WOMEN IN STEM

THE INDIA STORY
Insights, Opportunities, & Policy Outlook

DECEMBER 2025

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FORE**WORD**

At the heart of Viksit Bharat is the need to future-proof our economy for innovation, technological acceleration, and sustainability. This calls for workplaces built on the principles of equity, opportunity, and action to scale impact. As we transition towards Viksit Bharat 2047, women-led development takes centre stage. One fundamental pillar in shaping this new Bharat is the ever-increasing role of science and technology.

To build an empowered workforce, we need empowered women in STEM across the value chain. We need inclusive workplaces with equal opportunities to learn, lead, and inspire action. Despite significant progress in STEM education — with women forming 43% of graduates — the journey into sustained careers in science, engineering, research, and technology continues to be shaped by persistent barriers. Socio-cultural expectations, unequal access to skilling, workplace biases, and limited pathways to leadership roles all contribute to a significant drop-off in women's participation across the STEM talent pipeline. Addressing these challenges is essential to building environments where women do not merely enter STEM — they excel and lead.

While the challenge is clear, the real spotlight must be on solutions. With our work at CII, the call to action is unambiguous: inspire, catalyse, and scale impact. This year, we have constituted a dedicated Task Force on Women in STEM under the aegis of the CII National Mission on Technology, Innovation, and Research, committed to positioning India as a global technology leader powered by innovation-driven growth. Guided by distinguished leaders from industry, academia, and the entrepreneurial ecosystem, the Task Force has developed this comprehensive report, 'Women in STEM – The India Story'.

The report brings together data-driven insights, highlights successful models, identifies key gaps, and offers actionable recommendations to strengthen gender equality in India's STEM workforce. It is an effort to inspire action through evidence. This report also advances CII's mission to increase women's participation in STEM to 35% by 2030 and 50% by 2047. By bringing together data-driven insights, lived experiences, and sectoral perspectives, it underscores the need for intentional and coordinated action by organisations, policymakers, and educational institutions. I would like to express my appreciation to CII Women in STEM and the Avtar team for their valuable contributions, and to all members of the CII National Committee on Technology, Innovation, and R&D, whose expertise and commitment have been instrumental in shaping this report. I hope the insights highlighted here inspire leaders across industry, academia, and policy to champion the systemic reforms needed to build a truly inclusive and future-ready STEM ecosystem.

When women advance in STEM, we do more than strengthen workplaces — we elevate India's innovation potential, fuel economic growth, and move closer to a future that is equitable, competitive, and globally respected.

nāryastu rāṣṭrasya śvaḥ|
Women are the nation's future.

Vaishali Nigam Sinha
Chair, CII Women in STEM Initiatives
Co-Founder, ReNew and Chairperson, Sustainability

FORE WORD

Science, Technology, Engineering and Mathematics (STEM) lie at the core of India's economic progress, national competitiveness, and innovation capacity. As India moves with determination toward its Viksit Bharat 2047 vision, the full participation of women in STEM becomes not only a matter of equity but a strategic necessity.

A future-ready India — self-reliant, technologically robust, and globally influential — cannot emerge unless the nation fully harnesses the potential of all its talent.

In recent years, India has made encouraging progress in expanding women's access to STEM education. Today, women constitute 43% of STEM graduates — a figure that reflects growing aspiration, confidence and opportunity among young women across the country. Yet the transition from learning to labour continues to expose structural gaps: only about 27% of women enter the formal STEM workforce, and fewer than one in five progress into research and development roles — the very spaces where innovation is shaped and national technological leadership is forged. Persistent socio-cultural barriers, uneven skilling pathways, limited workplace support, and underrepresentation in leadership continue to restrict women's advancement across the STEM pipeline.

It is within this context that this report becomes critical. Anchored in CII's national goal of achieving 35% women's participation in STEM by 2030 and 50% by 2047, the document integrates rigorous data analysis, extensive survey findings, and sectoral insights to provide a comprehensive view of the STEM landscape for women in India. It maps participation patterns, explores systemic barriers, highlights best practices from progressive organisations, and outlines actionable pathways toward an inclusive STEM ecosystem.

In perfect alignment with this national mission stands Avtar, an organisation that has spent over 25 years transforming India's workplace landscape. Avtar has consistently championed women's workforce inclusion — from pioneering second-career opportunities and returnship pathways to developing India's first career-intentionality model. Through its flagship platforms, BCWI (Best Companies for Women in India) and MICI (Most Inclusive Companies Index), Avtar has built a strong evidence base that has guided organisations toward measurable and sustained inclusion. The impact is visible: women's representation across Best Companies has risen from 25% in 2016 to 36% in 2025, and in the Science & Engineering sector, from 16% to 26% over the same period. These numbers reflect the power of intentional policies, inclusive programmes, and committed people leadership.

This trajectory of progress underscores a fundamental truth: when commitment is translated into action through well-designed Policies, Programmes and People, inclusion becomes embedded in organisational culture and national capability. As this compendium brings forth inspiring role models, proven practices, and pathways for change, I hope it motivates leaders across government, industry, academia, and civil society to accelerate efforts — to build a STEM ecosystem where women's participation is not an exception but a norm, shaping the India of today and the Viksit Bharat of tomorrow.

Dr. Saundarya Rajesh
Founder–President, Avtar

Executive Summary

India's STEM landscape has evolved significantly since independence, with both men and women contributing to the nation's scientific and technological aspirations.

Yet, despite noticeable progress, systemic barriers continue to limit women's full participation in STEM careers. Today, women constitute 43% of STEM graduates, but only an estimated 27% participate in the STEM workforce, signalling a persistent disconnect between education and employment.

While visibility of women in STEM has improved, India is still working toward building inclusive, future-ready ecosystems that support women across the entire career lifecycle—from early exposure and academic progression to workforce entry and leadership advancement. The representation of women is not merely a gender imperative; it has become a strategic determinant of India's scientific competitiveness, innovation capacity, and readiness for the future of technology.

Achieving impact at scale requires coordinated action across the STEM ecosystem. Government, academia, and industry must work collectively to remove structural barriers, reimagine talent pathways, and strengthen institutional supports. The Three Ps—Policies, Programs, and People—form the backbone of this effort, underscoring the need for forward-looking policies, purpose-built interventions, and active involvement of all stakeholders, including women themselves.

Against this backdrop, the CII National Mission on Technology launched Women in STEM to accelerate India's journey toward technology leadership by strengthening women's participation across STEM domains. This report contributes to that mission by analysing current representation trends, identifying barriers, reviewing existing evidence and interventions, and presenting a set of actionable recommendations geared toward building a robust Women-in-STEM ecosystem.

Drawing from primary surveys, interviews, and secondary research—including the CII Women in STEM Report (2023) and Avtar and Seramount Best Companies for Women in India (BCWI) 2025—the report provides insights into the current landscape and outlines a pathway towards more equitable participation of women in STEM across India.
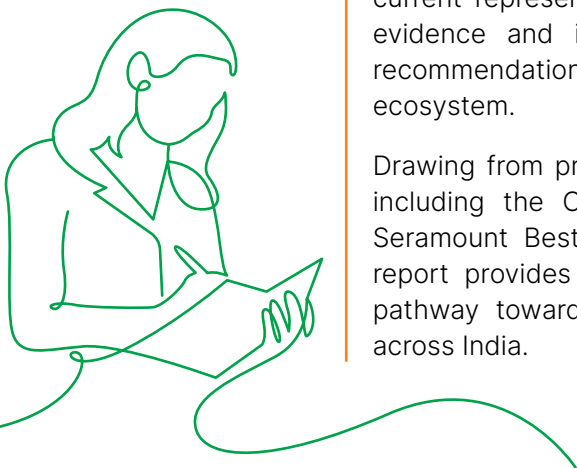
Contributors

The contributions of the Avtar team — Dr. Saundarya Rajesh, Founder-President, Avtar Group; Ms. Anju G. Parvathy, Vice President – Research and Solutions, Avtar Group; Dr. Hima Elizabeth Mathew, Divisional Manager – Research and Solutions, Avtar; Mr. Karthik Ekambaram, Co-Founder & Head of Solutions, Avtar Group— are gratefully acknowledged for their expertise and insights. Their support was instrumental in updating this report, conducting rigorous data analysis, synthesizing research findings, and contributing to the writing and framing of key recommendations. Appreciation is also extended to all experts and contributors involved in the 2023 edition of this report, whose foundational work has informed this updated analysis. The guidance and support of the CII Women in STEM Mission Members and Secretariat team, including Ms. Divya Arya, Deputy Director – Technology, Innovation & Research, CII, and Ms. Namita Bahl, Director & Head – Technology, Innovation & Research, CII, are also acknowledged for helping shape and strengthen this edition.

1.0 Introduction

Science, Technology, and Innovation (STI) remain central to national progress, and ensuring women's equitable participation in these domains is critical for India's long-term development.

Science, Technology, and Innovation (STI) remain central to national progress, and ensuring women's equitable participation in these domains is critical for India's long-term development. This report examines the current state of women in STEM in India, synthesizing trends across education, workforce entry, career progression, and leadership. While India has made notable strides in improving women's access to STEM education, the transition from classroom to workplace continues to show significant attrition. The gap widens further at senior leadership levels and in entrepreneurial or research-intensive pathways.

Persistent challenges—such as uneven access to opportunities, limited mentorship, workplace biases, constrained flexibility, and career-break penalties—continue to influence outcomes for women in STEM. However, these challenges are counterbalanced by a growing range of initiatives led by government bodies, academic institutions, corporations, and industry associations. These efforts include policy reforms, skilling and mentorship programs, institutional gender-inclusion frameworks, and targeted interventions designed to improve retention and advancement.

This report brings together these insights to present a comprehensive view of the current ecosystem. It outlines emerging patterns in participation, highlights the structural and cultural barriers faced by women, and identifies enabling practices that have demonstrated measurable impact. Building on this landscape assessment, the report proposes forward-looking policy options and organizational strategies aimed at strengthening women's representation and leadership in STEM. The goal is to create a more inclusive, competitive, and innovation-driven STEM ecosystem for India.
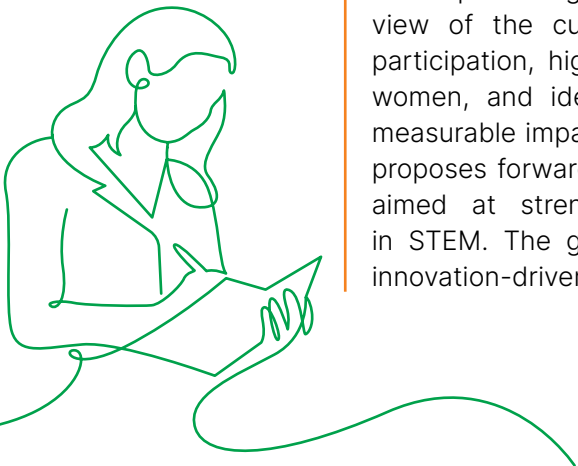
2.0 An overview of the status of Women in STEM in India

The advent of globalization, scientific breakthroughs, and technological advancements, recognized Science, Technology, and Innovation (STI) as a potent tool to address societal challenges, towards realizing national priorities and sustainable development goals.

While efforts are being made to achieve the sustainable development goals and applying STI for development of nations and societies, gender inclusivity in STI is becoming a major concern for policy makers, research scholars and practitioners, across the globe. It has been observed that currently, women account for less than 30 percent of researchers worldwide. Evidently, gender stereotypes and biases have steered females away from science related disciplines (UIS, 2018). Moreover, it has been argued that under-representation of women in STI undermines the advancement of S&T, and its potential for socio-economic development. Some countries and regions struggle to attract more girls to STEM, while others have difficulty to retain or promote women to leadership levels. In the Indian context, despite accounting for about 50 percent of the population, women are under-represented in the STI workforce and so is their participation in higher education in S&T.

There is a significant increase in awareness among policy makers, scientists, academicians and institutions, to promote participation of women in S&T in India. Gender-specific programmes have been undertaken by public institutions and organizations, including Department of Science and Technology, Department of Biotechnology, Indian Academy of Sciences, Women's Science Congress, Niti Aayog and others, to promote and support women's participation and enhance the opportunities for them in STEM and S&T and I. The sensitivity towards gender inclusion can also be observed in some universities (Mallick, 2018; Srinivas, Kumar and Pandey, 2018) as well as in technology intensive sectors (Bhattacharyya and Ghosh, 2012; Subramaniam, 2015). Most of the policy initiatives propose to enhance women participation in S&T education and research as well as promote their contribution to Science and Technology. However, more efforts are required to bring in gender mainstreaming in the Indian STI policy. There is a need to

bring in more, gender inclusivity in STEM, in policy and practice. In doing so, it is important to explore and identify the challenges and systemic barriers that have led to the under-representation of women in the fields of science, technology, engineering, and mathematics (STEM). The given section aims to reflect on such issues and highlights current initiatives and interventions existing at institutional, national and global levels which can be taken into account in policies and practices.

2.1. Trends related to participation, promotion, recruitment, and retention of Women in STEM

In this section, we look at trends related to participation, promotion, recruitment, and retention of women in STEM in the country. The effects of the policy push towards education for girls from subsequent governments are visible in the enrollment trends for higher education across disciplines. The number of women opting to study STEM subjects has been increasing over the past few years.

Of the total enrolment in 2021-22, the number of Student enrolment in STEM for UG, PG, Ph.D. and M.Phil. levels is 98.5 lakh (25.6%) based on actual response

Figure 1: Level and Gender wise enrollment in STEM
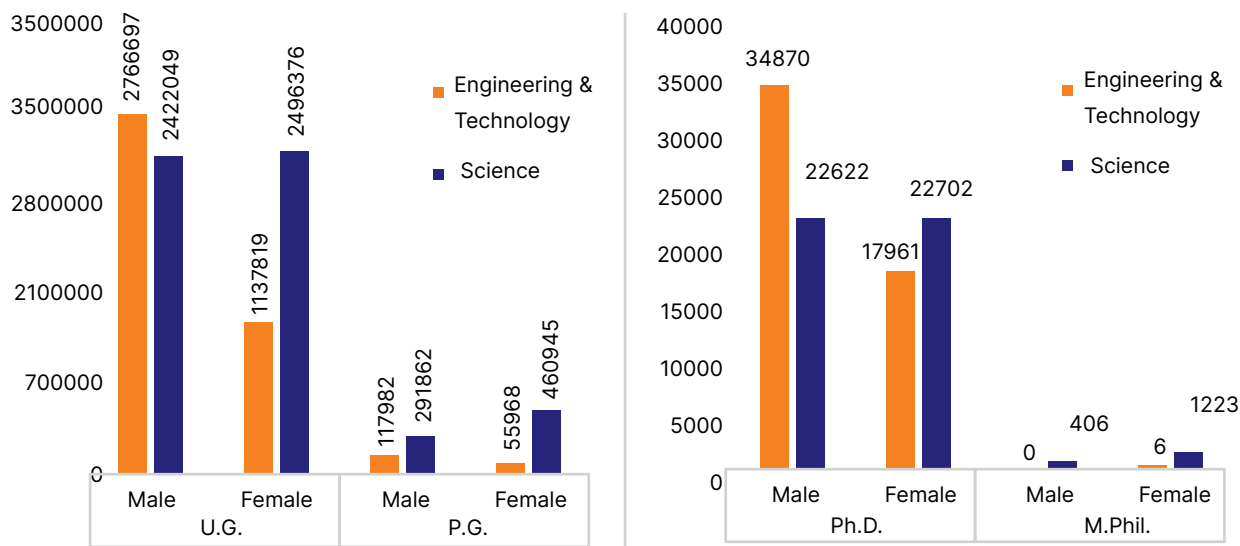
Source: Ministry of Human Resource Development, Department of Higher Education, All India Survey on Higher Education (AISHE) report 2021-22

The charts show a strong and consistent presence of women across Science at all levels (UG, PG, PhD, M.Phil) and Engineering & Technology enrolments, especially at the undergraduate level. At the UG stage, women in Science (24.9 lakh) outnumber men (24.2 lakh), and although women in Engineering & Technology (11.3 lakh) still trail men (27.6 lakh), the gender gap is narrowing compared to At the PG and PhD levels, women surpass men in Science, and even in Engineering & Technology PhDs—traditionally male-dominated—women nearly match men. At the M.Phil level, women dramatically outnumber men across both Science and Engineering.

Although women in India now perform on par with men across most STEM academic streams, their participation drops sharply in research and development, where they hold fewer than one in five roles—revealing a persistent gap between education and actual representation in scientific careers .Reviewing the recent trends, the share of women researchers in India's institutional, higher education, and industrial sectors has remained below 20% from 2022 to 2024, underscoring the persistent gender gap in R&D roles across both public and private sectors as seen in Figure 2.

Figure 2: Share of Women Researchers in Workforce (2022-2024)

INSTITUTIONAL SECTOR — 17%, 18%, 19%
HIGHER EDUCATION SECTOR — 15%, 16%, 16%
INDUSTRIAL SECTOR — 16%, 17%, 17%

■ Year 2022   ■ Year 2023   ■ Year 2024
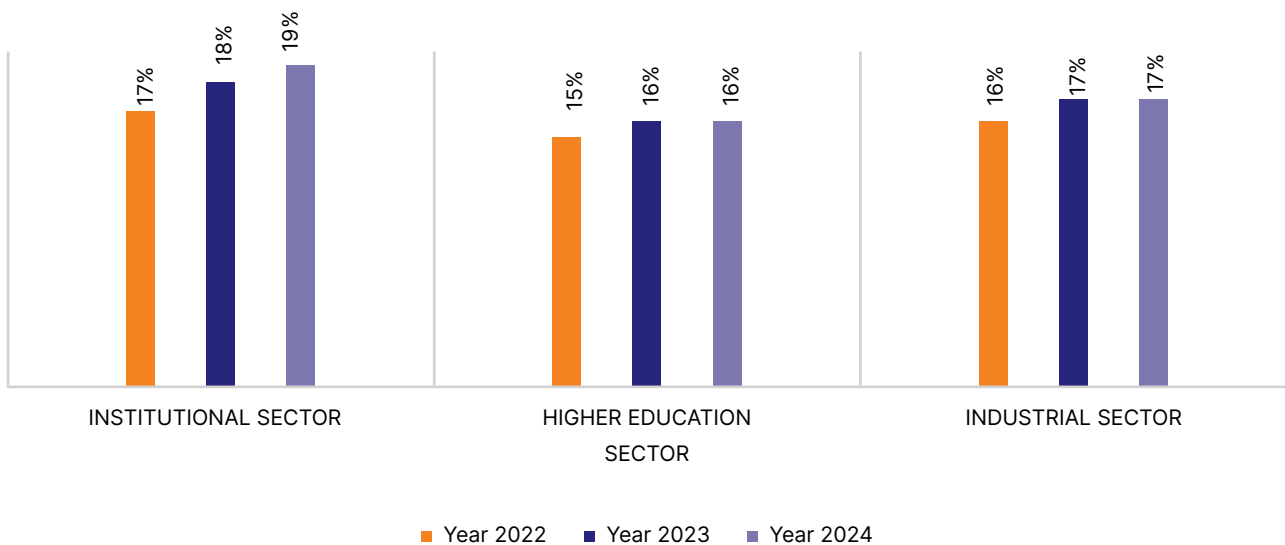
Source: R&D Statistics, Department of Science and Technology, Government of India, Centre for Technology, Innovation and Economic Research, Research Matters.in and Ministry of Science and Technology

Women's participation in research and development (R&D) across STEM sectors in India has risen gradually from 2022 through 2024. In the institutional sector, representation increased from 17% in 2022 to 19% in 2024, showing the strongest growth among all sectors. The higher education sector saw modest gains, moving from 15% in 2022 to 16% by 2023 and staying flat afterwards. The industrial sector also recorded a small rise, from 16% to 17% during the same period. The incremental growth signals that targeted efforts are making an impact, but significant barriers—including workplace bias and retention issues—still constrain many women from progressing to senior levels in STEM R&D fields

The gap widens higher up in the seniority ladder as seen in Figure3

Figure 3: Share of Women in Workforce in India (2020-2023)

PROFESSIONAL & TECHNICAL ROLES (%) — 30.30%, 29.20%, 32.90%, 32.40%
SENIOR, LEGISLATIVE & MANAGERIAL ROLES (%) — 13.70%, 14.40%, 17.60%, 14.20%

■ 2020   ■ 2021   ■ 2022   ■ 2023
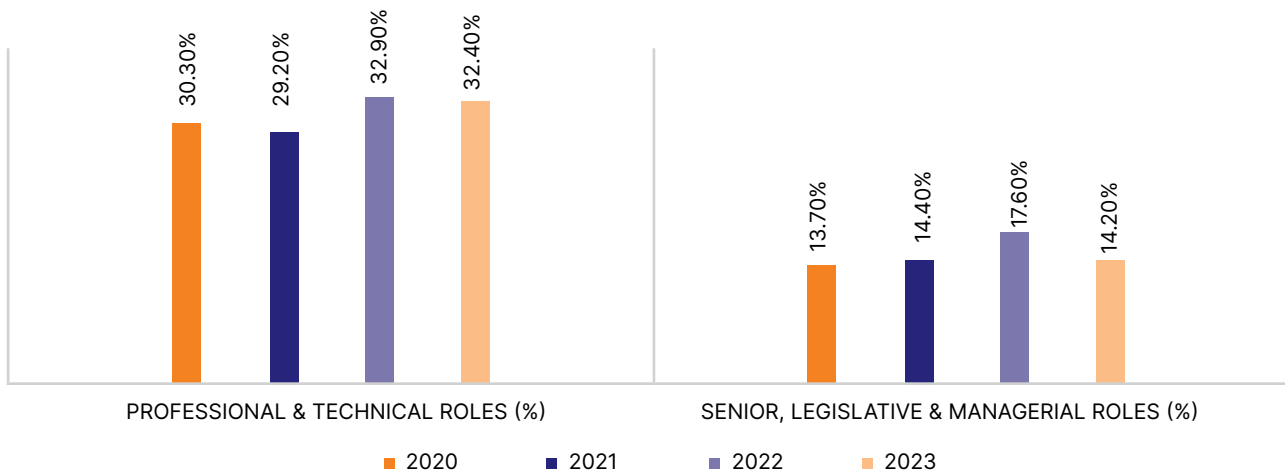
Source: Global Gender Gap Report, World Economic Forum, various years

The failure of organizations to promote and retain women in technical roles, especially at the early stages, not only reflects on the broken promotion system that perpetuates gender disparity but also results in fewer women being prepared for senior roles.[1] We use two different datasets to demonstrate this. First, we look at the trend as reported in the Global Gender Gap report seen in Fig. 3 where we observe modest gains in the share of women in senior, legislative and managerial roles as the share of women increased from 13.7% in 2020 to 14.2% in 2023 in India.

Figure 4: Representation of Women by Seniority

Source: McKinsey, Aon Report and Avtar and Seramount Best Companies for Women in India Reports

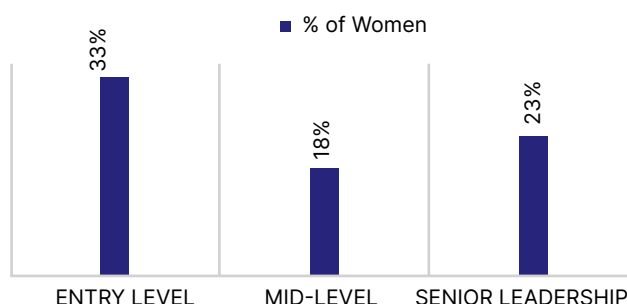These gender gaps in the workforce are driven and affected by many factors, including long-standing structural barriers, socio-economic and technological transformation, as well as economic shocks.[2]

Meanwhile, there is an emerging trend of women creating their own leadership opportunities. There has been an increase in the number of women opting to start their companies as seen below

Women Entrepreneurs

India's women-led entrepreneurship landscape has expanded steadily in recent years, supported by growing awareness, ecosystem initiatives, and targeted government programmes. By 2024, the country is home to more than 7,000 women-led tech startups, accounting for roughly 7.5% of the startup ecosystem, and nearly 48% of all startups registered in 2023 include at least one woman director. However, despite this growing presence, funding disparities remain stark: all-women founding teams receive only about 0.3% of venture capital funding in India, mirroring global patterns where such teams secure just around 1% of VC capital. This contrast underscores a dual narrative—while participation and visibility of women founders are rising, equitable access to capital and scale opportunities continues to lag behind.

Source: Tracxn/Startup India

While this is an encouraging trend, there is a noticeable absence of women leadership as startups become bigger and turn into unicorns. There are a reported 105 unicorns as of 2022. However, only 18 of these have at least one-woman co-founder.[3]

As technology forms the fastest-growing segment of India's STEM landscape—and the largest employer of STEM talent—it becomes essential to examine gender diversity specifically within tech. Deep-diving into this segment helps reveal where the pipeline strengthens, where it breaks, and what drives the most significant opportunities for women in STEM today

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[1] *https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/repairing-the-broken-rung-on-the-career-ladder-for-women-in-technical-roles*

[2] *https://www3.weforum.org/docs/WEF_GGGR_2022.pdf*

[3] *https://inc42.com/the-indian-unicorn-tracker/*

Women's representation in Technology Sector

Figure 5: Gender Distribution Across Levels in Technology

■ Male(in%) ■ Female (in%)
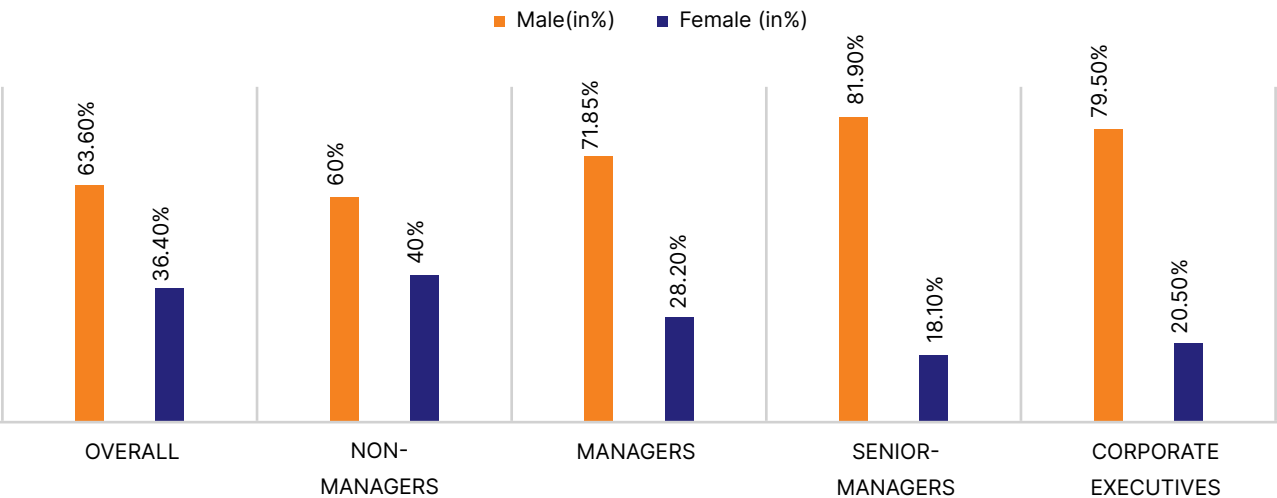
Source: Avtar & Seramount Best Companies for Women In India data as of 2025

Women enter tech in strong numbers (40%), but their representation drops sharply through the leadership pipeline—falling to 28.2% at managerial and 18.1% at senior-manager levels. A slight uptick at the executive tier (20.5%) shows that women who break the mid-career barrier tend to advance and stay. This signals a solid entry pipeline but a clear mid-level leakage that calls for stronger leadership development and sponsorship for women in tech.

Figure 6: Promotion Rate of Women and Men in Technology

■ Male(in%) ■ Female (in%)
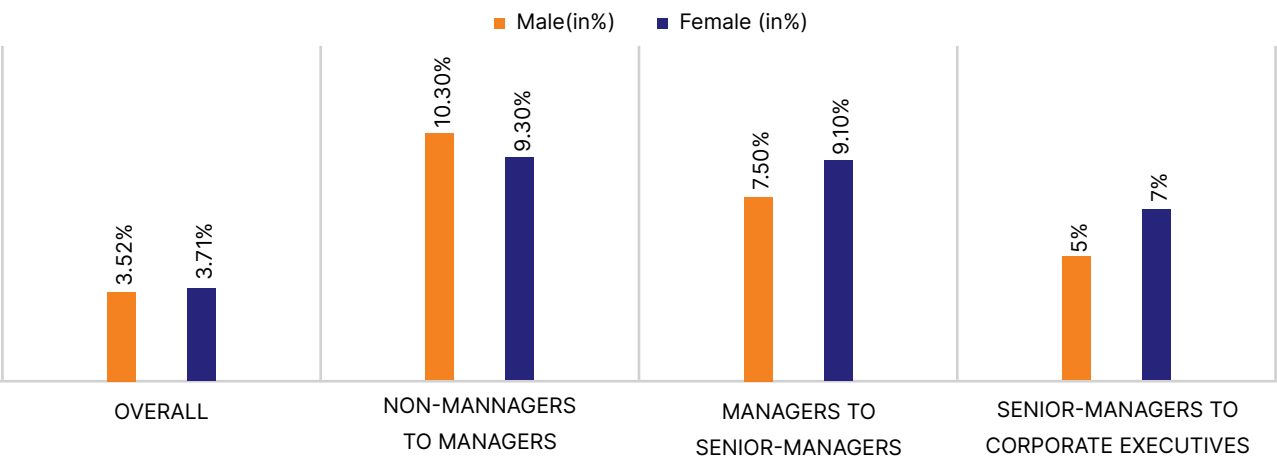
Source: Avtar & Seramount Best Companies for Women In India data as of 2025

The promotion data shows that women are advancing at comparable—and in some cases higher—rates than men as they move up the leadership pipeline. Overall, women's promotion rate (3.71%) slightly exceeds that of men (3.52%), indicating steady upward mobility. While men have a marginal edge at the first transition from non-manager to manager (10.3% vs 9.3%), women outperform men at the two most critical stages: moving from manager to senior manager (9.1% vs 7.5%) and from senior manager to corporate executive (7% vs 5%). This pattern suggests that once women enter managerial roles, their leadership progression is strong, reflecting the impact of targeted development programs, sponsorship, and more inclusive promotion practices at higher levels.

Figure 7: Attrition Rate of Women and Men in Technology

■ Male(in%) ■ Female (in%)

Level	Male (in%)	Female (in%)
OVERALL	18	16.3
NON-MANAGERS	19.2	17.1
MANAGERS	16.4	13.8
SENIOR-MANAGERS	9.8	8.2
CORPORATE EXECUTIVES	10.1	7.9
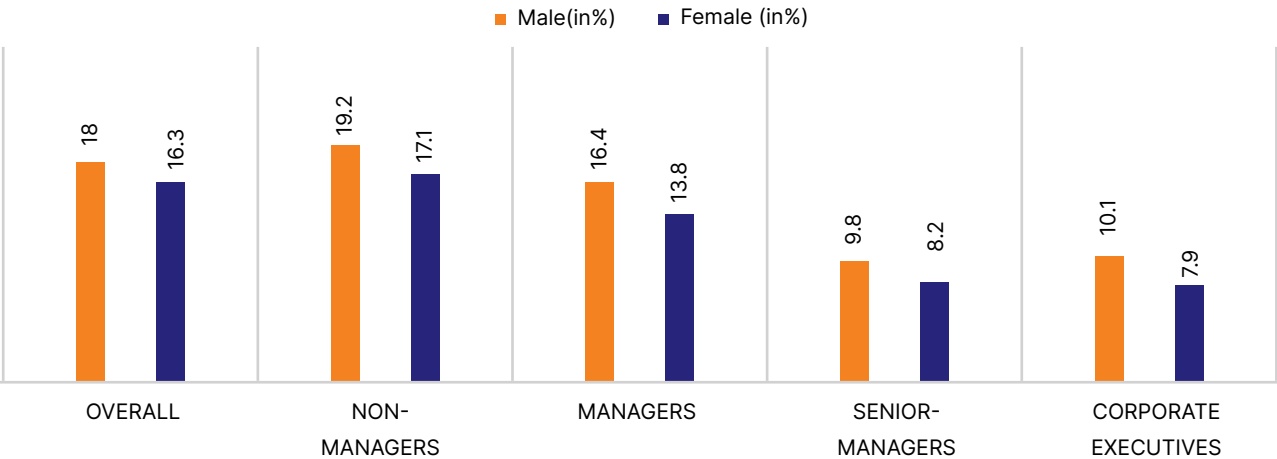
Source: Avtar & Seramount Best Companies for Women In India data as of 2025

The attrition pattern reveals that women in Technology sector consistently leave organisations at lower rates than men across all career levels, indicating stronger retention among female employees—especially as they move into leadership roles. While attrition is highest at the non-manager levels for both genders, women still exit less frequently than men (17.1% vs 19.2%). The gap widens at managerial and senior-manager levels, where women show significantly lower attrition (13.8% vs 16.4% and 8.2% vs 9.8%, respectively). The most striking difference appears at the corporate executive level, where women's attrition rate (7.9%) is notably lower than men's (10.1%). This suggests that once women progress into higher-level roles, organisational investment in leadership development, flexibility, and inclusive culture may be contributing to higher stability and stronger long-term retention among women leaders.

From technology, it is equally important to look at manufacturing—another core STEM domain where women's participation remains significantly lower, revealing a contrasting set of inclusion challenges

Women's representation in Manufacturing Sector

Figure 8: Gender Distribution Across Levels in Manufacturing
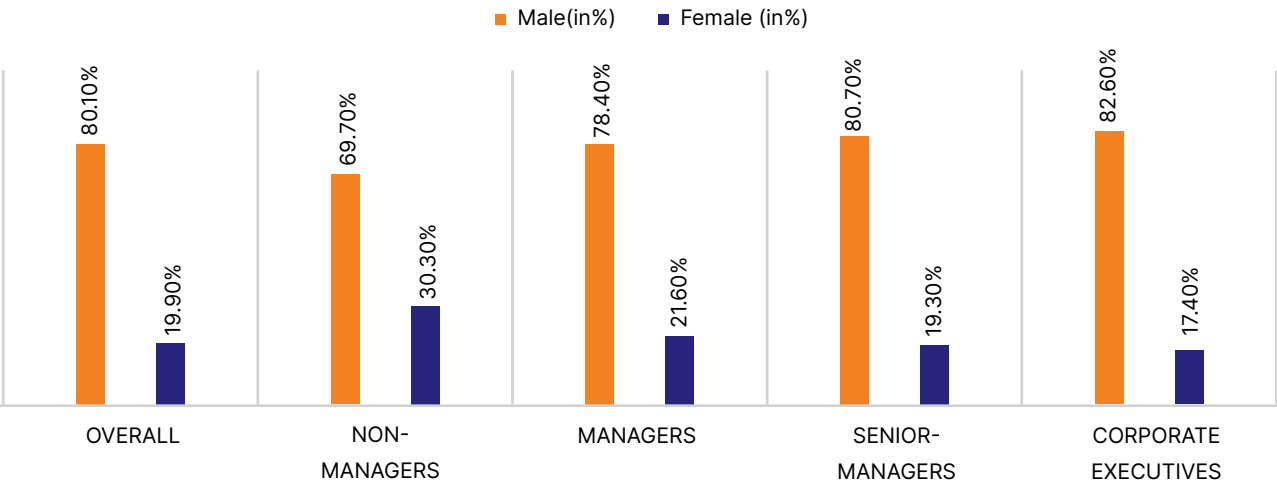
■ Male(in%) ■ Female (in%)

Level	Male (in%)	Female (in%)
OVERALL	80.10%	19.90%
NON-MANAGERS	69.70%	30.30%
MANAGERS	78.40%	21.60%
SENIOR-MANAGERS	80.70%	19.30%
CORPORATE EXECUTIVES	82.60%	17.40%

Source: Avtar & Seramount Best Companies for Women In India data as of 2025 including women in core manufacturing sector

In manufacturing, women's representation drops steadily as seniority increases—strong at entry levels (30.3%) but falling sharply to just 17.4% at the executive tier—highlighting a significant mid-career and leadership leakage in the talent pipeline.

Figure 9: Promotion Rate of Women and Men in Manufacturing

Legend: ■ Male(in%) ■ Female (in%)

Category	Male (in%)	Female (in%)
OVERALL	11.71%	10.76%
NON-MANNAGERS TO MANAGERS	27.80%	8.60%
MANAGERS TO SENIOR-MANAGERS	21.80%	0.30%
SENIOR-MANAGERS TO CORPORATE EXECUTIVES	22.80%	5.80%

Source: Avtar & Seramount Best Companies for Women In India data as of 2025 including women in core manufacturing sector

The transition data reveals a stark gender gap in advancement, especially in the crucial mid-career stages where women's progression sharply declines. While the overall movement across levels is only slightly lower for women (10.76% vs 11.71%), the early-career jump from Non-Manager to Manager shows a significant disparity—men progress at over 3× the rate of women (27.8% vs 8.6%). The bottleneck becomes extreme at the Manager-to-Senior Manager stage, where women's promotion rate collapses to 0.3%, compared to 21.8% for men—indicating a near-complete breakdown in mid-career mobility for women. Although women's advancement improves at the Senior Manager-to-Executive level (5.8%), it still lags considerably behind men (22.8%). This pattern points to systemic barriers in mid-management progression for women, likely linked to biased career pathways, limited sponsorship, and structural challenges during life-stage transitions.

Figure 10: Attrition Rate of Women and Men in Manufacturing

Legend: ■ Male(in%) ■ Female (in%)

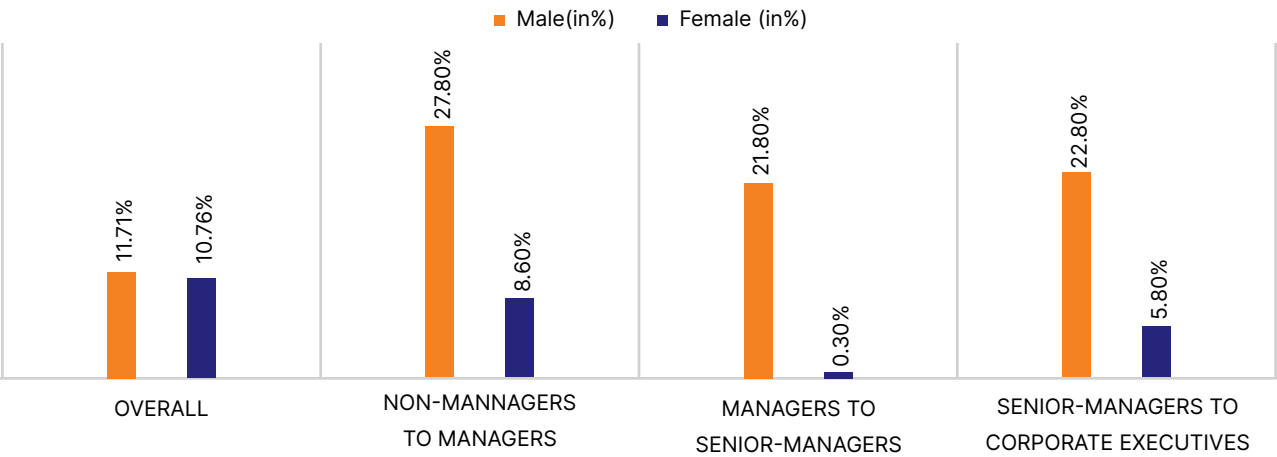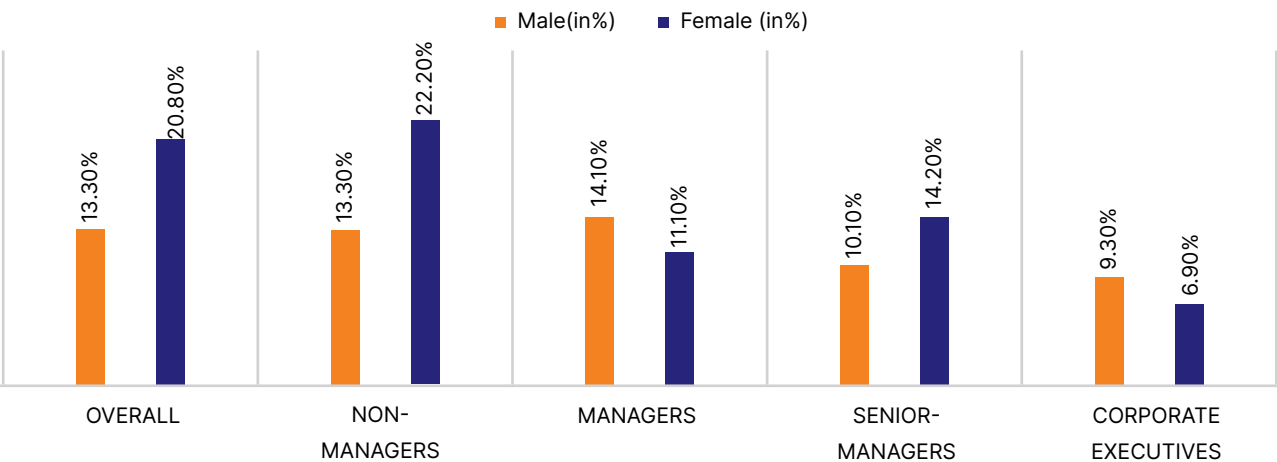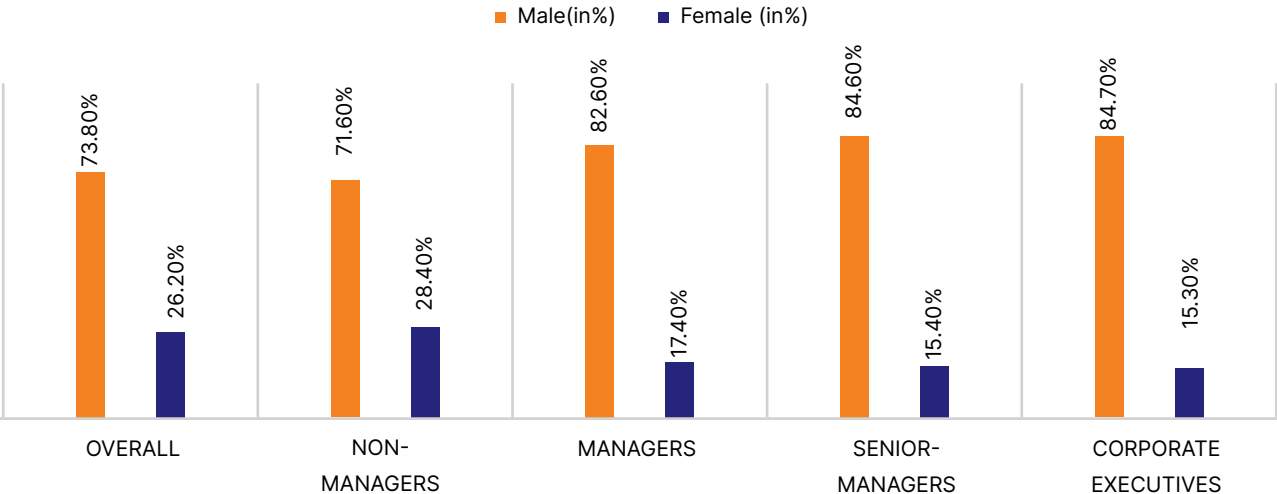|	OVERALL	NON-MANAGERS	MANAGERS	SENIOR-MANAGERS	CORPORATE EXECUTIVES
Male (in%)	13.30%	13.30%	14.10%	10.10%	9.30%
Female (in%)	20.80%	22.20%	11.10%	14.20%	6.90%

Source: Avtar & Seramount Best Companies for Women In India data as of 2025 including women in core manufacturing sector

The attrition pattern in manufacturing reveals a notable imbalance, with women exiting the workforce at significantly higher rates than men in the early and mid-career stages—an indication of persistent structural and environmental challenges in the sector. At the non-managerial level, women face the highest attrition (22.2% vs 13.3%), likely driven by demanding shift schedules, limited flexibility, and difficult shop-floor working conditions. While women show better retention at the managerial level (11.1% vs 14.1%), attrition spikes again at the senior-manager stage (14.2%), suggesting that the pressures of balancing field-intensive roles, mobility expectations, and limited support systems continue to disproportionately affect women. Interestingly, at the corporate executive level, women's attrition drops to its lowest (6.9%), reflecting stronger organisational support, more autonomy, and strategic roles that are less physically constrained. Overall, the data highlights that manufacturing organisations need to prioritise workplace safety, predictable shift structures, mobility support, and career-continuity programs to retain women effectively across the pipeline.

We further extend the lens to science and engineering, the foundational disciplines that feed talent into both tech and manufacturing. Examining patterns across these domains helps identify where gender gaps originate, how they widen through the career lifecycle, and what systemic interventions are required to strengthen women's participation across the entire STEM ecosystem.

Women's representation in Science and Engineering Sector

Figure 11: Gender Distribution Across Levels in Science and Engineering

Legend: ■ Male(in%) ■ Female (in%)

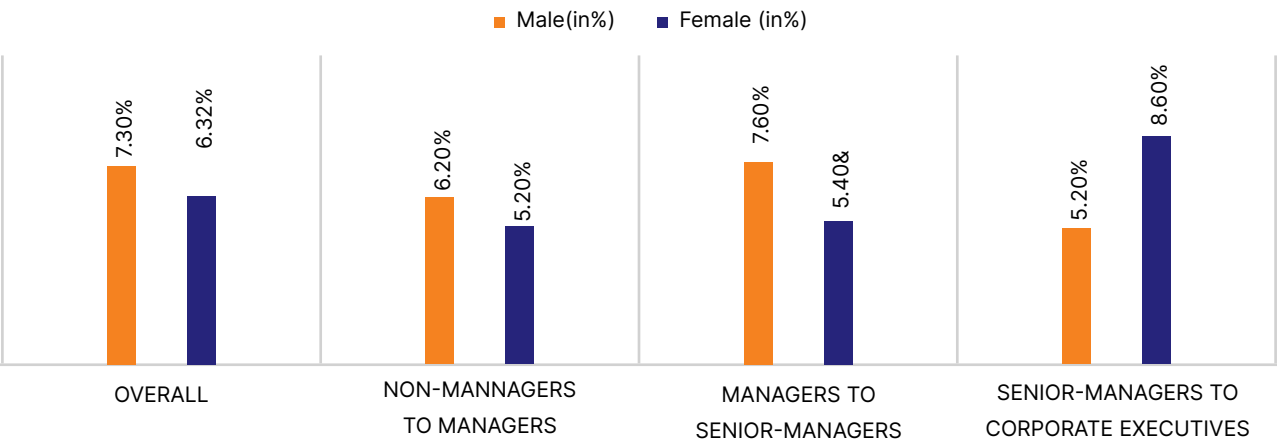|	OVERALL	NON-MANAGERS	MANAGERS	SENIOR-MANAGERS	CORPORATE EXECUTIVES
Male (in%)	73.80%	71.60%	82.60%	84.60%	84.70%
Female (in%)	26.20%	28.40%	17.40%	15.40%	15.30%

Source: Avtar & Seramount Best Companies for Women In India data as of 2025

In Science & Engineering, women form a modest share at entry levels (28.4%) but their representation drops sharply to nearly 15% in senior manager and executive roles, indicating a steep leadership gender gap.
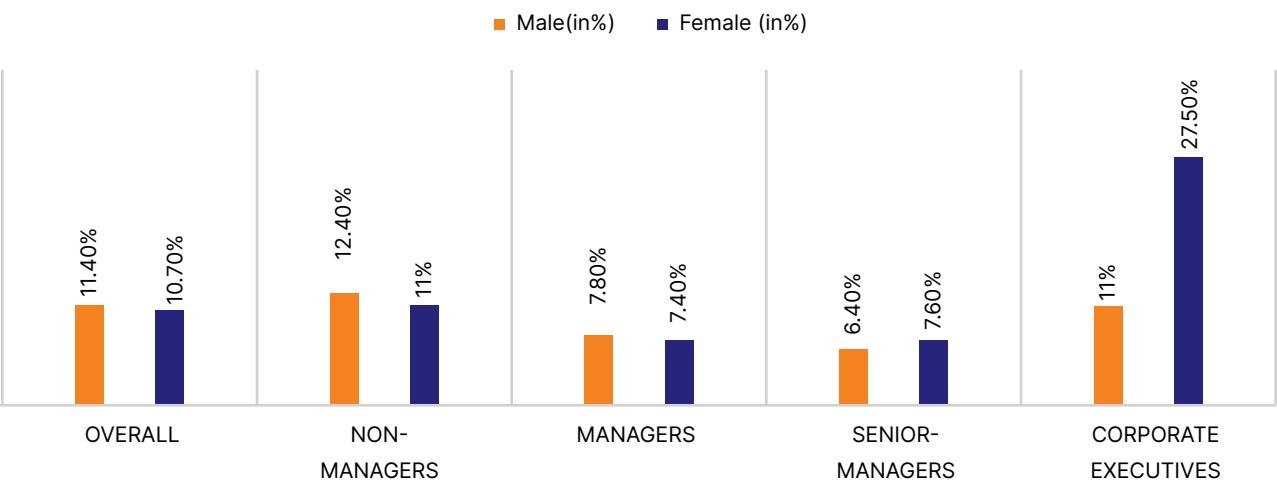
Figure 12: Promotion Rate of Women and Men in Science and Engineering

Male(in%) ■ Female (in%)

Category	Male(in%)	Female (in%)
OVERALL	7.30%	6.32%
NON-MANNAGERS TO MANAGERS	6.20%	5.20%
MANAGERS TO SENIOR-MANAGERS	7.60%	5.40&
SENIOR-MANAGERS TO CORPORATE EXECUTIVES	5.20%	8.60%

Source: Avtar & Seramount Best Companies for Women In India data as of 2025

In Science & Engineering, women's promotion rates lag behind men's at the early and mid-career stages, with lower movement from non-manager to manager (5.2% vs 6.2%) and manager to senior-manager (5.4% vs 7.6%). This points to a persistent mid-level advancement gap. However, the trend reverses sharply at the top: women senior-managers progress to corporate executive roles at a significantly higher rate than men (8.6% vs 5.2%). This suggests that once women break through the mid-career bottleneck, they demonstrate strong upward mobility—highlighting the need for targeted development and support earlier in the leadership pipeline in the Science and Engineering Sector.

Figure 13: Attrition Rate of Women and Men in Science and Engineering

■ Male(in%) ■ Female (in%)

Category	Male(in%)	Female (in%)
OVERALL	11.40%	10.70%
NON-MANAGERS	12.40%	11%
MANAGERS	7.80%	7.40%
SENIOR-MANAGERS	6.40%	7.60%
CORPORATE EXECUTIVES	11%	27.50%

Source: Avtar & Seramount Best Companies for Women In India data as of 2025

Overall attrition rates for men and women in Science & Engineering remain comparable at junior and mid-career levels, with women showing marginally lower exits in non-manager and manager roles. However, the trend reverses sharply at senior levels. While senior-manager attrition is relatively stable for men (6.4%) and women (7.6%), attrition among women corporate executives spikes dramatically to 27.5%, more than double that of men (11%). This sharp rise suggests that women who reach the highest leadership tier may be facing intensified pressures—such as isolation, limited peer networks,

heightened performance scrutiny, or insufficient organisational support—leading to significantly higher dropout rates at the top.

2.2. Existing Efforts

Gender inclusion is not a new idea in India. Initiatives by stakeholders and government policies have been put into practice, time and again, to promote and retain women in science, technology, engineering and mathematics (STEM). The given section explores some of the key interventions of stakeholders in India working to support women and girls in science. Gender inclusion was brought to light in policy discussions in the 1970s, especially with the publication of 'Towards equality: Report of the Committee on the Status of Women in India' by the Department of Social Welfare in 1974. Nearly every Five-Year Plan since has included focused policies for women in education and employment; and the sixth Five Year Plan devoted a separate chapter to women and development (Kaur, 2018). Prominent members of the scientific and research industries and members of science academies (detailed later in this chapter) have also made efforts throughout the past several decades to draw attention to the achievements by and challenges before Indian women in science (Godbole and Ramaswamy, 2015). In this section, we focus only on documenting some of the more well-known programs within four main sectors. We have arranged stakeholders across these sectors in Table 1.

Table 1: Main stakeholders supporting women in science

Sector	Category	Examples
Government ministries and inter-agency schemes	⊙ Ministries ⊙ Departments ⊙ Autonomous Institutions	⊙ Department of Science and Technology ⊙ Department of Biotechnology ⊙ NITI Aayog ⊙ Ministry of Education (formerly MHRD) ⊙ National Assessment and Accreditation Council
Academies and associations	⊙ Academies of elected fellows	⊙ Indian Academy of Science ⊙ Indian National Science Academy ⊙ National Academy of Science, India
Academia	⊙ Institutes of national importance ⊙ Universities funded and run by the Central Government ⊙ Universities funded and run by state governments	⊙ Indian Institute of Technology, National Institute of Technology, Indian Institutes of Science Education and Research ⊙ Indian Institute of Science, Jawaharlal Nehru University, Banaras Hindu University, Central University of Punjab ⊙ Manipal Academy of Higher Education, Goa University, Amrita University, Punjab University
Industry and private sector	⊙ Industry in partnership with UNESCO ⊙ Corporate social responsibility initiatives ⊙ Corporate policy	⊙ Progress Software India ⊙ P&G India ⊙ Infosys Foundation ⊙ Tata Group ⊙ Covestro India ⊙ Larsen and Toubro

Government interventions

In India, improving gender equity and inclusion in science, technology, engineering, and mathematics have long been part of on-going efforts to promote and enhance nationwide capabilities in science. DST set up a National Task Force for Women in Science, in 2005, supported by Indian National Science Academy. It aimed to develop a conducive milieu for social, cultural, economic, and geographic inclusion for scientific pursuits. Various schemes were initiated to support women in science. Some of them are highlighted below in table 2.

Table 2: Government of India schemes for Women in Science

Department	Programme	Description
DST	Gender Advancement for Transforming Institutions (GATI)	A novel pilot programme, GATI, aims to enhance India's scientific laboratories and institutions of higher education by mainstreaming and institutionalizing gender inclusion across all connected departments. It is adapted from the United Kingdom's Athena SWAN Framework. As an institutional intervention, GATI will create sensitization and awareness, develop an inclusive culture, and address systemic barriers and structural issues hindering women's participation in science education and careers (https://dst.gov.in/scientific-programmes/scientific-engineering-research/women-scientists-programs)
DST	Consolidation of University Research for Innovation and Excellence in Women (CURIE)	Aims to provide opportunities in research, technology development, and self-employment. CURIE facilitates the development of infrastructure in women-only universities to attract, train, and retain promising female students in the fields of science and technology (https://www.indiascienceandtechnology.gov.in/programme-schemes/women-schemes/consolidation-university-research-innovation-and-excellence-women-curie)
DST	Vigyan Jyoti	Provides a more level playing field for meritorious girls in high school to pursue STEM in their higher education. It offers girl students from rural backgrounds with exposure to resources that will aid their journey from school to jobs of their choice in the field of science (https://www.vigyanjyoti.com/)

Department	Programme	Description
DST	Indo-U.S. Fellowship for Women in STEM	A joint initiative of the DST and the Indo-U.S. Science & Technology Forum, this scheme provides opportunities to Indian women scientists, engineers, and technologists to undertake international collaborative research at premier institutions in the United States (https://www.indiascienceandtechnology.gov.in/ programme-schemes/women-schemes/indo-us-fellowship-women-stemm)
DST	Women Involvement in Science & Engineering Research (WISER)	Aimed at building scientific capacity and retaining/ promotion of women researchers; includes international partnerships (e.g., India-Germany) in STEM (https://www.igstc.org/home/wiser_2025)
DST	Technology Development & Utilization Programme for Women (TDPuW)	Supports technology adoption, awareness and training of women for technology-related issues and capability building (https://www.dsir.gov.in/technology-development-and-utilization-programme-women-tdupw)
DST	WISE KIRAN (Women in Science & Engineering – KIRAN)	A holistic scheme covering fellowship (PhD, post-doc), institutional support to encourage women's participation at all stages of STEM careers. (https://dst.gov.in/scientific-programmes/wise-kiran)
Indian Council of Medical Research (ICMR)	Women Scientist Scheme	Provides incentives for women to pursue healthcare research after a career break. It focuses on career development, funding and skill-building (https://dhr.gov.in/sites/default/files/ Women%20Scientist%20Scheme.pdf).
Department of Biotech-nology (DBT)	Biotechnology Career Advancement and Re-orientation Programme (BioCARe)	The program offers career development specifically for women early in their careers, targeting both employed and unemployed women scientists under 45 years of age. It is designed for women attempting to return to careers after a break. The Ministry of Earth Sciences, Ministry of Defence and others are making similar efforts (https://www.indiascienceandtechnology.gov. in/programme-schemes/women-schemes/ biotechnology-career-advancement-re-orientation-programme-biocare).

Department	Programme	Description
Central Board of Secondary Education (CBSE) under MoE	Udaan	Aims to enrich the teaching and learning of science and mathematics in schools by addressing the three dimensions of education – curriculum design, transaction and assessments. The goal is to redress the low enrolment ratio of women students in prestigious engineering institutions. (https://www.india.gov.in/spotlight/udaan-program-give-wings-girl-students).

Source: UNESCO (2024-25)

Academic and research institutions

For this section, we have taken examples of a few academic and research institutions, including institutes of national importance and central and state universities, that have made efforts to support women in science. Our list is not exhaustive but represents leading higher education institutes that set the standard, in many ways, for other Indian universities.

We see instances of immense work in India to increase the participation of women in science. For instance, the Indian Institutes of Technology have introduced supernumerary seats (seats in excess of the usual or requisite number) that are reserved for women and intended to increase women's enrolment to 20 per cent. Another way that institutes of national importance support women in science is by establishing gender initiative and support cells. IIT Bombay has had a dedicated Gender Cell since 2002, working to advance equality and awareness, and prevent violence, to make the campus safer for and more supportive of women. Similarly, many of the National Institutes of Technology (NITs) have women's cells to protect women against harassment. The NITs can boast of more women enrolled than the IITs (Verma, 2018), with NIT Andhra having the highest percentage of women students than the other NITs at 30 per cent. NIT Jaipur has reserved 30 per cent of its scholarships for women while NIT Hamirpur has a Prime Minister's Merit Scholarship for female students. Similarly, various Central universities have made determined efforts to support their female faculty, from gender non-specific tenure policies to focused discussions on increasing women's representation in the sciences. One of the best examples of such efforts is the Bengaluru-based Indian Institute of Science's 'Tenure Clock Pause' policy (IISc, 2017). This system allows anyone (regardless of gender) to stop their tenure clock for one year per child, with a maximum extension of two years. Such measures are meant to relieve some of the pressure on parents who have children and still want to maintain a career path towards seniority and promotions despite increased responsibilities at home.

State universities have implemented many institutionally spearheaded efforts to support women in science. Goa University has a policy on 'gender equity and sensitivity' whose guidelines explicitly call to improve women's participation and representation in STEM and any other disciplines in which women are under-represented. Similarly, Kurukshetra University established a Women in STEM forum in 2019 to create awareness about careers, opportunities and funding schemes in STEM for women students, researchers and faculty. The forum aims to retain women in science by facilitating interactions with senior and accomplished women faculty members in STEM within and outside the university.

Table 3: Other notable interventions by academic institutes

Institute	Programme	Description
IIT Delhi	Initiative for Gender Equity and Sensitization	One of this programme's mandates encourages gender dialogue in STEM. Additionally, IIT Delhi offers student and career counselling for women to support their move from study to industry (IIT Delhi, 2020). The institution has also announced an office of diversity and inclusion.[6]
IIT Kharagpur	Student grants exclusively for undergraduate women	A significant portion of this IIT's student grant programme (₹65 lakh) is earmarked for undergraduate women. The institute also provides counselling and outreach initiatives for women looking for a career in science (IIT Kharagpur, 2024).
IIT Bombay	WINGS (Women INspiring Growth in STEM) Scholarship	Announced for 2026-27, but part of the 2025 planning phase: 100% tuition support for female undergraduate STEM students. (IIT Bombay, 2024)
IIT Madras	Women Leading IITM	An alumni-sponsored initiative that aims to guide and support women graduates through professional networking, scholarships and mentorships.
Indian National Science Academy / National Academy of Sciences, India (Joint)	IAP-WiSTEMM India	A collaborative initiative to assess and enhance women's participation in STEMM (Science, Technology, Engineering, Mathematics & Medicine) and support students & early-career women scientists.
Tata Institute of Fundamental Research	Child Care Association	The institute's Women's Cell managed this initiative so successfully that not only does it provide quality child care, but in such a way that both parents benefit from its services.
Indian Institute of Science	Amba Subba Rao Fellowship for Women Researchers	A fellowship launched in 2025 for early-career women scientists in brain-ageing research to strengthen retention and leadership of women in advanced STEM research (https://iisc.ac.in/women-in-science/)

Source: UNESCO (2024-2025)

Industry

In principle, scientists are trained to pursue careers in research and industry after obtaining an academic degree. There is an extreme and unexplained gap between the number of women who graduate with advanced degrees in science and those who are employed in a relevant industry. To reduce this gap, the science industry in India can best help women in science by providing unbiased work opportunities, safer and more supportive work environments and infrastructure, and boosting women's participation in science both as part of their Corporate Social Responsibility (CSR) activities and normal operations. Women scientists seeking jobs outside academic research face particular hurdles when trying to join the science industry, especially because of their limited access to science and engineering (National Academy of Sciences, 2020). Despite progress in this area, common recruitment and hiring practices make extensive use of traditional networks and have historically overlooked the available pool of women. Hiring practices in most industries now use artificial intelligence and machine learning (AI) within their systems. Researchers have raised concerns that many AI hiring software can have in-built biases that favour men and disparage women and minorities (Cheong et al., 2020; Dattner et al., 2019; Gebru, 2019). We need to establish an Indian alliance between academia and industry, with clear considerations of gender equality and gender-based opportunities to improve work avenues and work environment for women.

Many companies have taken initiatives to boost women's participation in STEM, recognizing both the inherent value of such efforts and how a stronger, more diverse workforce contributes to the company. Companies like Infosys, Honeywell, HP have actively promoted women's participation in science as part of their CSR activities. Creating more inclusive environments with infrastructure improvements, crèches to support working parents, mentorships and community outreach to inspire young women studying science are all examples of what some of these leading companies are doing to support women in science.

The IT industry offers several examples of initiatives for women employees. For example, Microsoft established its Codess community for female coders to explore ways of promoting gender diversity in the engineering field. Codess aims to create a forum that inspires female coders and helps them achieve professional goals through networking events, mentoring and sharing advice and experiences.

The industry has advanced more initiatives like these, not only to address the challenge of inviting women into science but also to help retain them in the field. The science industry and its ecosystem directly impact women scientists' career trajectories. The industry plays an important role as an actor and stakeholder for women in science, both in their progression from higher education to employment in the sciences and in their retention.

Table 3: Other notable interventions by academic institutes

Organisation	Programme	Description
Tata Motors	Kaushalya Program, EmpowHER, SCIP – Second Career Inspiring Possibilities	Kaushalya trains women for all-women manufacturing lines (Safari/Harrier), provides diploma/B.Tech pathways. EmpowHER develops women leaders. SCIP brings women back after career breaks. Result: white-collar women grew 6.7% → 9.3% (FY22–FY25 YTD).

Organisation	Programme	Description
Tech Mahindra	Women Leaders Program (WLP), ReStart, Maternity Assistance Program	WLP is a 9-month leadership track. ReStart supports women returning from breaks with long induction, mentorship. Aggressive hiring: 50% women freshers, 30% women lateral hires.
Persistent Systems	Women's Returnship Program and ,Aspire and Engagement & Learning Platforms	Returnship program helps women resume tech careers. The initiative contributes to higher engagement—reflected in a 15% rise in eNPS and 12% reduction in attrition over three years
Integra Software Services	WINGS, Inclusive Development Academy, DEI Data Dashboard	WINGS (since 2008) supports women's growth. Strong data-driven DEI model tracking promotions, retention, satisfaction. STEM pipeline building via rural hiring, NAPS apprenticeships & academic partnerships.
Jio-bp	R-Aadya, I-Connect and Her Vibe, Her Tribe,	R-Aadya, (career advancement for women), I-Connect mentoring for female employees, and Her Vibe, Her Tribe, an exclusive women's ERG, along with sensitization programmes and diverse hiring practices
Pega India (Pegasystems)	Return-to-Work Program, Sponsorship for Senior Women, Inclusive Design	Return-to-Work helps women technologists re-enter STEM roles. 50% internal promotions indicate high retention of women.
Cairn Oil & Gas, Vedanta Limited	Gender Intelligence and Leadership Program (GIL), Together We Excel: Empowering Women Employees and Emerging Women Leaders Program.	In 2022, Cairn surpassed its target of 30% for women in campus hiring, achieving 34%. Benefits for new mothers, such as extended maternity leave, part-time options, and creche reimbursements, V-Lead, which offers mentoring for senior women leaders,

Source: Inclusion Victory Book - Avtar

2.3. Challenges & Barriers

Evidently, India has achieved commendable progress in some areas of gender equality in the STEM domain, but still faces critical challenges for science to flourish is a gender-equitable way. In this section, attempts have been made to draw attention to the multi-dimensional obstacles that women face in pursuing a career in science, including infrastructure and access to resources, but also (perhaps more importantly) socio-cultural biases that begin at home and permeate the workplace and education systems.

There is a wealth of existing reports on the status of women in science, including valuable datasets and analyses. The most important of these publications include: The Indian National Science Academy's report on 'Science Career for Indian Women' (2004); The Department of Science and Technology (DST)'s 'National Task Force for Women in Science' report (2009); R. Godbole and R. Ramaswamy's (2015) 'Women Scientists in India' AASSA book chapter; and the Inter-Academy Panel on Women in Science's A Road Map for Women in Science and Technology – A Vision Document (2016).

It is essential to examine these key reports to contextualise the problem and, in so doing, identify areas of progress and gaps that need to be addressed. Mounting evidence suggests that too many interventions designed to promote women in science are not guided by sufficiently broad and multi-faceted understanding of the problems women face (Beeler et al., 2019; Blickenstaff, 2005). While it is important to recognize that India has achieved significant progress on some key indicators for supporting women in science, especially in education, some systemic barriers and challenges within India's education system continue to challenge women's access to education.

According to many studies, the most significant barrier for women in science is maintaining a career within institutions that are designed by and for men (Easterly and Ricard, 2011). There exist inherent biases in many existing educational, professional, and industrial institutions, namely that they have been designed based on larger societal norms that primarily reflect the socialisation and learning styles of men (Alfred, 2001). The progression from education to career does not happen in a vacuum. An individual's journey is influenced by a multitude of sociocultural factors (Malone and Barabino, 2009; Swarup and Dey, 2020). While a significantly higher number of women have acquired scientific degrees when compared with men, and this trend is consistently increasing over time, women remain a minority among persons employed in science in India.

As we have seen in earlier sections, the rapid progress and increase in women's Gross Enrolment Ratio (GER) in higher education in India is commendable, reflecting a national culture that is pro-education. However, some experts refer to as the 'paradox of a gender inclusive university' whereby women have gained access to higher education but have been largely relegated to non-professional, non-market, non-prestigious subjects, constrained in their choice of subject to 'feminine appropriate' disciplines and subsequent careers (Chanana, 2007). This is largely because subject and career choices in India are often family-driven, where the values of the parents dominate (e.g., their daughter's safety or how certain careers might affect her marriageability). In some of the more prestigious subjects within the sciences, including chemistry (42 per cent), physics (38 per cent), and engineering (32 per cent) women's enrolment remains relatively low. However, other fields, like the life sciences (56 per cent), microbiology (67 per cent), and Information Technology/computer sciences (54 per cent), boast high enrolment of women (Ministry of Education, 2020a). In India, this has been described as 'horizontal gender segregation' whereby gender divisions are reinforced within sub-fields and specialisations (Tambe, 2019).

The social, cultural, and infrastructural barriers confronting women in science are well-documented, and may seem obvious, but must be included in this report. This is because they have a profound bearing on women's transition from education to then building a career in science research, participating in the science industries, and finally assuming leadership in the field. It should be noted

that the relatively small increase in female faculty over time does not reflect the increase in women obtaining doctorates (Ministry of Education, 2020a).

Social and cultural barriers

Social and cultural barriers that hinder equitable access include class and caste barriers that inhibit access to education (and subsequent employment), infrastructural and cultural barriers that inhibit access to education, and social and cultural barriers that inhibit women from participating in the workforce (Kurup et al., 2010; InterAcademy Panel on WiS, 2016). In India, especially, the extreme diversity of cultural and ethnic groups requires a deep understanding of regional and other context-specific factors to pinpoint how to best address challenges (DST, 2009). Marriage, children, household pressures and other family responsibilities have also been noted as reasons for women to either not join the workforce in the first place, or to leave it (Mitali, 2021). These hierarchical and patriarchal norms spill into the workplace and affect women scientists' day-to-day interactions and activities negatively (Gupta, 2016)

 Many women take career breaks after they marry, after the birth of their first or second child, to attend to other duties of family care under family pressure, when burdened by increased household labour, or for other personal and family reasons. Women who have pursued a scientific education and continued into a scientific career face additional and specific cultural barriers and social challenges within science industries (Kurup and Maithreyi, 2011). The challenges include a lack of representation in decision-making bodies, lack of leadership positions, fewer job opportunities, lack of mentorship opportunities, difficulties obtaining promotions, lack of funding opportunities, infrastructure and safety issues, and other issues related to the workplace. It is as important to address these issues, since these factors often concern young women when they decide whether to pursue a scientific field of work or to continue after a career break (Kurup and Maithreyi, 2011).

$$E = mc^2$$
$$U_g = mgh$$
$$u = 1/2\,k\,x^2$$
$$V = u + at$$
$$V = ut + 1/2$$
$$v^2 = u^2 + 2as$$
$$F = ma$$
$$F = friction$$
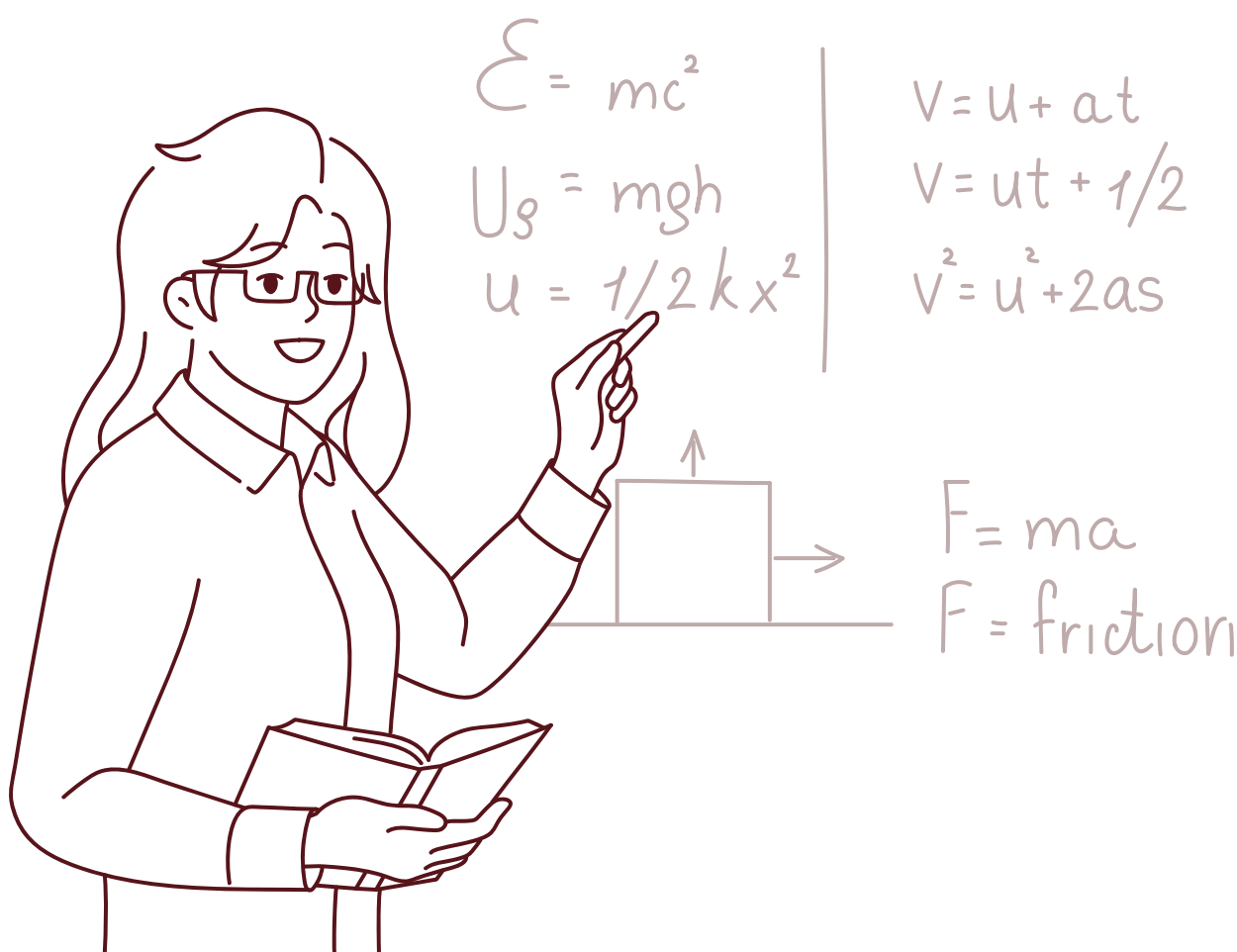
Horizontal segregation and the glass ceiling

Horizontal segregation seems to become more pronounced higher up the career ladder, with fewer women represented in prestigious academic and scientific fellowships, memberships of scientific communities, and leadership in research labs. Some social historians have connected this culture of exclusion to the social power dynamics of the early twentieth century when wealthy, privileged-caste men dominated scientific communities (Sur, 2012).

The minority status of women in the sciences can also have a paradoxical 'heightened visibility' effect whereby the performance and qualities of this minority are magnified and generalised to all women (Kanter, 2008). Many women struggle to balance professional and familial responsibilities, and therefore are more likely than men to take time off from their careers. Because of their heightened visibility, women scientists' time off is not understood as a common and expected result of the norms of India's socio-cultural context. Instead, women who take time off are compared to men who do not take time off and found lacking. Therefore, women, in general, are stereotyped as inferior employees and scientists. This contrasts with men in science, who are constrained by different yet interrelated social norms, but do not have the additional societal expectation of the unpaid, unacknowledged Second Shift (Hochschild and Machung, 1989). These deep-seated, and often generational, social norms are slow to change, despite rapid social progress and can reinforce the glass ceiling for many women.

The glass ceiling is further reinforced by social biases and pressures from family, peer groups and even from the women themselves. Global trends point to a general decrease in overt sexism or crude gender biases (Etaugh & Bridges, 2017). Encouragingly, in India, issues of salary gaps and overt gender discrimination in the workplace are improving (Goel, 2018). However, subtle and 'invisible' sexist behaviour is strongly present, so that women are relegated to less strategic roles with limited opportunities for leadership or recognition (Chanana, 2007). This has also been called 'second-generation gender bias' (Ibrarra et al., 2013). Such subtle biases are most prevalent in the day-to-day workplace experience and create a culture that is less supportive or appreciative of women's contributions. In one workplace ethnography (Goel, 2018), researchers found that men generally perceived women as 'outsiders' intruding on their space, as being less intellectually capable, and as poor performers overall. The study also found that women were less likely to speak up or complain about such treatment for fear of losing their jobs – serving only to reinforce the invisible bias. Several similar research studies point out that this trend is especially prevalent in countries with strong patriarchal norms, including India (Ernst and Young, 2015; Hassan, 2014; Radhakrishnan, 2012).

Other examples of the invisible biases that women experience include:

⊙ Hierarchy with deep patriarchal trends (Gupta and Sharma, 2003).

⊙ Social perception of Indian women's idealised roles in Indian culture (Gupta, 2016).

⊙ Performance assessment criteria that reward behaviours culturally more acceptable to male scientists (Etzkowitz, 2007), such as staying late at the office or lab.

⊙ The push for women to engage only in culturally 'acceptable sciences', such as the biological sciences (Swarup and Dey, 2020), rather than entering fields such as physics, chemistry and some engineering disciplines.

Another potential challenge for women can come from the social values many are raised with, especially in terms of ensuring marriageability. Earning a degree in science is a matter of pride in and of itself and can increase the marriage prospects of the degree holder (Mukhopadhyay, 1994). This can translate into a lack of enthusiasm for the sciences as a career, in that some may view their work in the sciences as just that – work, just like any other job, and often just a means to an end

(Arora, 2021). A degree in the sciences can open doors to lucrative job opportunities and invite social prestige, and it would be no surprise to find many students engaged in science for that reason alone. This approach to a career in the sciences is legitimate, given that individuals have preferences that should be respected, but it invites the question 'How can women be inspired to pursue science as a career?' Such passion and enthusiasm are necessary to create inspired and committed scientists who can make the changes outlined in this document. While we are mindful of not placing the burden of change upon women alone, it is also important to recognize the role that enthusiasm plays in the process. Studies have demonstrated that the level of enthusiasm impacts subject selection by students, especially school-age girls (González-Pérez, Mateos de Cabo, and Sáinz, 2020).

Emphasis on invisible biases should not be interpreted as a dismissal of more visible forms of discrimination or violence against women. Women's safety in public places, including the workplace, is of utmost importance when discussing inclusive and supportive working environments for women. The specially appointed Justice Verma Committee dissected existing Indian laws on women's safety, including human trafficking, sexual harassment, verbal sexual assaults, acid attacks, honour killings and child sexual abuse, as well as marital and non-marital rape (Verma et al., 2013). The committee's report found that these laws had good intentions but lacked enforcement. The report also discussed the need to address stereotypes through education and perception reforms, reforms in terms of medical and legal examinations, and police and electoral reforms. Additionally, it offered several suggestions for improving public safety for women including well-lit roads, CCTV cameras in public transport, security in public transport after 5:30 p.m., and increased sanitation facilities for women. The Indian Government has taken these recommendations seriously, and they should also factor into any policies on gender equality. This includes women in science programs, where women's safety should be reinforced as a primary concern.

Privilege and poverty

The hurdles that women face in scientific research and industry indicate that those who achieve success in their fields are often privileged in one way or another. To ignore the influence that privilege and high social status has in academia and other research organisations would be wrong. A significant proportion of India's population still lives close to or below the poverty line, with all the social and economic challenges that this entails. To make a career in science viable and attractive for people living in such conditions requires creative and strategic approaches.

Men living in poverty may also face challenges in establishing a career in science; however, there is ample evidence to show that women undergo far more employment hardships because of poverty (Pande, 2007). To this end, we need more qualitative or similar research to determine exactly what privileges or resources propel certain women beyond the challenges that impede so many others who have equal or greater intellectual capacity (Arora, 2021). Success stories and recommendations from women in below-poverty-level (BPL) circumstances would go far in inspiring all segments of the population and avoid alienating those who were not born into wealth and privilege.

Lack of Data

Much of the historical research on women in science has focused on the education sector – fittingly enough, as it is most often the first stage of an individual's path to their career. Subsequent stages of professional development (employment, career gaps, proportion of public funding, for example) have only been taken into consideration more recently; therefore, there is limited information on these areas. Similarly, technology and engineering, being the most popular fields in higher education and representing the fastest growing industries, are the arena for most of the gender equality related research (Parikh and Sukhatme, 2004) leaving other fields of science under-represented. Women's representation in local, start-up industries within the sciences is also largely unstudied. Given the Indian Government's recent support for start-ups and India-based industries (e.g. the Ministry of Commerce and Industry's 'Startup India' scheme), understanding how women are represented in

this burgeoning sector of the economy would help ensure that future programmes include a gender component in their design and implementation.

Without sex-disaggregated data on how scientists transition from school to careers, and how these careers progress, it is difficult to pin-point areas where women struggle particularly. We also need more research on the barriers that women from minority populations face in terms of access to education, reasons why they might not choose science as a field to study, and other influencing factors that could, potentially, be addressed in the future. This kind of data may exist in alternative formats but may not have a sex-disaggregated lens. Work towards transforming existing data into sex-disaggregated data will be very useful.

There are some exceptions to this general trend, including annual reports by the National Institute of Educational Planning and Administration (NIEPA) and its dedicated Centre for Policy Research in Higher Education (CPRHE). These annual publications often include sex-disaggregated data, to some extent, but are not free to access and so may be unobtainable for stakeholders, including the public. Another exception is a recent study that analysed the proportion of Indian female and male principal authors published in peer-reviewed journals and found that male authors out-publish females by 3:1 (Thelwall et al., 2019). The study also found that women published far more in 'people-oriented' fields where the primary focus was human subjects; whereas the focus of male principal authors was more 'thing-oriented' – that is the material sciences. This and other notable findings supplement existing research in gender stereotypes in the sciences, including a generalised preference for certain fields among female and male students. These preferences also produce more challenges for individuals who attempt to enter a field not aligned to gender norms.

The lack of important data seriously impairs discussions on how to address the lack of women in science, for this report, we have used available data to identify a set of important gaps where women in science are missing, and areas where significant progress has been made. For those sectors and fields for which data are missing, we have made inferences, where possible, to ensure that these important areas are not ignored and to encourage more studies to fill the gaps.

While the nature of many challenges is fundamentally social (and multidimensional), and require time and slow change, it is important to develop a framework of understanding to move forward. In this context, a research study was designed and conducted to understand the challenges faced by women in STEM and how to provide them with the right career enablers to increase women's representation in STEM. The next chapter details out the research study and the outcomes.
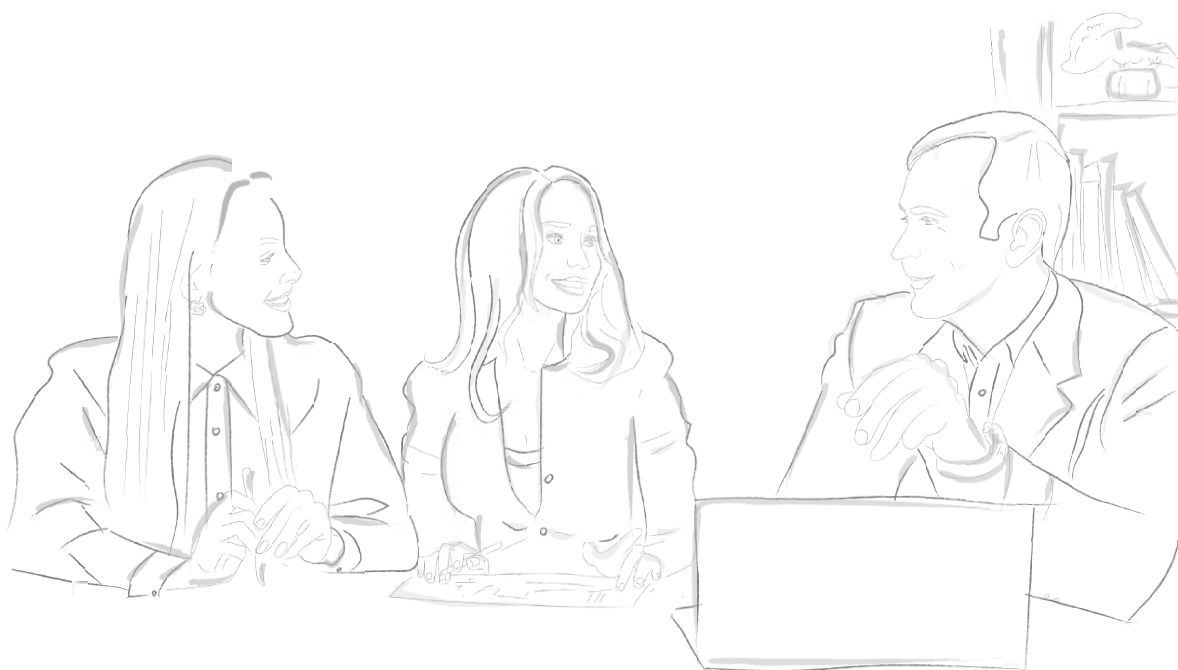
3.0 The Research Study

The primary research undertaken aims to substantiate the existing research and data regarding the challenges faced by women in STEM and how to provide them with the right career enablers to increase women's workforce in the STEM sector in the country.

3.1. Aim of the Study

The primary research undertaken aims to substantiate the existing research and data regarding the challenges faced by women in STEM and how to provide them with the right career enablers to increase women's workforce in the STEM sector in the country. The study also aims to identify and showcase best practices and policies that companies have for gender inclusion and furthering women's employment in STEM. Consequently, it aims to create a purposeful framework for organizational stakeholders towards helping women to increase their representation and have successful careers in STEM.
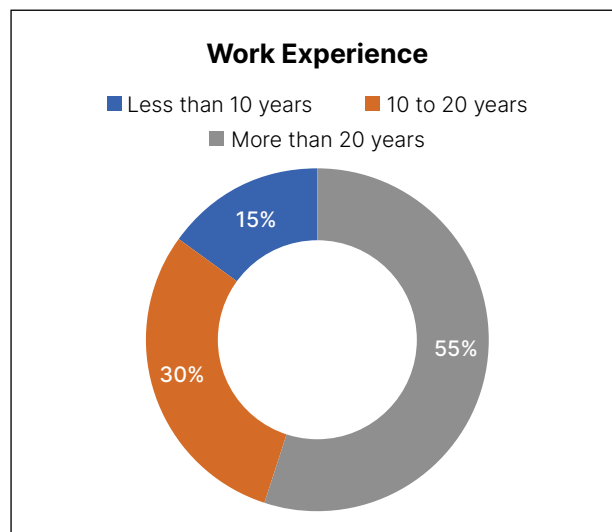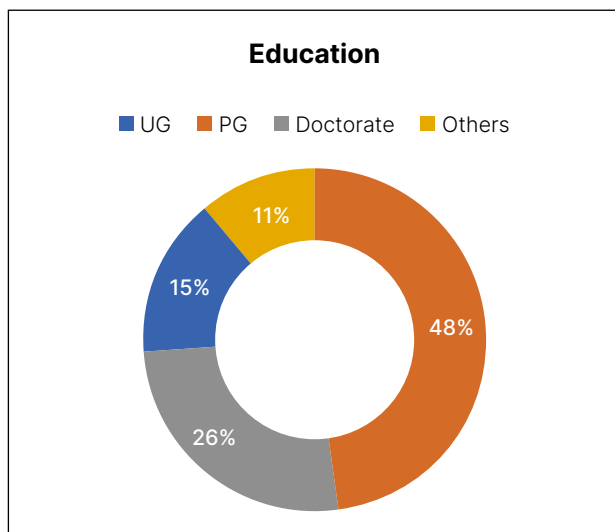
3.2. Methodology

The data was collected through a survey questionnaire shared online with women working in STEM. There were 27 responses received in total for the survey, which had a combination of qualitative and quantitative questions. In-depth interviews were conducted to gain insights from senior women leaders working in STEM.

3.3 Respondent Demographics

The key characteristics of the respondent demographic is presented through the charts below:

Education

- UG
- PG
- Doctorate
- Others

- 11% Others
- 15% UG
- 48% PG
- 26% Doctorate

Work Experience

- Less than 10 years
- 10 to 20 years
- More than 20 years

- 15% Less than 10 years
- 30% 10 to 20 years
- 55% More than 20 years

3.4. Data Interpretation and Analysis

The survey aimed at finding out the key enablers required by women which would help them sustain and progress in their careers in STEM. Career Enablers, as per research, are frameworks of support that help professionals in successful career pursuit. They can be either self-initiated or organization provided.

Organisation Type

- Corporate
- Academia

- 11% Academia
- 89% Corporate
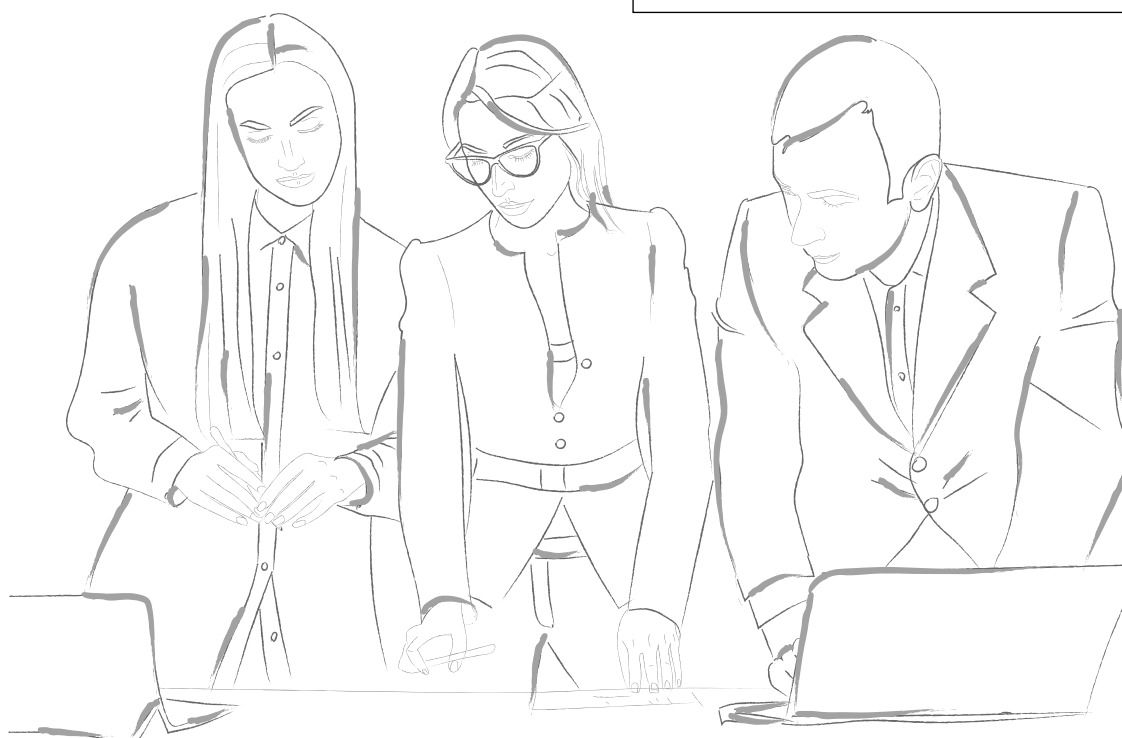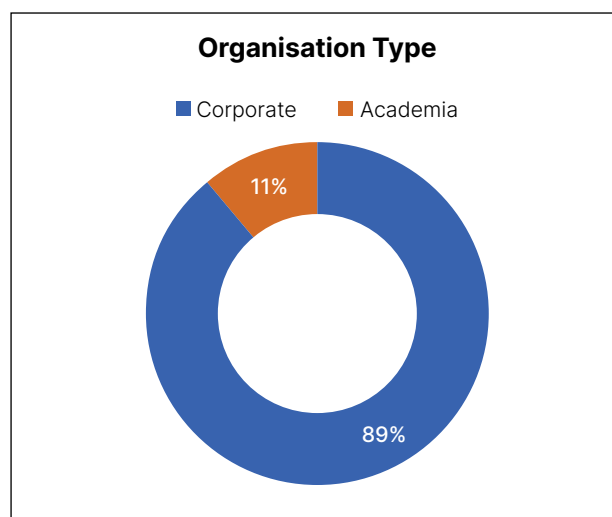
The career enablers ranked most to least important by the overall respondents is depicted below:

The following definitions of the career enablers were provided to the respondents in the survey.

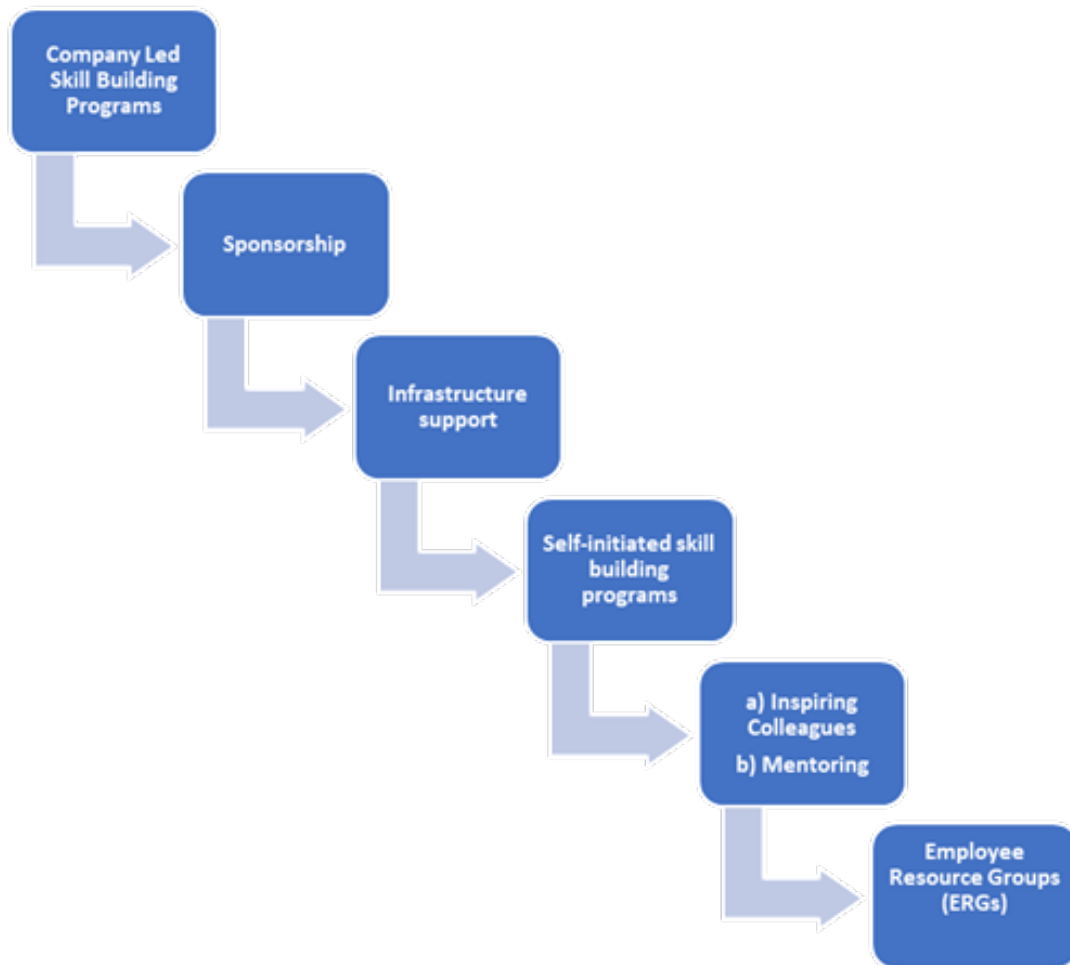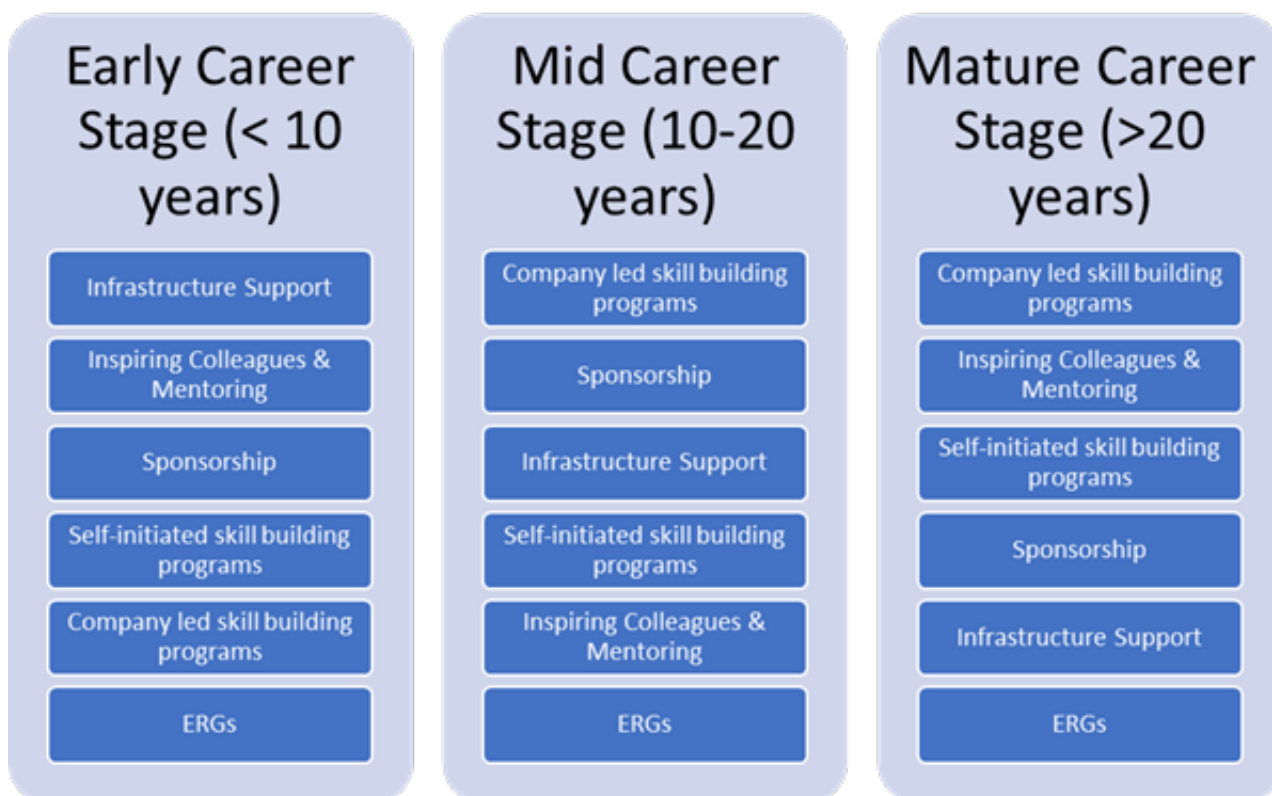- Company Led Skill Building Programs: This refers to programs by an organization to help employees acquire specific skills, both technical and soft skills to improve productivity

- Sponsorship: This refers to senior leader (sponsor) is made responsible for the development and success of a junior professional (sponsee).

- Infrastructure support: This refers to creche/ childcare center provided by the company within its office area or childcare of employees via tie-ups with child-care centers or flexible working arrangements including work from home, flexitime etc.

- Self-initiated skill building programs: These are skill building programs (like courses and certifications) that a woman professional enrolls herself for.

- Inspiring Colleagues & Mentoring: This refers to an individual or group which is comprised of a woman professional's colleagues/friends and of which she is an active member.

- ERGs (Employee Resource Groups): Structured networks of employees that meet (physically or virtually) to discuss challenges faced commonly by members of the network and initiate programs/ solutions for these challenges

One of the key inferences from the ranking is that strategic career enablers like company led skill building programs and sponsorship are of greater importance than enablers like flexible work and creche facilities.

Early Career Stage (< 10 years)	Mid Career Stage (10-20 years)	Mature Career Stage (>20 years)
Infrastructure Support	Company led skill building programs	Company led skill building programs
Inspiring Colleagues & Mentoring	Sponsorship	Inspiring Colleagues & Mentoring
Sponsorship	Infrastructure Support	Self-initiated skill building programs
Self-initiated skill building programs	Self-initiated skill building programs	Sponsorship
Company led skill building programs	Inspiring Colleagues & Mentoring	Infrastructure Support
ERGs	ERGs	ERGs

3.5. Key Highlights

The analyses reveals that there should be customized initiatives to enable women in STEM to retain them and help them grow in their careers.

The study has also come up with a framework of best practices specific for recruitment, advancement, and retention of women in different career stages pertaining to STEM sector, which is as follows:

Career Stage of Women	Recruitment Practices	Advancement Practices	Retention Practices
Early-Career	1. **Diversity Slate** - to ensure there is no conscious or unconscious bias which creeps in the hiring process, organization mandates to have minimum ONE woman candidate as a part of the diversity slate; failing which the hiring managers cannot close the position	1. **Robust Women's Development, Leadership and Progression Programs**. Women at all levels to receive access to a network of leaders, alongside the opportunity to acquire new skills through on-the-job learning, rotational assignments, coaching & mentoring, skill building sessions, career intentionality workshops.	1. **Maternity and Parental Benefits & Policies** Enabling women at this significant life stage to balance work and life with industry - Key highlights include – Primary Caregivers = Maternity = Adoption = Surrogacy = 26 weeks + Additional optional leave for full-time and part time employees = 4 weeks of paid maternity leave due to pregnancy-related illness, as well as 12 weeks of unpaid leave.

Career Stage of Women	Recruitment Practices	Advancement Practices	Retention Practices
Early-Career	2. **Diverse interview panel** – appoint at least one woman in the interview panel, who is not from HR or Talent Acquisition team. 3. **Gender-neutral job postings** using Machine Language 4. Engaging with local communities to hire women on the shop-floor 5. Bootcamp/ job shadowing/ Internship programs for diversity recruits	2. **ERG initiatives with focus on skilling** at all levels 3. Leadership Training for Career Pathing and growth (including industry-academia partnership models)	2. **Returning Mothers Program** - Coaching and staffing support from experienced women executives to successfully transition new mothers from maternity, back to successful careers. 3. **Remove gender barriers**: include building sensitivity through unconscious bias training for managers to avoid gender stereotyping. 4. Comprehensive POSH support including hot-line support to report workplace sexual harassment for all levels.
Mid-Career	1. **Alumni Network-** to ensure organisations are able to not only hire gender talent from the marketplace but also attract boomerang talent – who are acquainted with the organization culture 2. Every year have a **focused hiring drive** attempted at attracting women talent 3. **Referral bonus** for diversity talent recruitment 4. Having a **formalized second career women recruitment** program	1. Robust mentoring and sponsorship programme to build a healthy pipeline of women leadership talent. 2. Groups made for and by women employees to get together to share ideas and experiences and seek advice on personal as well as profession development.	1. **A well-being dashboard** to keep employees informed on a regular basis about 'disconnected' time off, flexibility and predictability options, campaigns around 'unplugging', and sessions on gratitude and happiness, and holistic well-being programs. 1. Regularly **raise awareness of biases among people** managers during key activities for their workforce throughout the year, for example prior to their yearly talent planning and performance discussions.

Career Stage of Women	Recruitment Practices	Advancement Practices	Retention Practices
Mature-Career	1. For every open leadership position, **at least 30% of resumes sourced to be of women candidates** (Internal or external). Selection is initiated only after receiving 50% of female candidate resumes. 2. Elimination of the use of historical salary data when making internal and external job offers. 3. Gender equity review in leadership level succession planning	1. Programs to encourage and equip women to take up people management responsibilities 2. Internal sponsorship and mentorship programs focused on skilling of Women in Technology, specifically for senior and middle level women leaders to enhance their technology and leadership skills.	1. **MD Connect Series** provides an excellent opportunity for women colleagues to network with senior women leaders and Managing Directors in the organisation. 2. Publication of diversity reports for accountability and transparency

4.0 Global & Indian Best Practices

Based on research on Women's employment in STEM in 2024-25, below are some of the best practices collated from different companies:

Honeywell

There are multiple policies and governance structures in place to support diversity, equity & inclusion via workplace harassment prevention policy, recruitment policy, benefits policy through day care as well as insurance, comprehensive pregnancy care program and more. The definition of family for Salary Advance in cases of bereavement or medical emergencies has been expanded to include partners, in addition to spouses. Adoption leave has been extended to cover single-parent adoption & surrogacy. Definition of family for relocation purposes has also been expanded to include partners. POSH policy has been made gender neutral. Maternity policies now cover adoption leaves for single parents & same-gender parents, & hospitalization policy benefits have been extended to include partners. These policies and structures not only ensure accountability but also drive continuous progress towards creating a more inclusive & diverse workplace at Honeywell with our goal to continue the momentum to shape a more inclusive future.

HP

Empowering Women at HP: A Holistic Approach At HP,empowering women is a strategic commitment, driven by initiatives that support their personal and professional growth. Programs like the Upsurge Women Talent Management Council pair high-potential women with senior leaders for mentorship and leadership development. For women in middle management, the Disha Program offers a six-months blended leadership training designed to help them transition into senior roles confidently. HP also supports women re-entering the workforce through the Reboot Program, offering skill refreshers and mentorship to ease their reintegration, particularly in tech roles. Recognizing the importance of supporting working mothers, the Matrikas Initiative and the Creche Policy provide wellness resources, flexible work options, and daycare support. The Family Flexible Work Arrangement Policy further enables women to balance professional and personal responsibilities. Through Lean In Circles, HP fosters a strong peer community, encouraging women to share, grow, and lead with authenticity. These efforts collectively build an inclusive, empowered future for women at HP.
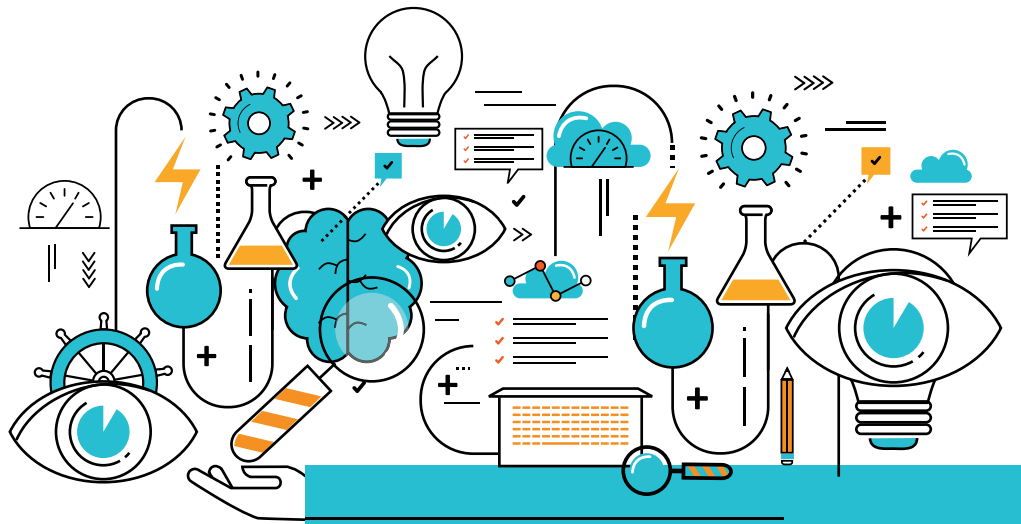
Thales India Pvt Limited

Thales is dedicated to creating an inclusive workplace b empowering women employees and advancing them into leadership roles. Through, structured talent reviews, diverse learning opportunities, focused recruitment drives, strategic partnerships with women-led networks various learning communities and leadership programs like the Fly High Program, Thales nurtures high-potential women, enabling career progression across national and international levels. Additionally, the launch of the IDEAL Council (framework of DEI in Thales) underscores Thales' commitment to Diversity, Equity, and Inclusion, ensuring an even more supportive environment for women at work. We believe that true empowerment requires trust and flexibility. Our hybrid work model promotes flexibility, allowing employees to balance professional and personal commitments with three days in the office and two remote working days. Our support extends far beyond the workplace. At Thales, we prioritize well-being and security with industry, leading benefits: enhanced maternity leave, on-site childcare, 24/7 medical support, and robust insurance coverage that safeguards our employees and their families. We make sure to not let any woman stay beyond working hours to make sure their safety is not jeopardized. We, at Thales want women to achieve everything that they deserve. We believe in nurturing the nurturer itself.

BOSCH

At Bosch Limited, Diversity, Equity, and Inclusion (DEI) are not just initiatives; they are integral to our core values and deeply embedded in our organizational culture. Our motto,"Be #LikeABosch," reflects our commitment to fostering an environment where every individual is welcomed, respected, and valued, regardless of their background. We believe that diverse perspectives drive innovation and enhance our ability to meet the needs of our global customers. Our women centric developmental programs/initiatives provide tailored mentorship that equips women with the skills and confidence needed to ascend to leadership roles, devlop clarity on their career goals, build confidence and resilence, growth and wellbeing . In 2024, Bosch Limited achieved an impressive overall participation rate of 49% for women trained across various initiatives. This reflects our commitment to empowering women and fostering an inclusive environment that supports their professional growth and development. Through targeted programs, we continue to create pathways for women to excel and lead within our organization. We prioritize safety and respect, ensuring that every woman feels valued and secure in her work environment. Our flexible work arrangements and comprehensive parental leave policies reflect our understanding of the importance of balancing professional and personal responsibilities. At Bosch, investing in women is not just a policy; it's a core value that shapes our future leaders and strengthens our organization as a whole. Embracing diversity is not just a moral imperative; it is a strategic advantage that propels our success and shapes a brighter future for all.

Schindler India Pvt. Ltd.

Coping with challenges like a high attrition rate and an insufficient talent pool among women, the organization has a targeted recruitment drive to boost women's participation. About 50% of campus hiring is focused on hiring women in the entry-level for roles in the factory. For leadership roles, the talent mapping includes women candidates from the same and allied industries.

Schindler has adopted inclusive policies like work from home, remote working, and day-care facilities for employees. A holistic approach for women employees aims to support expectant mothers with medical assistance during pregnancy, and ensures safe travel amid an inclusive infrastructure.

The talent pipeline of women is being strengthened through upskilling sessions like Open Dialogues, the Female Leadership Development programme for high potential women in individual roles, and the Women in Leadership programme.

A signatory of Women Empowerment Principles (WEPS), Schindler India's diversity, equity, and inclusion vision is 'Winning Through Diversity'. People managers have been trained on the inclusive leadership 'Be An Ally' programme.

The discussions around DEI are all conducted through the year. Alongside an annual inclusion month and recognition of male allies, the Inclusion & Diversity newsletter discusses the success stories of women employees.

KEC International, RPG Enterprises

Countering challenges like insufficient talent pool, lack of resources, and mobility constraints, the organisation has been working towards engaging women in operations, manufacturing, and engineering services. There have been concerted efforts to hire women from tier-1 and tier-2 engineering colleges (IITs/NITs), as part of the Engineering Leadership Trainee (ELT) and Post Graduate Engineering Leadership Trainee (PGELT) program. Through the ELTs, women are hired from local colleges across various countries where KEC has its projects (UAE, Oman, and Uganda). There are Group Management Resource (GMR) programs for MBA graduates from tier-1 city campuses across the country alongside lateral hire from competitors and allied industries

To ensure talent retention, there are targeted events like periodic connect with senior leadership apart from engagement activities planned across the year. These include one-one mentoring sessions by senior leadership, women-friendly policies (flexi hours, maternity, and sabbatical), and Wisdom Quest Policy (which encourages higher studies). For the advancement of women talent, KEC has timely job rotation across locations, departments and roles, and role enlargement for high potential women employees. E-learning modules on technical and behavioral competencies also help them to enhance their capabilities. For top talent among women, the organization offers exposure through external conferences and webinars.

Building an inclusive workplace, the organization conducts regular sessions on gender sensitization, Unconscious Bias, POSH Act, to name a few. Regular meetings with HR-BPs, department heads, and senior leadership help align the goals.

With inclusive rewards and recognition platforms to appreciate the contribution, fun events, and celebrations across festivities, inclusion efforts also comprise emotional wellness programs in collaboration with Juno Clinic and Practo.

KEC International, RPG Enterprises

At KEC, male allyship plays a pivotal role in driving inclusion across levels. The focus is on sensitizing senior leadership on the importance of gender diversity with support from the parent company (RPG Group) for diversity hiring.

The organization has periodic and open discussions with leadership and teams to avoid any roadblocks. There is business support in establishing sustainability governance agenda, which focuses on diversity and inclusion.

ABB

ABB is committed to diversity, inclusion, and equal opportunity for business success, and a stronger workforce. The organization strives for a culture where individual differences are welcomed and celebrated. While there are efforts to build the capabilities of the potential women leaders under the RISE program, ABB intends to extend support to meritorious underprivileged women.

Under the program called 'With Her Beside Her', a pool of mentors is being created within the organization. A group of young women, which ABB is supporting through an NGO to complete their graduation, will be mentored by the pool. Through this program, the leaders will get a real-time opportunity to interact with the female protégé outside ABB and help them navigate their professional and personal journey. They will also get a chance to learn various aspects of mentoring with specific input on mentoring from ABB and external mentors.

The organization has also initiated managers into a coaching program where trust is built through conversations. ABB also has a male allyship program to bring about a culture of gender equity and inclusion.

Volvo Group India

As a global company, Volvo has been witnessing accelerated growth in India. At the same time, Volvo is looking for opportunities to attract, develop and retain a gender-diverse talent pool.

The company has faced challenges with lower women representation due to gender stereotypes within the workforce, unavailability of women with the required skills for automotive assembly in and around the location, and the flexibility ratio due to the changing demand. The inclusion index based on the internal employee engagement score in the previous year did not match the expectations of the organization.

Assessing the limitations and challenges, opportunities were identified for women, for which unskilled and semiskilled women who were the closest match were selected. A special five-week boot camp ensured the success of this significant initiative. Both men and women were also sensitized to co-working, appreciating diversity, and complementary skill sets.

As a result, there has been an increase in diversity ratio, women technicians on the shop floor, reduction in defect per truck, women technicians were found to cause zero faults, and an increased intake of the program with a mindset shift amongst the male workforce, apart from the efficiency improvements.

Volvo Group India

To counter the challenge of representation of women in the captive centers, there has been a focus on women hiring. 'ExcelHer', a unique career restart program created exclusively for women and is among the many efforts by the organization to increase diversity in various aspects.

Lean-In circles, a peer-to-peer women networking platform, empowers women to achieve their ambitions and is facilitated by Women colleagues across levels in Volvo Group India.

To reinforce a culture of inclusion for better engagement and retention of the hybrid workforce, the 'Volvo for All' policy aims at creating an inclusive culture to foster supportive energy and encourage individual growth and strong teams. Diversity and Inclusive Leadership Workshops have been conducted for nurturing an inclusive mindset:

For inclusion, the organization has rolled out new benefits, policies, and programs like recognizing the role of equal parenting, increasing paternity leave while birth and adoption to 3 weeks. Male employees, both single and married, can avail themselves of the childcare benefit. The organization also marked the International Men's Day and the International Day of Persons with Disabilities.

Through concerted efforts by the I&D council, HR Leadership, and the Country Management Team members that encouraged the initiatives, the gender diversity ratio has increased by 5%.

Volvo's Country Management Team Members are allies in improving women's representation in the company. In the previous year, 30% of the women talent were appointed as managers, a first in their careers. The Women in Manufacturing Program devised and managed by the business leader of the Trucks Plant has increased the ratio of women in the plants by 4%.

The organization will soon launch inclusion Labs to increase awareness on gender equality, non-discrimination, and leverage people's potential.

GE Healthcare

With 24% of the total workforce being women, GEHC faces challenges like tight regulations by the government for women in shifts.

A focused initiative called Women in Operations (WIO) under the GE Women's Network (GEWN) aims to employ women in technical, manufacturing, and operational roles. It focuses on women's leadership skills, expanding their networks, building career opportunities, and sharing best practices and experiences. These facilitate the development of women in operations through three main pillars – attract, invest, and grow-- that help to actively retain women talent.

Leadership commitment for inclusion and diversity plays a huge part in the development of women's talent and leaders in the organization. For this, there is a structured operating mechanism consisting of a leadership team, I&D steering committee, employee resource group hubs, and site representatives with active participation across all levels of the organization. GEHC focuses on grooming talent within bottoms up and on lateral hires.

The infusion of women's talent is carried out through programs like GE SCDP (Supply Chain Development Program), and GE GET (Graduate Engineer Trainee) for college freshers. The organization strives to balance the equation by actively hiring competitive women talent for 50% -80% of the SCDP. GEHC is also planning an all-women factory.

> **GE Healthcare**
>
> Inclusion is fostered through leadership accountability and commitment, building awareness through education and open dialogue, aligning talent and diversity priorities, and strengthening and promoting the culture of belonging.
>
> Allyship and advocacy play a key role within the organization. I&D moment sharing, the celebration of talent, and driving the initiatives with people leaders and managers as KPI measured across functions. The affinity group of GEWN and WIO also have male members, and leaders (male and female) are invited to networking events, role model talks, etc.

Global Best Practices

United States – Leading Practices in Inclusion & Workplace Equity

US companies emphasize comprehensive family benefits, inclusive healthcare, equal opportunity mandates, and transparent governance structures. Many organizations offer gender-neutral parental leave, fertility and surrogacy support, and gender-affirming healthcare coverage as part of their insurance plans. The definition of "family" has been widely expanded to include domestic partners, same-gender spouses, and blended-family structures. Robust anti-harassment and non-discrimination frameworks—aligned with EEOC guidelines—ensure accountability, with regular bias-prevention training and mandatory reporting channels. Top employers also provide returnship programs for caregivers, mental-health support, and structured pathways for women and underrepresented groups to move into leadership roles.

Singapore – Fair Workplaces Through Progressive & Flexible Policies

Singapore companies follow the city-state's Tripartite Guidelines on Fair Employment Practices, ensuring non-discriminatory hiring, promotion, and reward systems. Workplaces commonly implement flexible work arrangements, including compressed weeks, partial telecommuting, and predictable shifts—especially beneficial in STEM and manufacturing sectors. Family benefits include gender-neutral parental leave, childcare subsidies, and family-care leave that includes parents, partners, and in-laws. Many employers offer gender-neutral POSH frameworks, strong migrant-worker protections, and inclusive leadership pipelines for women through structured mentorship and board-readiness programs. Adoption and fertility benefits, including for single parents, are increasingly standard.

Denmark – Equal Opportunity Through Social Supports & Inclusive Work Culture

Denmark is known for policy-aligned corporate DEI standards that prioritize psychological safety, equal pay, and shared caregiving. Companies commonly provide fully gender-neutral parental leave, with earmarked "father quotas" to encourage equal responsibility at home. Family definitions include cohabiting partners, same-gender couples, and adoptive parents. Workplace flexibility is institutionalized: employees have the right to request flexible schedules, remote options, and reduced hours without penalty. Strong anti-harassment policies—with external ombudsman channels—and transparent pay audits ensure accountability. Many organizations implement gender balance targets for leadership roles, supported by nationwide childcare access and re-skilling programs for women transitioning into tech

Finnish companies operate within one of the world's most inclusive policy ecosystems, emphasizing work-life balance, equal caregiving, and safe, inclusive workplaces. Most employers offer fully gender-neutral and equal-length parental leave, extensive childcare entitlements, and fully inclusive healthcare policies covering partners regardless of marital status. Anti-harassment laws apply uniformly across genders, and workplaces maintain zero-tolerance codes of conduct with independent reporting systems. Many Finnish companies have advanced inclusive leadership frameworks, ensuring transparent succession planning and gender-balanced candidate slates. Additionally, STEM employers often offer on-site childcare, career-continuity routes after long breaks, and funded upskilling programs specifically for women technologists.

As these best practices show, organisations are already experimenting with successful models to advance women in STEM. The next step is to translate these learnings into a structured, organisation-wide framework that can be adapted, scaled, and embedded for long-term impact.

5.0 Key Recommendations/ Implications/Call to Action

Achieving meaningful progress for women in STEM requires coordinated action across the ecosystem

Achieving meaningful progress for women in STEM requires coordinated action across the ecosystem. Government, academia, and industry must work together to close structural gaps, strengthen talent pathways, and create environments that support women at every stage. The Three Ps—Policies, Programs, and People—anchor this effort, emphasizing the need for forward-looking policies, targeted interventions, and active participation from all stakeholders. When these elements align, they enable sustained and scalable impact.

Building on the 3Ps framework—Policies, Programs and People—the following recommendations translate these pillars into clear, actionable focus areas for different stakeholders. By aligning the 3Ps with the roles of Government, Academia, Industry, and Women themselves, the next section outlines how each stakeholder can strengthen the Women-in-STEM ecosystem in a cohesive and mutually reinforcing way.

1. From Policy Makers Perspectives (Policies + Programs)

Policy Suggestions

- ⊙ Consider introducing benchmarks for women's enrolment, progression, and research participation.
- ⊙ Encourage gender-disaggregated reporting in all STEM agencies.
- ⊙ Explore enhancing safety, mobility, residential and digital infrastructure.
- ⊙ Minimize data access hurdles through interoperable central repositories with Aadhaar-enabled authentication.
- ⊙ Provide interest-free digital-empowerment loans (e.g., Sukanya Samriddhi–linked) to support access to devices for girls in STEM.

Programmatic Suggestions

- Expand scholarships, bridge programs, research fellowships.
- Strengthen Tier-2/3 ecosystems through community science hubs, mobile labs, STEM festivals.
- Explore setting up a National Career Re-Entry Cell for women in research.
- Support community-led STEM learning spaces.
- Foster learning libraries run by women's self-help groups in every pincode.
- Enrich these libraries with STEM books and digital resources.
- Use NPTEL and open-learning platforms to show real-world STEM applications.
- Adopt immersive technologies (VR/AR, low-bandwidth browsers) for accessible STEM learning.
- Facilitate CII–University linkages for industrial visits for girls.
- Promote creativity and problem-solving through women-focused hackathons and sustainability challenges.
- Incentivize startups with ≥50% women innovators through grants at HEI (Higher Education Institution) incubators.
- Create maker spaces for women near railway stations/post offices to support safe entrepreneurship.

2. From Academia Perspective (Programs + People)

Program Suggestions

- Build stronger school-to-college STEM pathways (orientation, labs, mentoring).
- Enhance counselling, financial aid, and research guidance for women.
- Introduce interdisciplinary STEM modules.
- Formalise research internships and projects with industry/labs.
- Provide flexible timelines for PG, PhD, post-doc pathways.
- Conduct sensitization programs on STEM careers for girls, boys, and parents.
- Adopt multimodal, immersive STEM learning approaches (VR/AR).

People & Culture Suggestions

- Promote gender-inclusive learning environments; faculty sensitisation.
- Improve representation of women in academic decision-making bodies.
- Strengthen alumni networks for mentorship and placements.
- Facilitate parental-inclusion and community-awareness sessions to counter norms.

3. From Industry Perspective (Policies + People)

Policy Suggestions

- Adopt gender-balanced slates and diverse hiring panels.
- Explore flexible work arrangements, childcare partnerships, safer workplaces.
- Develop technical career tracks parallel to managerial tracks.
- Adopt blind hiring practices to shed conscious biases during recruitment
- Consider earmarking roles for women returning from career breaks.
- Explore dual-career hiring policies for couples (to reduce relocation barriers).

People & Capability Suggestions

- Offer internships, apprenticeships, early-career STEM programs.
- Build mentorship, sponsorship, leadership-readiness networks.

- ⊙ Support returnship and return-to-lab programs.
- ⊙ Encourage participation in innovation councils, patent committees, standards bodies.
- ⊙ Work with CII to organize job-shadowing days, fairs, exposure visits.
- ⊙ Equip women with industry-readiness certifications and simulators.
- ⊙ Actively promote internships and apprenticeships for women.
- ⊙ Leverage ICT platforms to create comprehensive databases of women STEM talent.
- ⊙ Create separate web channels for women interns.
- ⊙ Encourage alumni networks to support career transitions.
- ⊙ Create exclusive portals for career returnships.
- ⊙ Inculcate a culture of well-being and positive attitudes toward career breaks.
- ⊙ Support a Women-in-STEM industry charter through CII.
- ⊙ Encourage ERGs to build long-term support communities for women.
- ⊙ Promote male allyship efforts within teams and leadership.

4. From Societal Perspective (Programs + People)

Career Development Suggestions (Women)

- ⊙ Leverage mentorship networks, fellowships, skilling platforms.
- ⊙ Build strong peer communities.
- ⊙ Participate in conferences, hackathons, maker spaces, research forums.
- ⊙ Consider structured returnships after breaks.
- ⊙ Build visibility portfolios (projects, publications, patents).
- ⊙ Increase focus on skilling through open-access and proprietary portals.
- ⊙ Participate in challenges and women-focused innovation competitions.

Visibility & Recognition Suggestions (Women + Ecosystem)

- ⊙ Encourage recognition through newsletters that feature women in STEM.
- ⊙ Amplify women's STEM achievements on digital and traditional media.
- ⊙ Consider platforms (physical/digital) to showcase women-led innovations.

6.0 Conclusion

In nation-building, the participation of women is as vital as that of men.

In nation-building, the participation of women is as vital as that of men. While government bodies, private enterprises, and academic institutions have introduced a range of women-centric schemes and policies to expand women's presence in STEM, collective progress remains uneven. A truly transformative shift will occur only when these stakeholders work in synergy to build an enabling STEM ecosystem—one that integrates opportunity creation, capability development, recognition, and long-term career support.

For India to advance toward an equitable and innovation-driven future, it must ensure that women receive equal visibility, access, and encouragement across the STEM continuum. Persistent barriers—rooted in cultural norms, implicit biases, and structural constraints—continue to limit women's full participation. Addressing these challenges requires a holistic approach that expands exposure, strengthens institutional support, and widens pathways for women to enter, grow, and lead within STEM fields. Only then can India unlock the full potential of its scientific and technological talent base.

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About Avtar Group

Avtar Group is India's leading workplace culture consulting firm, dedicated to enhancing women's employment across early, mid and matured career stages. Built as a for-profit social enterprise, Avtar works to increase women's representation in the Indian workplace by enabling sustainable career paths for women via recruitment, policy audits, strategic interventions and community engagement programs.

About Dr Saundarya Rajesh, Founder – President, Avtar Group

Dr Saundarya Rajesh established Avtar in 2000 as India's inaugural initiative dedicated to bolstering women's workforce participation. She is a globally recognised thought leader known for her pioneering work in enabling careers of thousands of returning women and advancing corporate interest in the space of gender inclusion. She has won many accolades such as

⊙ Ministry of Women and Child Development's #100 Women Achiever Award – Govt of India

⊙ Top 35 Global Changemakers - UK Government's Chevening Award

⊙ UN & Niti Ayog's Women Transforming India

Dr. Saundarya has authored bestsellers such as The 99 Day Diversity Challenge, to help leaders cultivate a mindset of inclusion and Conversations with the Career Doctor, a practical guide offering solutions for Indian women to thrive professionally. Under Dr. Saundarya's guidance, Avtar's leadership team brings deep expertise in recruitment, talent strategy, behavioural science, organisational psychology, and culture transformation.

What We Do

⊙ **Talent Solutions**: Path-breaking initiatives such as Second Career Programs for Women and diverse talent pipelines for inclusive hiring.
⊙ **Career Enablement Platform for Women**: myAvtar.com: India's first job portal for women to connect with the gender-inclusive employers
⊙ **Workplace Culture Transformation**: Diagnostics, frameworks, and programs to shape inclusive, high-performance cultures.
⊙ **Research & Analytics**: India's most respected inclusion indices and studies – Best Companies for Women in India (BCWI). White Papers and Industry Reports in partnership with India's leading organisations, Google, GE, EY, Aditya Birla Capital and CII.
⊙ **Training & Workshops**: Non-conscious bias, Inclusive Leadership, Culture Transformation and Women Leadership Programs

Impact Snapshot

With 25 years of pioneering work in women's careers, Avtar has won many awards including the Steward Leadership 25 by The Straits Times and INSEAD and the Stanford Seed certification. In October 2025, Avtar was named as India's Leading Women's Employment organization by Times of India. Avtar's impact scoreboard reads as follows

⊙ 365 corporate clients across industries
⊙ 200,000 + women engaged through career enablement programs
⊙ Provided career comeback opportunities for more than 100,000 women
⊙ Conducted 5000+ workshops and training programs

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CII

Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organisation, with around 9,700 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 365,000 enterprises from 318 national and regional sectoral industry bodies.

For 130 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with the Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness, and business opportunities for industry through a range of specialised services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Through its dedicated Centres of Excellence and Industry competitiveness initiatives, promotion of innovation and technology adoption, and partnerships for sustainability, CII plays a transformative part in shaping the future of the nation. Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes across diverse domains, including affirmative action, livelihoods, diversity management, skill development, empowerment of women, and sustainable development, to name a few.

For 2025-26, CII has identified "Accelerating Competitiveness: Globalisation, Inclusivity, Sustainability, Trust" as its theme, prioritising five key pillars. During the year, CII will align its initiatives to drive strategic action aimed at enhancing India's competitiveness by promoting global engagement, inclusive growth, sustainable practices, and a foundation of trust.

With 70 offices, including 12 Centres of Excellence, in India, and 9 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with about 250 counterpart organisations in almost 100 countries, CII serves as a reference point for Indian industry and the international business community.

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