INDIA GENDER REPORT

FEMINIST POLICY COLLECTIVE

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with
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FEMINIST POLICY INDIA
Transformative Policy and
Financing for Gender Equality

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CHAPTER 23 Women in Higher and Technical Education

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Abstract

The objectives of this chapter are to examine the history and current state of higher education in India from the perspective of the female gender, and to make recommendations for the future. Up to Independence, female education received scant attention. Post 1947, the governments of independent India formulated policies that gave importance to education of girls and women. Consequently, female literacy rose from 8.9 percent in 1951 to 70.3 percent in 2018.

Female enrolment in higher education has risen to close to 50 percent, nationally and state-wise. However, there is some skew stream-wise with engineering and management being much lower and medical sciences and arts being higher. Despite gains in education, female labour force participation (FLFP) has declined steadily for the past several decades and India is now near the bottom of South Asia.

To get a micro view, we conducted a survey of about 330 women college students, faculty and alumnae. The participants were positive about some aspects of higher education. However, they gave suggestions for improvement. These included more courses on skills and knowledge related to jobs, and measures to address gender biases and discrimination.

One of the important policy recommendations is to make higher education more career-oriented by introducing project-based learning, technical skills and soft skills for all streams. The tendency towards centrally-controlled uniformity needs to be reversed. This requires state-level education policies, and fostering of diversity and dissent within institutions. Finally, higher education institutions should become role models of gender-sensitive organisations.

I: Introduction

Gender equality is enshrined in Article 14 in the Indian Constitution. It is well-understood today that differential access to higher education inhibits the realisation of the ideal of equality. In this chapter, we examine gender[1] issues in higher education. We start with a brief overview of the history of female education since the 19th century. We then cover in detail the status of women in higher education over

[1] Owing to paucity of data, we consider only the female gender in this Chapter.

the past 10 years and the national policies on education. Next, we describe a successful intervention in the IITs and a survey that we conducted among women. Finally, we conclude with recommendations for action.

Pre-Independence India

During the 19th century, social reformers from various religious communities engaged deeply with the issue of women's education. The motivation: a desire to create 'good' mothers and wives, and a wish to remove the stigma of 'backwardness' that came from having educated men and uneducated women in the same family. Additional arguments held that educated women would be able to read religious texts, manage household expenses more efficiently, and help their children learn better, thereby helping in familial, societal and national development (Dandekar, 2020). Overall, the purpose of educating women was to achieve an end that lay beyond women themselves. Although there were some elite women in the Bengal and Bombay Presidencies who expressed a passionate desire for education for its own sake (Forbes, 2013; Sarkar, 1999) they were in a minuscule minority.

British colonialism provided an impetus to Western missionaries and Indian social reformers to open schools and colleges for women in the 19th and 20th centuries. (Minault,1998; Minault, 2009; Pernau, 2004). At this stage the state did not get involved in the project of educating women. Its concern was with creating an educated male workforce that could help the colonial project's expansion. However, it did not oppose female education (Forbes, 2013).

Early Post-Independence Years

Independence from colonial rule witnessed the rise of a major new reason to educate women: to make them equal partners in the project of nation-building (Chanana, 2000). The state now took on the responsibility of women's education. Over time there was an increasing recognition that women's education had a value in and of itself, to help women achieve their full potential as human beings.

The First Five Year plan (1952-57) stated that women had "marked aptitudes" in certain fields, and suggested that women be assisted in taking examinations in these fields as private candidates (Buch, 1998). Gradually, public policy evolved to envision women having the same kinds of careers and educational needs as men. The post-1947 policies led to a dramatic increase in the enrolment of women in higher education. For example, the number of women studying engineering rose from ~20 in 1950 to 900 in 1970 to over 10 lakhs today. In law, the corresponding increase was 290 to 2,600 to 1.4 lakh (Ministry of Education, 2021; Chanana, 2000). Likewise, female literacy rose from 8.9 percent in 1951 to 70.3 in 2018. This is a bigger increase compared to male literacy which rose from 27.2 percent to 84.7 percent (Wikipedia, 2023a).

II: National Policies on Higher Education

In this section, we examine from a gender perspective the three National Policies on Education of the Government of India since Independence. These were issued in 1968, 1986 (revised 1992) and 2020. Each policy has a different emphasis, reflecting the progress of India.

National Policy on Education, 1968 (NPE-1968)

The first policy was the National Policy on Education, 1968 (NPE-1968), an 8-page document (MHRD, 1986/1992, pp. 38-45). In 1968, female literacy was very low, about 17 percent. The gender focus was on increasing education for girls. Important motivations were social justice and social transformation.

Female education was viewed largely as a tool in nation building. The word "girls" appears only in one sentence in the policy, and "women" not at all.

National Policy on Education, 1986/1992 (NPE-1986/1992)

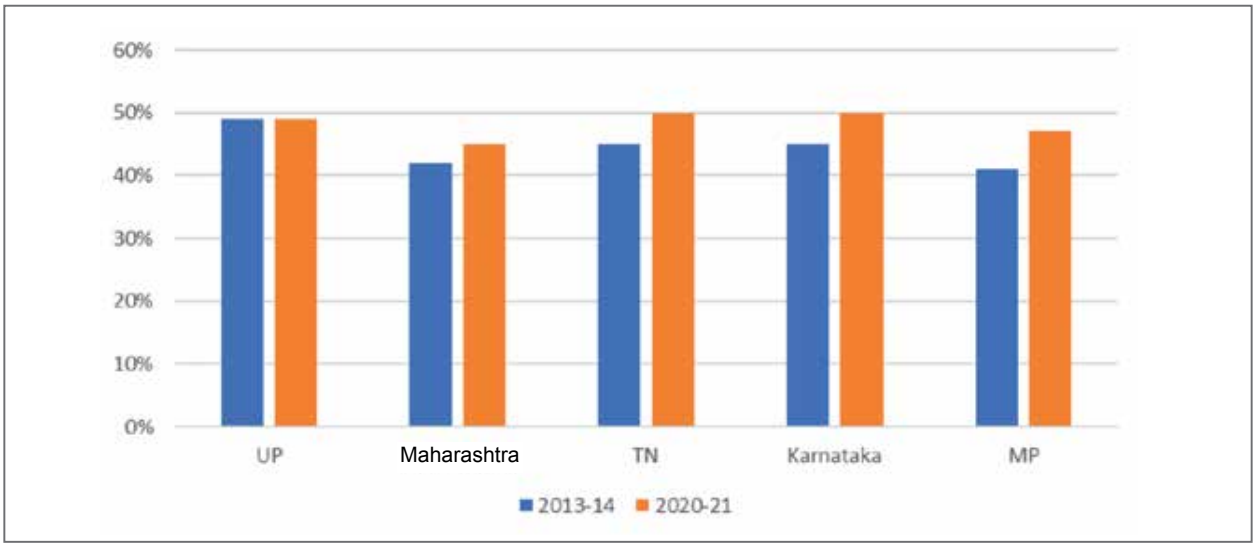
The second policy was published in 1986 and revised in 1992, NPE-1986/1992, a 37-page document (MHRD, 1986/1992). In the two decades since the first policy, female literacy had almost doubled to 30 percent. In NPE-1986/1992, the focus shifted to education of women as a means of improving the status of women and controlling population growth. A half-page section "Education for Women's Education" (Sec. 4.2, 4.3) states forcefully: "***The National Education System will play a positive, interventionist role in empowerment of women***". Recommendations included redesigning curricula and textbooks and orientation of teachers and administrators. Education of women in vocation, professional and non-traditional streams was emphasised. The policy focus was now on the well-being of women themselves. The policy did not mention women as teachers, but it recommended induction of more women in the planning and management of education (Sec. 10.1(d)).

National Education Policy, 2020 (NEP-2020)

In 2020, the National Education Policy, 2020 (NEP-2020) was published as a 65-page document (MHRD, 2020). With enrolment of girls in schools and colleges being close to 50 percent, gender issues have taken a back seat in NEP-2020. The NEP-2020 does not draw on the wealth of statistical data that is available on the education sector, such as the annual All-India Survey of Higher Education (AISHE). Thus, its recommendations are broad-brush and some may be impractical.

Part I on School Education contains a number of references to gender-sensitisation and gender-identity along with many other issues. A Gender Inclusion Fund is proposed to provide various amenities in schools for girls and transgender children. In 2021, the Ministry of Education budgeted Rs. 10,879 crores to be used by State Governments for specific purposes. About 50 percent of this amount is for the benefit of boys and a small number of girls in Kasturba Gandhi Balika Vidyalayas and other special schools. The balance fund amounts to a modest Rs. ~400/girl/year (Ministry of Education, 2021a).

Figure 1: Trends in female ratio in higher education in some major states



In Part II on Higher Education, Section 14 "Equity and Inclusion in Higher Education" talks in general about socio-economically disadvantaged groups (SEDGs) and lists several steps to be taken by Governments and by Higher Education Institutions. Although girls and women are the largest SEDG in India, surprisingly gender barely gets any attention. There is a bland statement that the Governments should enhance gender balance in admissions (Section 14.4.1(c)) and that HEIs should sensitise counsellors on gender-identity. There is no attempt to quantify the gender imbalance in various sectors of higher education, nor any coverage of the problems faced by women in colleges.

The NEP-2020 emphasis on gender-blind quality metrics may actually work against women. Discounting gender reinforces the existing gender hierarchy, giving a continuing advantage to men over women, i.e. ***gender-blind sexism*** (Shukla ***et al***., 2022). Coupled with the scant attention to the biases against women in Indian higher education, NEP-2020 is not likely to significantly improve the status of women in Indian higher education.

III: Current State of Women's Education in India

Statistics on women's access to education such as enrolment rates can act as a barometer to measure gender equality; in turn, interventions that improve women's access to education will have a positive impact on the goal of achieving gender equality (Manjrekar, 2021). With data largely from the annual All-India Survey of Higher Education conducted by the Ministry of Education, we present the current state and the trends over the past decade. We consider various dimensions such as variations across disciplines, across levels, States of India, etc.

National and State-level Enrolment

At a gross national level, the female ratio in Higher Education is favourable. It rose from 46 percent in 2013-14 to 49 percent in 2020-21. This is actually slightly above the female ratio of 48.7 percent in the Indian population. State-wise trends in the large states are similar (UP, MH, TN, KA, RJ, MP, Kerala) (Fig. 1). Interestingly, there is no significant difference in female enrolment between the states with medium to high HDI (human development index) and those with low HDI (Table 1) (Wikipedia, 2023). This favourable trend is a result of the state and national policies for girls to stay in school and to join college in the post-Independence decades.

The concept of ***intersectionality*** says that women belonging to socially disadvantaged groups are doubly disadvantaged. The very detailed analysis by Saraswati Raju on GER data from 1999-2000 to 2004-05 showed a distinct disadvantage for rural women. Social group (SC, ST, OBC) did not have much of an effect. Considering religion, Christian women had a higher GER than Hindu women and Muslim women were lower (Raju, 2008).

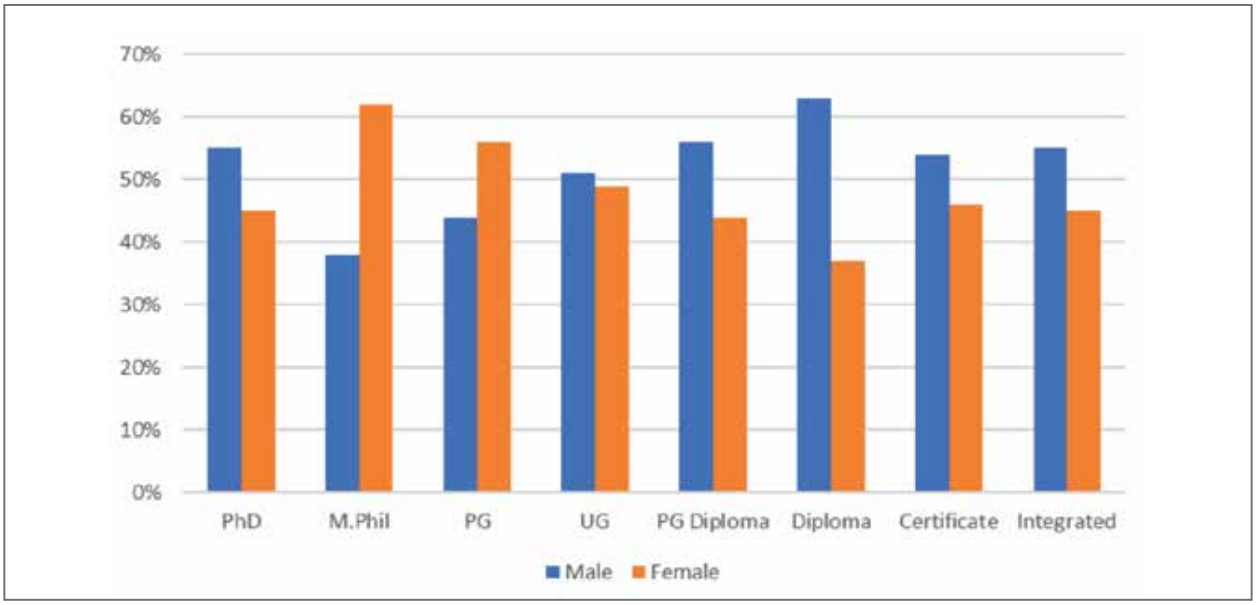
We were unable to find an up to date analysis based on GER. We looked at the female enrolment ratio overall and in SC, ST and OBC. In 2019-20 and 2020-21, there was no significant difference in enrolment ratios. Thus, women are not doubly disadvantaged as far as access to higher education is concerned. Whether intersectionality plays a role in graduation outcomes is not known.

Enrolment at Various Levels

The majority of college students are under-graduates, with the female ratio 48.7 percent. From 2013-14 to 2020-21, at the PG level, the female ratio increased from 49 percent to 56 percent, at MPhil from 58 to 62 percent and at PhD from 42 to 45 percent (Fig. 2). This preference of women to pursue PG and higher studies compared to men may be due to the pressure on men to start earning, while

women are allowed to continue studies until marriage. Women joining the work force at a later age is consistent with the declining FLFP (female labour force participation) in India (see Sec. 6).

Figure 2: Female ratio at different levels in higher education in 2020-21



Enrolment across Streams

Engineering and management have the lowest female participation at 29 percent and 37 percent respectively. IT & Computers at 39 percent is higher than engineering. Commerce at 48 percent is higher than management. Science has good female participation at 52 percent. The traditionally feminine streams of education and medical science are 63 percent and 59 percent respectively (Fig. 3).

Figure 3: Female ratio in various streams

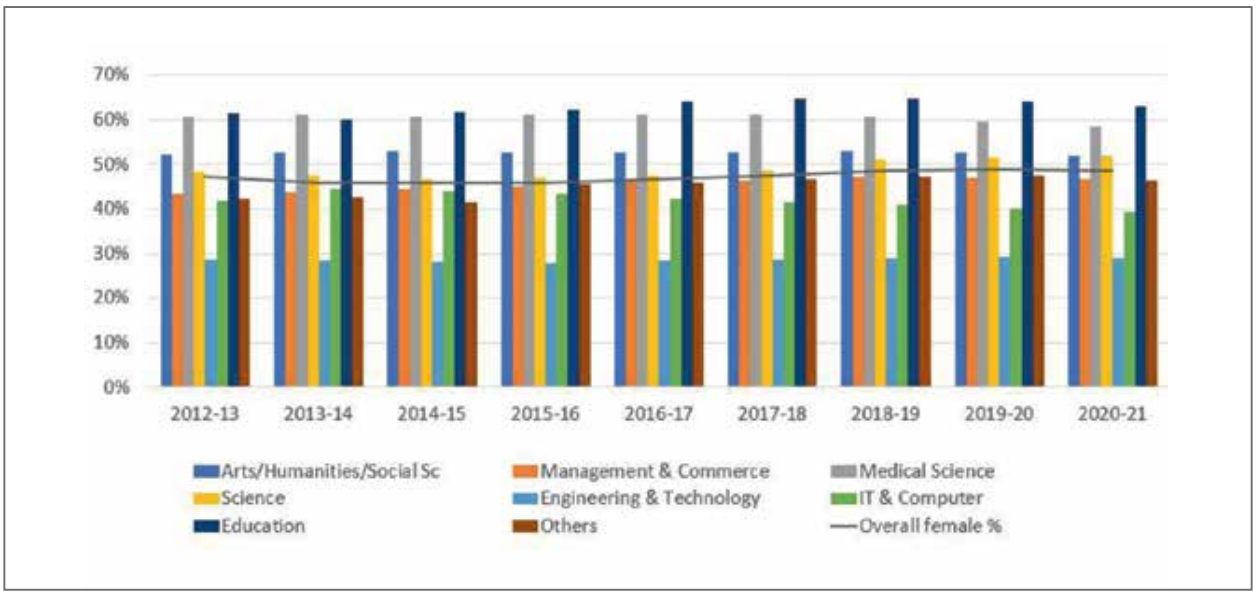


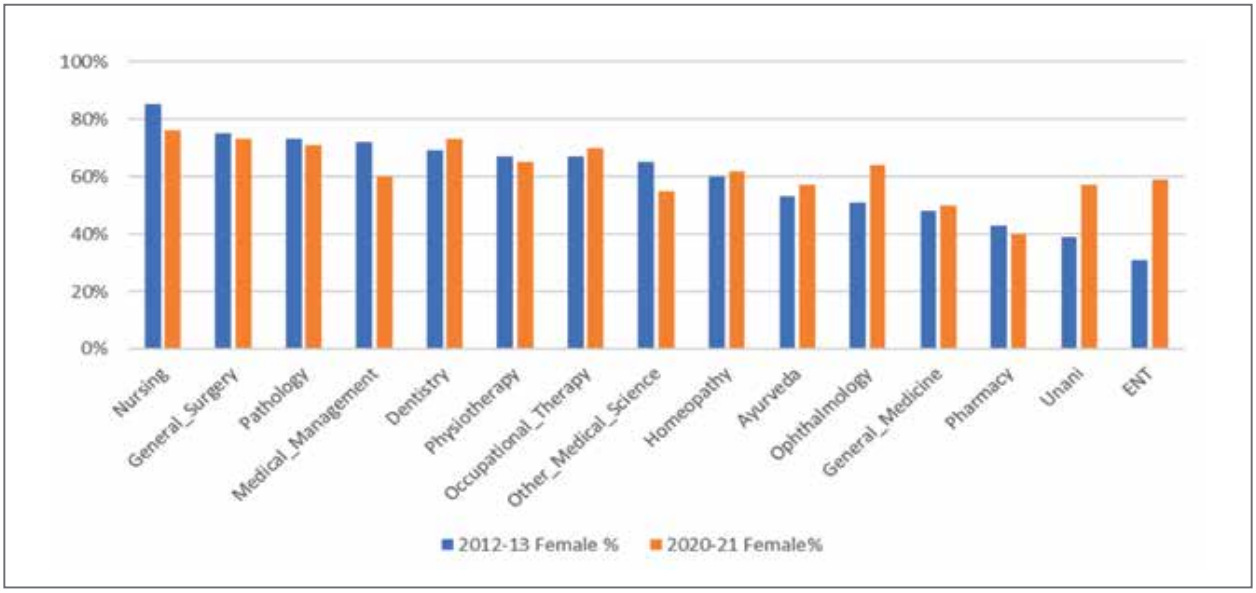
Table 1: HDI and female ratio in HE in 2021 for selected States (Source: AISHE 20-21)

Rank	State	Female%	HDI
1	Kerala	52.3%	0.752
12	Maharashtra	45.2%	0.688
13	Tamil Nadu	50.2%	0.686
17	Karnataka	49.9%	0.667
22	Rajasthan	47.5%	0.638
	India	48.7%	0.623
31	MP	47.1%	0.596
32	UP	48.9%	0.592

There has not been much change in the female ratios in most streams over the past decade. Exceptions are science with an increase from 48 to 52 percent and education going from 61 to 63 percent. On the contrary, medical science has declined from 61 to 59 percent and IT & Computers from 42 to 39 percent.

It is illustrative to examine medical sciences where females are dominant. Medical sciences consists of many sub-streams including nursing, medical management, Indian medical systems, etc (Fig. 4). In all sub-streams, females are the majority in 2020-21 except for Pharmacy (40 percent and Radiology (40 percent). From 2012-13 to 2020-23, female ratio has increased significantly in two sub-streams: Unani (39 to 57 percent), ENT (31 to 59 percent). There has been a significant decrease in Nursing (85 to 76 percent), Medical management (72 to 60 percent) and Pharmacy (43 to 40 percent). We speculate that with nursing becoming more attractive due to high-paying/high-status jobs in UK and other Western countries and in high-end corporate hospitals in India, men are displacing women in nursing (Chanana, 2000).

Figure 4: Female enrolment in fields of medical science, 2012-13 vs. 2020-21



Elite Institutions

The Institutes of National Importance, IITs, IIMs, etc, form barely 0.74 percent of higher education by enrolment. However, by their elite nature, they tend to produce many of the corporate and government

leaders. In 2020-21 the female ratio in these institutes was 26 percent, barely half the overall higher education ratio. This will tend to perpetuate the "glass ceiling" in the job market in years to come.

Female Labour Force Participation (FLFP)

Today, women's presence in higher and technical education is discussed with reference to the Female Labour Force Participation (FLFP) rate. There has been much consternation since the FLFP of Indian women aged 15-59 declined from 30.4 percent in 1990 to 26.0 percent in 2010 to 19.2 percent in 2021. Compared to our immediate neighbours, in 1990, India was ahead of Bangladesh and almost 3x higher than Pakistan. By 2021, India had fallen behind both countries (Table 2) (ILO, 2023).

Table 2: FLFP rates for India and neighbouring countries, 1990-2021 (Source: ILO, 2023)

Country	1990	2000	2010	2021
India	30.4%	30.5%	26.0%	19.2%
Bangladesh	26.6%	28.3%	30.5%	34.9%
Pakistan	11.2%	16.1%	22.0%	20.7%
World	51.2%	50.9%	48.7%	46.2%

The dramatic increases in female enrolment in higher education and economic growth of the country paradoxically have not translated into improvements in FLFP. A detailed ILO study in 2014 analysed the data and give several reasons (Kapsos ***et al***., 2014). They concluded that the main reasons for the decline are:

1. Increasing education and rising household consumption leading to women not participating in the workforce. Much of the employment of women is in low-wage, low-skill sectors such as agriculture and household work. With higher education, women do not opt for these. As household income and consequently consumption increases, there is less need for a second family income from the woman.
2. Lack of job opportunities. Only certain types of jobs are open to women in India. Much of the job creation in the recent past has been in job types for which women are not considered.
3. Under-reporting of informal work and changes in data collection methodology.

For the period 2005-2010, the study concluded that increased education and household consumption accounted for 18 percent of the decline, lack of job opportunities and social factors accounted for 42 percent, and the balance 40 percent was due to changes in measurement methodology.

Thus, the declining trend in FLFP has implications for higher education. Women stay out of the work force for longer than men while studying. However, these years of higher education are not training them for the available jobs. Higher education also needs to change the perceptions and patriarchal biases of all students so that societal limitations on suitable jobs for women are phased out in the long run.

IV: Case Study: Women in BTech in IITs – from 8 percent to 20 percent

Historically, BTech in IITs was almost a male preserve. From barely 2 percent in the 1970s, the percentage of women rose to about 8 percent around 2000. It stagnated at this level until 2016. For many years, IITs took the view that this was due to deep-rooted societal biases beyond the control of

IITs. With mounting concern about the low gender ratio, in 2016 the Joint Admissions Board (JAB), responsible for all admissions to BTech in IITs, constituted a committee headed by Prof Timothy A. Gonsalves, Director, IIT Mandi to recommend ways of addressing the issue. The committee consisted of IIT faculty, with about 50 percent being women (Gonsalves, 2017; Gonsalves, 2021).

Contrary to conventional wisdom, the committee found that engineering was a popular choice for girls. About 3,00,000 women students joined B.E./B.Tech. each year in India, a percentage of 28 percent. In NITs, there were 7,820 BTech women constituting 22.1 percent of BTech students. In IITs, in stark contrast, the number admitted in 2016 was about 850 or 8 percent.

The probability of a girl getting into IIT was much lower compared to the probability of her getting into MBBS and of her getting high marks in 12th Boards. It was clearly better for parents to spend on coaching for MBBS, for Board exams and for JEE Mains, rather than coaching for the IIT JEE (Advanced).

From the 2016 admissions, the committee found that there were a large number of girls whose ranks were high enough for an IIT seat, but who declined. A study of the choice lists filled by females indicated that the female choices appeared to be constrained geographically and to certain branches. If all qualified girls had accepted, IITs would have admitted >20 percent females!

The committee felt that 20 percent girls in each batch would serve to (a) make a more gender-diverse academic environment in IITs, and (b) create role models to encourage school girls and their parents to aspire for an IIT BTech seat. To achieve 20 percent, the committee recommended creation of extra female-only seats in all branches and all IITs to entice ***already qualified*** girls to opt for an IIT seat within their choice list. The extra seats would not reduce the seats for boys. The scheme operates without lowering the cutoff ranks for girls, thus there is no dilution of quality. As further indication that the scheme would not reduce quality, the committee cited a study done in IIT Delhi comparing the final CGPA of female and male students during the period 2003–2015. The study found that females consistently outperformed males by about 1 grade point during every one of the 13 years.

The female supernumerary scheme was approved by the apex IIT Council in April 2017 with targets of 14 percent, 17 percent and 20 percent in 2018, 2019 and 2020 respectively. Many IITs adopted special measures to attract girls such as campus open house visits for girls and help desks during the counselling. By 2020, the gender ratio rose to 19.83 percent. In that year, a total of 3,185 girls were admitted to all IITs, an increase of 275 percent over the 848 admitted in 2016.

As evidence of the effectiveness of the scheme, for the first time female students won the PGM (President›s Gold Medal -- the highest academic award for BTech in an IIT) in 2017 & 2018 in IIT Mandi, and in 2019 in IIT Madras. Anecdotally, teachers report that the classes are noticeably more responsive with 15-20 percent female students. Senior female alumna and professors of IIT Madras who met in 2020 unanimously lauded the scheme, though some had opposed it in 2017. With the publicity, there is greater awareness among the public that IIT BTech is an increasingly attractive option for girls (Gonsalves, 2021; Gonsalves, 2023).

A Step Backwards

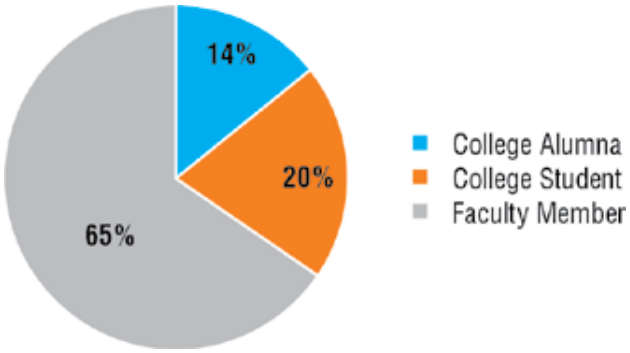
The importance of considering gender while making policies is highlighted by a seemingly well-intentioned change in the admission criteria to NITs in 2017. In 2016-17, the JOSAA decided to eliminate Board marks from the JEE ranking used for NIT admissions. Prior to the change, NITs had about 22 percent women in BTech. In 2017, there was a drastic drop in female enrolment to 13

percent in NIT Trichy, and similarly in other NITs. To undo the damage, the supernumerary scheme of the IITs (Section 5.4) was implemented in NITs and by 2020, the ratio was raised to about 20 percent. This policy change disrupted the gender ratio in NITs for a few years.

V: Women's Voices

Gender-oriented policies in Higher Education must be grounded in the experiences and aspirations of women. To this end, we conducted a survey of women college students, alumna (career-oriented and intermittently working), and college faculty (Fig. 5). Faculty members are also alumnae, but we treat them as a separate group as they are involved in higher education as students and as teachers. Respondents were from different parts of the country and various disciplines. The survey in English was circulated in known circles, so it should be considered as ethnographic rather than quantitative.

Figure 5: Groupwise distribution of participants



Of the 333 women who participated in the survey, 34 percent were from engineering, 31 percent from science, 25 percent from arts and 11 percent from commerce. The age distribution is given in Table 3. Most of the respondents are college students or mid-career women.

Table 3: Participants by age group

Age Group	Participants	
	Number	Percent
17-22	57	17%
23-30	35	11%
30-40	84	25%
40-50	116	35%
50-60	39	12%
Above 60	2	1%

Among the college students 66 percent are UG and 19 percent from PG programs. 54.5 percent of faculty are PhD holders while the remaining 44.5 percent have a Master's degree. 85 percent of the alumnae are working women.

Findings of the Survey

We summarise the results of the survey in two parts, views on Higher Education and on Careers. This is followed by quotes from a few female faculty.

Higher Education

Overall, the women in the survey are fairly satisfied with their college education. Four out of five alumnae believe that their college education is relevant to their jobs. Three out of four college faculty believe that their female students are well-prepared for jobs. Only one in 20 believe that female college students are not prepared for jobs.

About 60 percent of the college students surveyed feel that men are directed more towards practical courses that lead to employment. With college alumnae this drops to about 32 percent, perhaps because they see less correlation between college education and jobs.

The main changes that women would like to see in higher education:

1. Science and engineering graduates want more courses on financial matters and soft skills. Management, humanities and arts graduates feel that courses on data analytics and technical know-how would help them.
2. A significant minority of women, about 20 percent, are inhibited by lack of confidence. Better support from family and society and measures to help college women to build self-confidence would be helpful.
3. Affordable and good quality childcare and flexible timings will help married students, faculty and staff.
4. About 1 out of 5 faculty who responded feel that encouragement, motivation and awareness are factors that can increase participation of women in higher education.
5. A senior professor at IIT Madras strongly believes that education of men is the only solution to changing the unfair pressures on women.

Quotable quotes

"Even the most concerned men can be insensitive at the workplace. … Fix the men, and you will be able fix gender bias in society" – Senior Professor at IIT Madras

"Parental leave should be made 8 months: 6 months for the mother and 2 months for the father. Provide quality child care centres at affordable price" – Associate Professor at GEC, Idukki

"The society doesn't expect women to work or even pursue such opportunities … it is natural that the section of population for which working is optional, i.e. women, would be under represented" – young Assistant Professor at IIT Mandi.

Careers

On the issue of careers, more than half of the students feel that societal expectations play a role in discouraging women from pursuing work and a gradual shift in social norms can help a larger number of women to work. About 75 percent of women in the age group 17-32 believe that social expectations discourage women from working. The percentage decreases with age, reaching 44 percent in the age group 50-60. Perhaps this is a result of women seeing that they can take up jobs especially after their children have grown up, and that with greater maturity and experience they can challenge social norms. This finding correlates with the World Bank estimates that participation of Indian women in the labour force increases with increasing age: in 2021, it was 31 percent for age group 25-34 compared to 36 percent for age group 45-54 (World Bank, 2023).

Steps to encourage women towards careers include: support from the family, change in society's perception of working women, and flexible timings. Affordable good quality childcare is often mentioned.

VI: Summary and Recommendations

Since Independence in 1947, India has made remarkable progress in education for girls and women. The first two National Policies on Education in 1968 and 1986/1992 laid emphasis on female education for various reasons such as equality for women, social transformation, etc. By 2020, overall female enrolment at the school and college levels was close to 50 percent.

The AISHE 2020-21 report on higher education indicates that the ratio of women in different streams of higher education varies widely. The female labour force participation rate that has been declining to abysmally low levels, also indicates that gains in higher education are not translating into improvement in the socio-economic status of women. Thus, there is still a need for policy and other changes to address these issues. Sadly, the NEP-2020 pays scant attention to gender issues. It proposes gender-neutral quality measures that could be counter-productive.

In contrast, the IITs made a radical change in the BTech admission process to increase female enrolment from a low 8 percent to a respectable 20 percent. This success demonstrates that affirmative gender-sensitive policy changes can be effective in social transformation.

We list several recommendations below.

Career-oriented Education

The AISHE reports show that women disproportionately join the Arts and other non-professional courses. The low FLFP rates indicate that when they graduate most women are not ready for most jobs. This is also a common refrain in the survey, from women in both professional and non-professional streams.

Action Points

1. All degree programmes to include broad foundations of useful skills such as soft skills, financial literacy, data analytics (without programming), technical literacy, etc.
2. Project-based learning (PBL) helps students learn how to learn, a key skill in the fast-changing future. The projects should address some issues of society, resulting in useful reports, designing or building prototypes, etc.

3. Career counselling to expose female students to non-traditional career options. Especially important is to have working women interacting with students. Seeing that women are able to have satisfying careers without being all encompassing super-women is an important motivating factor.
4. Policy interventions to increase female enrolment in specific streams where it is low, and in elite institutions that produce tomorrow's leaders.
5. Gender sensitisation sessions for male students with working women explaining to them the type of discrimination and hurdles that they face at the work place. This will help these men to be more sensitive to their female colleagues when they join the workforce and as they rise to positions of power.

Catering to India's Geographic Diversity

India has great diversity across states. States have their own languages, culture, status of women, types of jobs, etc. These factors affect education and vice versa. It is for these reasons that the Constitution of India gives the responsibility of education to the States, with some aspects under the Union Government.

Action Points

1. Each State to formulate an education policy that caters to its unique situation.
2. Higher education institutions in the state sectors to be given autonomy from political and bureaucratic interference.

Job Support Systems

Given the stratification of roles in the Indian family, working women need support systems at work including child care, maternity leave without suffering loss of status, etc. Gender bias and harassment at the work place is unfortunately rampant. Higher education institutions to play two roles: (1) to serve as institutional role models by freeing themselves from these problems, (2) to educate students who are the future employees and leaders of organisations.

Action Points

1. Higher education institutions to become role models for gender-sensitive management practices
2. Age relaxation of 5 years for women in PhD, faculty and other academic selections
3. Child care and elderly care facilities to be provided in consultation with female employees
4. All committees responsible for promotions, reviews, etc to have at least 1-2 women members
5. Gender sensitisation workshops to be conducted regularly for all employees.
6. Gender sensitivity to be one of the parameters for employee evaluations

Transforming Society

In the long run, the patriarchal mindset of Indian society needs to change. This will come about if young people learn in school and college to respect others irrespective of gender, caste, religion, language, etc. It is essential that young people learn to question the status quo, to dissent and to have the courage of their convictions.

Action Points

1. Higher education institutions to adopt academic freedom policies that encourage and protect questioning, debate and dissent, especially to break harmful societal biases
2. The administration to protect faculty and students from outside authorities who may try to impinge on their academic freedom
3. Critical thinking and data-driven analysis to be taught and used in all academics

Data Collection

The promise of data-driven policies for gender equality will be realised only if data is readily and freely available. Data must be reliable, free from errors and biases.

Action Points

1. Higher education institutions to collect and publish data on gender and diversity of themselves. The data collection and curation methodologies and algorithms to be made open source.
2. Higher education institutions to take the lead in promoting data collection and curation about gender at the local, state and national levels.
3. All data to be collected and curated by at least two independent entities to reduce the possibility of systematic biases and errors.

India has made remarkable progress in female education since Independence. Today, females have equal access to higher education. However, this has not translated into equal access to careers. India has a long way to go to catch up to countries in our region, let alone attain global levels. The need now is for nuanced policies that give women equality in careers and other walks of life.

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Appendix: Survey Questionnaire

Women›s Voices: How higher education helps or hinders women in their career choices?

This questionnaire aims to gather information on how current higher education system helps or hinders women from taking up / continuing a career after graduation.
Please answer the following questions based on your personal experiences and opinions. Your responses will remain confidential and will be used for research purposes only.
* Indicates required question

1. Name (optional)
2. Please confirm that you are a Woman*
   - Yes
3. Age Group *

   Mark only one oval.
   - 17-22
   - 23-30
   - 30-40
   - 40-50
   - 50-60
   - Above 60
4. I am a *

   Mark only one oval.
   - College Student
   - Skip to question 5
   - College Alumna
   - Skip to question 10
   - Faculty member
   - Skip to question 26

1. Questionnaire for College Students

5. I am a student of *

   Mark only one oval.
   - Undergraduate Program
   - Post Graduate Program
   - Ph.D. Program
   - Other
6. Stream of Study *

   Mark only one oval.
   - Science
   - Engineering
   - Arts
   - Commerce
7. What are your career goals? *
8. Do you believe Women are directed into more theoretical courses and Men are directed to more practical courses? *

   Mark only one oval.
   - Yes
   - No
   - Don't know
9. What subjects would you like to study?

   Skip to question 32

2. Questionnaire for College Alumnae

10. Educational Qualification*

    Mark only one oval.
    - Undergraduate Degree (B.Tech/BA/BSc etc)
    - Post Graduate Degree (M.Tech/MA/M.Sc. etc)
    - Ph.D
11. Stream of qualification *

    Mark only one oval.
    - Science
    - Engineering
    - Arts
    - Commerce
12. How long since you graduated? *
13. Do you believe Women are directed into more theoretical course and Men are directed to more practical courses? *

    Mark only one oval.
    - Yes
    - No
    - Don't know

14. Have you taken up a job? *

Mark only one oval.

- Yes

Skip to question 15

- No

Skip to question 18

Skip to question 32

Employed Alumnae

15. What is your job profile? *
16. Did you feel well educated for the job? *

Mark only one oval.

- Yes
- No
- Don't Know

17. Are there subjects or skills that you wish were taught in college to improve your work?

Skip to question 32

- Alumnae not pursing a Job

18. Reasons for not pursuing work *

Mark only one oval.

- Lack of suitable job opportunities
- Family responsibilities
- Cultural or societal expectations
- Lack of confidence in finding a suitable job
- Financially well off, thus no need to pursue work
- Other

19. Do you want to work at a later time? *

Mark only one oval.

- Yes
- No
- Maybe

20. What job? *
21. Have you tried for a job before?*

Mark only one oval.

- Yes
- No

22. What job did you take up before?
23. Were there subjects/skills that you wish were taught in college to be better prepared to work?*
24. Do you think you need more job interview preparations?

Mark only one oval.

- Yes
- No

25. If you applied for a job and were not selected, what were the reasons as per your understanding?

Skip to question 32

3. Questionnaire for Faculty Members

26. Qualification*

Mark only one oval.

- Master's degree
- Ph.D

27. Stream qualification *

Mark only one oval.

- Science
- Engineering
- Arts
- Commerce

28. How long since you acquired the qualifying degree? *
29. Do you think that your female graduates are well prepared to enter the workforce?

Mark only one oval.

- Yes
- No
- Neutral

30. What jobs are they prepared for?
31. Are there subjects which could be offered to improve the employability of female graduates?

Skip to question 32

4. Common Questions

32. Do you believe that societal expectations and cultural norms play a significant role in discouraging women with higher education from pursuing work? *

    Mark only one oval.

    - Yes
    - No
    - Neutral

33. What are the main challenges faced by women with higher education in finding suitable employment opportunities in India? *

    Check all that apply.

    - Lack of suitable job opportunities
    - Family responsibilities
    - Cultural or societal expectations
    - Lack of confidence in finding a suitable job
    - No financial requirements to pursue work
    - Other

34. Are there any specific sectors or industries where you believe women with higher education are particularly underrepresented? If yes, please specify. *

35. What steps, if any, do you think can be taken to encourage and facilitate the work force participation of women with higher education? *

36. Are there any support systems, policies, or initiatives that you think would be beneficial in addressing the low workforce participation of women with higher education? If yes, please provide suggestions. *

37. Do you think flexible working hours or remote work options could help increase the participation of women with higher education in the workforce? *

    Mark only one oval.

    - Yes
    - No
    - No idea

38. Are there any additional factors or insights you would like to share regarding the low workforce participation of Indian women with higher education?