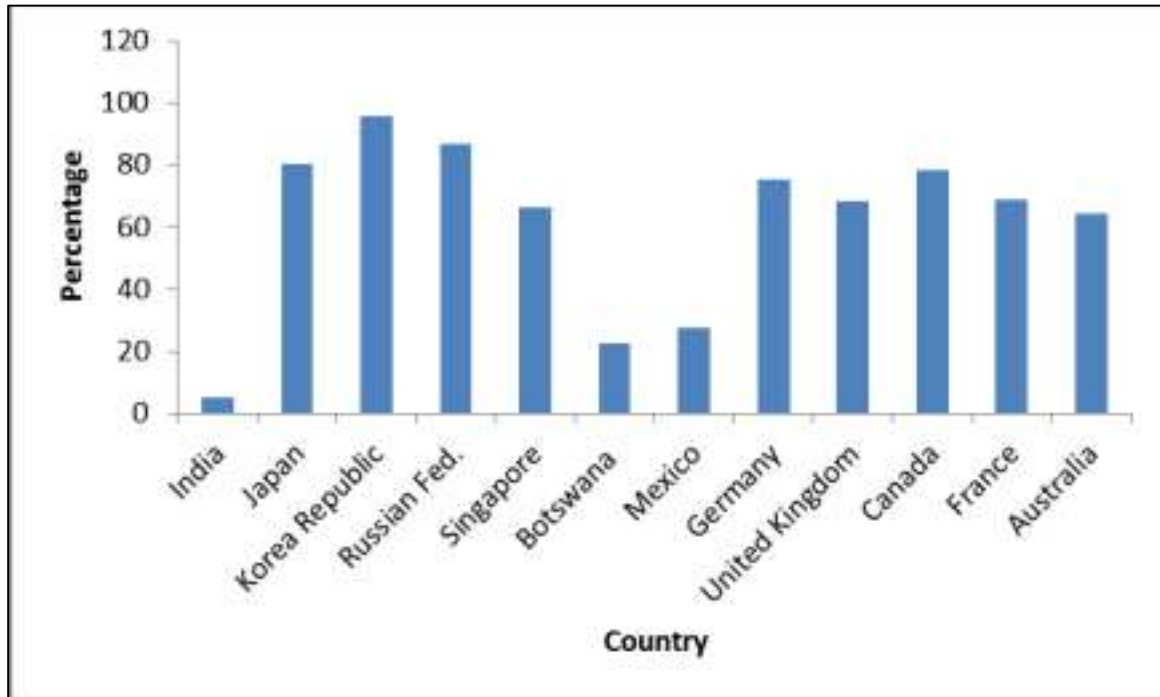


Figure 1: Share of technical manpower in India's labour force in the age group 20-24 yrs (2007)

The success on this front depends on the synergy among all of them to achieve the target of "Skill India". Towards this, a separate ministry, the Ministry of Skill Development and Entrepreneurship was created in 2014 and thus the National Skill Development Mission was launched with a target of training 300 million people by 2022. It has a mandate to introduce reforms in five key areas concerning these existing institutions, (i) curriculum flexibility, (ii) training equipment and workshops, (iii) pedagogy, (iv) industry interface, and (v) financial model.

The pool of skilled manpower is very small and insubstantial for meeting the demands of industrial development in the country as shown by Figure 1. This fact is endorsed by the India Skills Report 2015 which expresses deep concern over the lack of skill development. Of all the students applying for roles in the labour market, a mere one-third of the number had the appropriate skills to match the requirement of the employers. India's demographic dividend can be tapped fully provided sufficient employment is generated in the non-agricultural sector and skill levels of the workforce are upgraded (Mehrotra et al., 2013).

The National Policy for Skill Development and Entrepreneurship 2015² was launched with a highly ambitious vision to create an ecosystem of empowerment by speedy development of skilled manpower on a large scale and compatible with high standards of employers. In addition, it sought to promote innovation-based entrepreneurship to ensure sustainable livelihoods for masses. Its mission was to bridge the supply-demand mismatch in skilled manpower by generating demand for such manpower.

Sharma et al (2016) argues that skill development systems that are followed in China, Brazil, and Singapore are quite relevant for skill development in India. Singapore is one of the highly skilled countries in the world. The policy framework lends priority to skill development which makes it a preferred destination of the skilled workforce. Similarly, China has also achieved huge success in creating skilled manpower and its TVET system is a diverse and effective method of fostering technical and vocational manpower. It clearly mentions occupational standards and integrates education with economy. Appropriate laws ensure compliance of the industries to provide skill training and employment.

²The objectives of the policy among others ensure inclusive skill development of disadvantaged and marginalized groups and women workforce. It also seeks to promote commitment and ownership of all stakeholders. The policy is quite exhaustive in design and content. However, the realisation of outcomes depends on host of processes and implementing agencies. The factors like social beliefs, cultural practices, and social structure also matters.

Table 2: India's Status of Human Development in the world,1990-2021

Country	1990	2000	2010	2015	2021
Hong Kong(4)*	0.781	0.827	0.901	0.927	0.952
Singapore(10)	0.718	0.819	0.909	0.929	0.939
Korea (Republic of)20	0.728	0.817	0.884	0.898	0.925
Russian Federation(49)	0.734	0.720	0.780	0.813	0.822
Malaysia(61)	0.643	0.725	0.772	0.795	0.803
Brazil(79)	0.611	0.684	0.727	0.757	0.754
Thailand(64)	0.574	0.649	0.724	0.741	0.800
China(82)	0.502	0.594	0.706	0.743	0.768
Indonesia(116)	0.528	0.606	0.661	0.686	0.705
India(132)	0.427	0.493	0.581	0.627	0.633

Source:<https://hdr.undp.org/data-center/human-development-index#/indices/HDI>,

*-Ranking of each country in HDR Report 2021

In Brazil, a concentrated policy focus is laid upon technical and vocational education at the secondary school stage. The course structure gives priority to industrial needs for skilled manpower and provides cost effective technical education. The experiences of various countries that have adopted skilling programmes differ. Sharma and Nagendra (2016) have highlighted the role of major participants in the process of skill building namely, the state, corporate, NGOs and the communities and identifies the challenges at the grassroots level in the process of skill building. He has found that the passive role of the targeted communities is one of the stumbling blocks for the skill building process.

Diaz and Rosas (2016) concluded that the Job Youth Training Program Projovent, a skill development programme in Peru left a different impact on the targeted beneficiaries. It was found that skilling development is good for formal employment prospects though it varies across gender and age. However, they found no impact on socio-emotional skills. Under the programme curriculum, three months in-classroom technical training and an internship for three additional months were included.

In another impact evaluation study by Card et al(2011)a random sample of applicants was selected to undergo training after a year of skilling programme. The skilling exercise made a little positive effect on employment outcomes but a modest effect on earnings. Similar findings about the effectiveness of short term skilling programmes were made by González et al(2012).Hirsh Leifer et al. (2016) used a randomized experiment to evaluate an long term labor market policy for unemployed in Turkey. They observed that the impact of training on employment is positive, but close to zero and statistically insignificant. The impact was stronger in case of private trainers. The programme did not have any long-term impact on employment growth.

It has been observed that human capital shapes the migration process. Hagan and Wassink (2006) have shown that the transfer of formal human capital influences the mobility pathways of professional return migrants. They have found this based on a survey of 200 return migrants and 200 non-migrants in Mexico. Skilling will be deciding the future agenda of work in India. Timothy (2018) argued that skill delivery mechanism and programmes deserve higher policy attention if migrant workers from the Southern Asian countries namely Bangladesh, India, and Sri Lanka get jobs overseas. Islam (2019) argues that policy-makers will have to contend with the complexity of duality in the labour market and vast informal sector.

Chakravorty and Bedi (2019) have carried out an empirical study on the impact of skill development programme-Deen Dayal Upadhyaya Grameen Kaushal Yojana-for rural areas of Bihar. It was found that the programme led to a 29 percent increase in the employment rate of the trained graduates. However, this impact was temporary and lasted for two years only. A major finding of the study was related to caste-based discrimination. It was found that the trained candidates who got their job placements had to leave for unbearable casteism in the concerned organisations.

Maitra and Mani (2017) argue that skilling programmes do benefit the targeted population. They found that participation in a subsidized vocational education programme was economically rewarding for women hailing from low-income households in India. The cost benefit analysis of the skilling indicated that the program costs can be recovered with less than four years of employment. Overall, our findings suggest that vocational education may serve to be a promising avenue through which young women can contribute to their household welfare.

The existing literature has underlined the necessity of human capital formation for boosting economic growth and steering inclusive growth. Nevertheless, the failure of India's policy makers on this front poses many questions on their integrity and design of various industrial policies. We argue that political institutions couldn't rise above the dichotomies between social and economic interests. They wished for high economic growth without sparing any serious thoughts to social inclusion.

THE WAY FORWARD

The education endowment in the majority of India's workforce is very less. Unlike the countries that have succeeded in achieving a high manufacturing sector growth, in India, a mammoth fifty five percent share of total workforce is either illiterate or is educated upto primary level. Another 30% of them have education below higher secondary. In aggregate, eighty five percent of India's work-force does not have technical skills that are most essential for finding jobs in the formal manufacturing sector. Even though India may boast of having the largest chunk and number of youth population, it might not contribute to economic growth in absence of skill formation.

In order to realise India's demographic dividend, skilling of labour is very crucial. However, a skilling environment needs to be created by bringing it into the organised sector. The graduates of higher education are mostly not fit for manufacturing jobs. The situation can be turned around if a formal apprenticeship is introduced like most of the industrial countries such as the USA, Japan, and Germany. The legal instruments, the Apprentice Act 1961 and the Apprenticeship Rules 1992, governing apprenticeship programmes have turned counterproductive. For their rigid provisions, they have withheld growth of apprentices. This has discouraged formation of education endowment in the workforce.

Indian skilling challenge is huge due to involvement of diverse stakeholders namely multiple government departments at two tier levels of centre and states, private training providers, educational and training institutions, employers, industry associations, assessment and certification bodies and trainees. Indian skilling challenge is huge due to involvement of diverse stakeholders namely multiple government departments at two tier levels of centre and states, private training providers, educational and training institutions, employers,

industry associations, assessment and certification bodies and trainees. However, it is the heart and spirit of policy makers that can ensure human capital formation a reality.

REFERENCES

- Barro, R. J. (2001). Human capital and growth. *American Economic Review*, 91(2):12– 17.
- Chakravarty, S. (1987). *Development planning: The Indian experience*, Clarendon Press, Oxford.
- Chakravorty, B. and Bedi, A. S. (2019). Skills training and employment outcomes in rural bihar. *The Indian Journal of Labour Economics*, 62:173–199.
- Das Gupta, C. (2008). *State and capital in independent India: From dirigisme to neoliberalism*. PhD thesis, School of Oriental and African Studies (University of London).
- Diaz, J. J. and Rosas, D. (2016). Impact evaluation of the job youth training program projoven. Technical report, IDB Working Paper Series.
- Fogel, R. W. (2008). The impact of the Asian miracle on the theory of economic growth. In *Understanding Long-Run Economic Growth: Geography, Institutions, and the Knowledge Economy*, pages 311–354. University of Chicago Press.
- Hirshleifer, S., McKenzie, D., Almeida, R., and Ridao-Cano, C. (2016). The impact of vocational training for the unemployed: experimental evidence from turkey. *The Economic Journal*, 126(597):2115–2146.
- Islam, I. (2019). Growth, new technology and the future of work: International evidence and implications for India. *The Indian Journal of Labour Economics*, 62(1):31–53.
- Lucas Jr, R. E. (1993). Making a miracle. *Econometrica: Journal of the Econometric Society*, pages 251–272.
- Mankiw, N. G., Romer, D., and Weil, D. N. (1992). A contribution to the empirics of economic growth. *The quarterly journal of economics*, 107(2):407–437.
- Mehrotra, S. and Acharya, S. (2017). Planning for human development-experiences in Asia. pages 1607–1631.
- Mehrotra, S., Gandhi, A., and Sahoo, B. K. (2013). Estimating India's skill gap: on a realistic basis for 2022. *Economic and Political Weekly*, pages 102–111.
- Mehrotra, S., Gandhi, A., Sahoo, B. K., and Sahu, P. (2012). Organised and unorganised employment in the non-agricultural sectors in the 2000s. *IAMR occasional paper*, (6).
- Mehta, S. (2011). Economic reforms, technological intensity and industrial development in India. *Economic and Political Weekly*, pages 60–68.
- Romer, P. M. (1994). The origins of endogenous growth. *Journal of Economic perspectives*, 8(1):3–22.
- Sharma, L. and Nagendra, A. (2016). Skill development in India: Challenges and opportunities. *Indian Journal of Science and Technology*, 9(48):1–8.
- Singh, B. (2023). *India's Informal Economy: Contractual Labour in the Formal Manufacturing Sector*. Taylor & Francis.

Srivastava, S. C. (2020). Tackling job growth: labour policy and labour codes. In Mehrotra, S., editor, *Reviving Jobs: An Agenda for Growth*. Penguin Random House India Private Limited.

Tregenna, F. (2015). Deindustrialisation, structural change and sustainable economic growth.