Chapter 6
Policy Analysis in Technical Education: A System Dynamic Modelling

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ABSTRACT

Higher technical education is one of the indicators of national growth. Higher technical education of the country is responsible for its global progress in technology and standard of living as technical advancement helps to make the country economically progressive as the availability of quality technical staff attracts global entrepreneurs who, in turn, increase the revenue of the nation and therefore the higher technical education system is the backbone of the country's economic progress. In the present research paper, India's higher technical education system is being studied, which is currently undergoing uneven expansion due to the implementation of the various policies responsible for this plethora of expansion. The main objectives of this study are to improve the quality of higher technical education by developing a dynamic system model by incorporating some of the important parameters of higher technical education system stakeholders to test various long-term policies that can improve the quality of higher technical education.

INTRODUCTION

The massive Expansion in the engineering Institution across in India during last decades has threatened the standards and quality of technical education system. This irrational growth has resulted in unemployment among engineering graduates and poor academic environment which has lead to closure of substandard institutes. In such a situation quality only remains the hope for sustaining in such a competitive

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environment (Ucharia, 2015).On the other hand growth of global economy has increased opportunities for countries with good levels of Technical education

(Carnoy, 1999). In the global competitive environment of today, an accessible and high quality of higher education system is imperative for a nation's economic progress. A sound higher education system supports and enhances the process of economic and social development for a better future growth of nation. Focus on quality is urgent need for bringing academic excellence and for development of technical manpower for Industry 4.0 requirement for future.

1.1 Overview of Technical Education System in India

The higher education system in India grew rapidly after independence. By 1980, there were 132 universities and 4738 colleges in the country enrolling around five percent of the eligible age group in higher education. Today, in terms of enrollment, India is the third largest higher education system in the world, behind China and the U.S.A. China having the highest enrolment in the world (nearly 23 million) is organized in only about 2,500 institutions. While the average enrolment in a Technical institution in India is about 500-600 students with 6223 technical institutions (source, A.I.C.T.E.).This makes the system of Technical education in India a highly fragmented one that is far more difficult to manage than any other system of higher education in world. However, other than a handful few institutions of national importance providing high quality higher education, the system is failing to produce quality graduates who are much needed in all sectors of society (NAASCOM, 2006). India's technical education has failed to map the future demand for various skills and it has not kept pace with industry's growth (Khemani, 2006).Since higher education in India is an important part of modern Indian society and is intertwined in the political and social systems of the society, this sector is in need to change, development and improvement (Albatch,1993).

1.2 Challenges Faced by Technical Education in India

In India, the entry of the private sector in Technical education is on massive scale and is largely driven by inadequacy in government funding in the education sector, paving way for private investment. This is due to liberal policies in early 90's. With the present growth in GDP it is expected that India's economy will surpass Italy by 2015, France by 2020, Germany by 2025 and Japan by 2035.It has been predicted that India, being driven by Knowledge economy, will become the 3rd largest economy by 2050 (Varghese, 2007). Technical education in India is more privatized than any advanced countries. A large number of Institutes are private and self-financed as prestigious Institutions are not able to accommodate all aspirants (Source, A.I.C.T.E.2012). Most private Institutes concentrate on profit making rather than on imparting quality education to students by limiting the essential requirements needed to fulfill the curriculum, Pay structure variations among faculties makes there retention and availability difficult. The total admission in Engineering institutions went down from 17.53 lakh in 2012-13 to 13.84 lakh in 2018-19, a reduction of more than 20% in 7 years. The placement data on the AICTE website is shocking. al Available data suggests that only an average of 40 per cent of the total number of engineering graduates is getting placed. To propel the nation in 21st century there is the need for planned change in higher education with realistic perception for policy formation as to what is possible and what is not.