

ENGINEERING MANPOWER

A SECTORAL STUDY OF ENGINEERING MANPOWER REQUIREMENTS
UPTO 1976, BASED ON OUTPUT, INVESTMENT
AND WORK-FORCE

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INSTITUTE OF APPLIED MANPOWER RESEARCH
INDRAPRASTHA ESTATE, RING ROAD
NEW DELHI-1
June, 1967

The Institute of Applied Manpower Research was set up in 1962 by the Government of India to conduct research on problems of manpower planning. The main objects of the Institute are:-

- To advance knowledge about the nature, characteristics and utilisation of the human resources in India.
- To provide a broad perspective of requirements of trained manpower for economic development in different fields with due regard to the probable impact of technological changes on the pattern of employment.
- To develop improved methods and techniques for dealing with:-
 - training and development of the existing work force;
 - educational preparation for employment;
 - vocational guidance;
 - identifying and developing highly talented persons;
 - forecasting demand and supply of manpower and connected matters.

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REQUIREMENTS

FOREWORD

The work relating to the assessment of engineering manpower requirements for the Fourth and Fifth Plan periods was done, at different stages, by several organisations in the country including the IAMR. During the first half of the year 1966 a note on "Technical Education in the Fourth Plan - Approach and Tasks" was jointly prepared by the Planning Commission (Education Division), Ministry of Education, and Directorate of Manpower, Ministry of Home Affairs. This note was discussed at the Education Ministers' Conference held at Madras in June, 1966. Taking into account the views expressed by some of the State Education Ministers on the subject, and in view of the vital importance of estimates of demand for technical personnel for the Fifth and subsequent Plans, to the development of educational facilities during the Fourth Plan, it was decided to set up a high power committee to consider the matter in detail. Accordingly, a Technical Manpower Assessment Committee was set up under the chairmanship of Dr. V. K. R. V. Rao. The chairman of the committee felt that since the IAMR was already working on the methodological aspects of engineering manpower requirements, it would be appropriate if the Institute take up a study on the relationship between output, investment and employment of engineers in different sectors of the economy. The sectoral study was accordingly conducted by the Institute.

The objectives of the sectoral study were specified to be (i) to see how far a sectorwise approach to the estimation of requirements of engineering manpower is feasible in the context of the information available in the country and (ii) to see how far the results obtained by a sectorwise study differ from those obtained from global studies.

During the month of November, 1966, a preliminary paper on the relationship between output, investment and employment of engineers in different sectors of the economy was prepared by the IAMR and submitted to the Technical Manpower Assessment Committee. Results presented in the paper showed that while there are several difficulties and limitations in the way of carrying out a sectorwise study for the estimation of engineering manpower requirements, it is a worthwhile and feasible attempt. The analysis revealed that there exists a significant relationship between output, investment and employment of engineers in different sectors of the economy. On the basis of the relationship thus established, estimates of engineering manpower requirements for the years 1970-71 and 1975-76 were made by fitting regression lines to the observed data.

The Technical Manpower Assessment Committee used inter alia the results of the sectoral study of the IAMR in finalising its report on the estimates of demand and supply of engineering manpower for the Fourth and Fifth Plan periods.

In the paper submitted by the IAMR to the Technical Manpower Assessment Committee in November, 1966, the sectoral approach related employment of engineers with output and investment. Work was continued at the IAMR to establish a similar relationship between employment of engineers and work-force in different sectors of the economy.

The results of the sectoral study, in the extended form, are presented in this paper. The paper has been prepared by Dr. S. P. Agarwal, Head of the Manpower Economics and Statistics Division and Shri P. N. Mathur, Senior Research Officer with the assistance of Shri R. S. Sharma and Km. Lalita Grover. It is also intended to publish a condensed version of the paper in the Manpower Journal.

June 17, 1967

P. K. DAS
Director

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APPENDIX

A list of selected studies of engineering manpower requirements made in India during 1956-66

1. Planning Commission : Report of the Engineering Personnel Committee, New Delhi, 1956.
2. Planning Commission : Report of the Working Group on Technical Education and Vocational Training, New Delhi, 1960.
3. Institute of Applied Manpower Research : Working Paper No. 7/1963 - Engineering Manpower : Analytical Review of Demand Forecast Methodology and Provisional Forecast of Growth (Parts I and II), New Delhi, 1963.
4. Institute of Applied Manpower Research : Report No. 2/1965 - Second Report on Engineering Manpower Survey - Demand and Supply of Engineering Manpower (1961-1975), New Delhi, 1965.
5. Indian Statistical Institute (Planning Unit), London School of Economics (Unit for Economic and Statistical Studies on Higher Education), Planning Commission (PPD) : Manpower and Educational Development in India (1961-1986) with Annexure - Memorandum from the Joint Project Team submitted to Education Commission, 1965.
6. Ministry of Education : Report of the Education Commission, 1964-66 - Education and National Development, New Delhi, 1966.
7. Planning Commission (Education Division), Ministry of Education and Directorate of Manpower, Ministry of Home Affairs : Technical Education in the Fourth Plan - Approach and Tasks (Discussed at the conference of Education Ministers at Madras in June, 1966).

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