Chapter 14
Enrolment Trend in STEM in Higher Education Level Among Disadvantaged Group Students in India

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ABSTRACT

This chapter investigates the enrolment trends in science, technology, and engineering (STEM) disciplines at the higher education level among disadvantaged group students in India. It also identifies and analyzes the challenges and barriers

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faced by students from disadvantaged groups in accessing and persisting in STEM higher education programs in India and formulating actionable suggestions and strategic interventions to enhance the participation and success of disadvantaged students. This research adopts a qualitative and documentary approach. The study results showed that SC and ST male students show higher enrolment rates than their female counterparts in undergraduate engineering and technology programs, while Scheduled Caste female enrolment surpasses Scheduled Caste male enrolment in M.Sc. programs. Other Backward Caste male students consistently enroll more than Other Backward Caste females in both science and engineering disciplines at undergraduate and postgraduate levels and disadvantaged group students mainly faced gender-biased, financial problems, and caste and race-based prejudices in accessing and persisting in STEM higher education programs.

INTRODUCTION

The term STEM is used to group subjects in the fields of science, technology, engineering, and mathematics. Although these subjects have been taught for a long time, the US National Science Foundation (NSF) officially introduced the abbreviation in 2001 (Chute, 2009). The term serves as an umbrella term for many fields, such as information technology, software development computer network architecture, data security, and more. STEM education can be viewed from a broad perspective. In this perspective, each STEM field of study includes education, science, technology, and engineering. And mathematics as well as a combination of these disciplines or an interdisciplinary one (Li, 2014).

Education is the most important vehicle for social, economic, and political transformation. In the globe's history of higher education, India's higher education is a turning point for the international economy. One cannot over-emphasize the role of higher education as a key catalyst for promoting socio-economic mobility and preparing citizens for a knowledge society. Tertiary education facilitates the absorption of the positive effects of globalisation and enables India to develop a trillion-plus economy through a highly qualified and broad national talent base (Mukherjee, n.d.). The progress of any country and nation depends on the education of individual citizens of that nation. Therefore, every citizen of the country, regardless of caste, or religion, is highly educated to develop the financial development of a country (Seth, 2024). Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), and minorities are among the disadvantaged groups. According to India's 2001 Census, *SCs make up 16.23% of the population and STs 8.2%. While women make up half of the socioeconomic development of the Indian population, minorities and other backward classes also hold a sizable proportion*. The ongoing

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