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DEPARTMENT OF SCIENCE & TECHNOLOGY
MINISTRY OF SCIENCE & TECHNOLOGY
GOVERNMENT OF INDIA

Research

Gender Advancement for Transforming Institutions (GATI)

Baseline Study

February 2022

WOMEN IN SCIENCE & ENGINEERING (WISE) – KIRAN

www.britishcouncil.in

Baseline study conducted by
Think Through Consulting Pvt Ltd
M&E agency for the GATI project

Contents

List of figures

List of acronyms

DBT	Department of Biotechnology
DST	Department of Science & Technology
GATI	Gender Advancement for Transforming Institutions ICMR: Indian Council of Medical Research
WISE-KIRAN	Women in Science and Engineering- KIRAN KVPY: Kishore Vaigyanik Protsahan Yojana
NCWEB	The Non-Collegiate Women's Education Board
POSH	Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013
ICC	Internal Complaints Committee
SERB	Science and Engineering Research Board
STEMM	Science, Technology, Engineering, Mathematics and Medicine UGC: University Grants Commission
WEE	Women Entrepreneurship and Empowerment WOS: Women Scientists Scheme

Executive summary

Gender Advancement for Transforming Institutions (GATI) programme was conceptualized by the Department of Science and Technology (DST). It was launched by the honourable president of India on the occasion of National Science Day. DST has started its pilot program in partnership with British Council. It aims to promote gender inclusivity in Science, Technology, Engineering, Mathematics and Medicine (STEMM) by encouraging institutions of higher education and research in India towards a more gender equitable and inclusive future. The programme was designed to improve gender parity in STEMM institutions by examining the extent to which policies and practices in the participating STEMM institutions are inclusive, the level of awareness of the policies and the attitude and perception of stakeholders regarding gender advancement.

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Thinkthrough Consulting was commissioned by British Council and DST to conduct a baseline study to analyse the 'as is' situation within the select STEMM institutions in India. The findings from the study will be subsequently used to measure the impact and attribute changes in institutional and systematic behaviours towards key gender something inclusive and equitable interventions created by the GATI programme. A quasi-experimental and mixed method approach was used to perform the baseline study, which spanned five months from May to September 2021 and included 59 Institutions in India, 30 of these institutions were treatment institutions, and they served as the study's pilot sites, hereafter referred to as GATI Institutions. The remaining institutions serve as control institutions. The GATI Institutions can very broadly be classified into three kinds for the purpose of this study – 1) Academic, 2) Institution of National Importance, and 3) Research Institutions.

The evaluation process involved a highly consultative approach to collecting required information. Insights were developed based on robust analysis of this data. The methodology and subsequent analysis drew on a blend of quantitative and qualitative data-collection tools, where qualitative inputs are used to deepen understanding of quantitative data. Input was collected from 555 academic (Faculty; PhD Scholar; Post- Doctoral Fellow / Senior Research Fellow and Research Associate) and non-academic (Administrative Staff, Finance and Human Resources (HR)) staff across treatment and control institutions, where 296 were female and 259 were male.

The study's findings revealed an upward trend in the number of women in STEMM, both in terms of recruiting and leadership roles. Despite these encouraging indicators, recent research suggests that women are underrepresented in STEMM in GATI institutions when compared to their male counterparts. The reason for this is manifold. One of the most prominent that emerged from the study was related to social expectations and balancing care responsibilities in the workplace. The study found that female faculty find it difficult to stay on tenure path i.e., longevity of their career, due to care responsibilities and inadequate support systems within the workplace. Another emerging factor which hindered the equitable inclusion of women in STEMM was tied to the lack of a flexible career re-entry plan, as a result, career breaks often resulted in a downward mobility in terms of employee status.

According to participants in the study, this was often more severe in research and technology-based careers, due to the fast-changing nature of the fields of study. Furthermore, a lack of availability of gender sensitives facilities such as organised on-campus childcare support led to women opting out of their career in STEMM in favour of their care responsibilities. Discrimination and sexual harassment were other factors that inhibited gender equality within the GATI Institutions, according to findings. However, in recent years, strict legislation and increased awareness have managed to mitigate the severity of issues. In summary, the study indicated that covert discrimination and implicit biases persisted in the workplace, becoming entrenched in the fabric of the workplace culture. In addition, current challenges related to career preferences and life choices have also hampered women's participation in STEMM.

For a more in-depth analysis, the study was divided into three sections where each section highlighted different aspects ranging from recruitment and professional development to gender policies, procedures and organisational climate within the sampled STEMM Higher Education and Research Institutions in India. The findings of this study are discussed in further detail using the three sections specified above.

Findings from Section 1, **Gender Advancement, Career Progression and Leadership** suggest that the recruitment policies followed by the GATI Institutions were gender agnostic, usually in line with the guidelines dictated by the University Grants Commission (UGC) whereby applicants were chosen on the basis of 'merit' i.e., based on publications, research and teaching experience in the respective field of study. It went on to state that most treatment institutions reported an increasing trend of female students and faculty in STEMM, with approximately 55.1 per cent of the women surveyed felt that women were adequately represented in STEMM oriented field. However, qualitative findings continue to highlight a high-level of variance in number of women within the Institutions. Further, the degree of variance also depended on the field of study. For example, Engineering was considered more male dominated and hence the faculty consisted of far fewer women than those within the sciences (especially life sciences).

In terms of appraisals, about 65.5 percent of the women surveyed had been appraised at their current institution for the 2019-2020 academic year, indicating that the appraisal is done on an annual basis. Furthermore, the data revealed that the UGC standards play an essential role in guiding the promotion process for teachers. They emphasised that the 'merit-based' promotion process is based on the accomplishments of the staff and is thus unaffected by any obvious bias, but not implicit bias.

A positive trend was observed regarding the pay scale, where 83 percent of women surveyed agreed that women were paid equally to men. The UGC and DST guidelines was a contributing factor to ensuring a fair pay scale for academic staff irrespective of sex. On the other hand, retention of female staff emerged as an issue of concern and was considered to be predominantly connected with aspects related to lack of access to housing and other infrastructure support facilities which negatively contributed towards retaining talented staff. The lack of structured and formal process for training, mentorship and capacity building for female staff also emerged as a finding from the study, whereby 70.3 per cent of the women surveyed stated that they received informal forms of mentorship opportunities and support mechanisms.

With regard to leadership, findings indicated an upward trend in terms of women in senior positions with 74.7 per cent of women surveyed feel that they have equal access to leadership and administrative positions within their institution. However, discussion revealed that across all GATI Institutions, while there are women in senior positions, they are far fewer than their male counterparts.

Findings from Section 2, **Gender Policies, Processes, Procedures, Practices** suggest that while all GATI institutions provide female staff with maternity leave as per law, reintegrating back into the workspace has proven challenging for women in STEMM careers. Further, there appears to be a lack of consistency in the approach to providing flexible working hours to female employees returning from maternity leave. However, positive measures to help manage careers break such as the "Tenure Clock Stop" has resulted in allowing women who have childcare responsibilities to remain on their career path without losing out due to care work.

In GATI Institutions, there was a high degree of variance in terms of access to gender sensitive facilities within the workspace, with the study finding a direct correlation between the impact of leadership on the amount of attention given to infrastructure and welfare support for women in the workspace.

With regard to aspects of safety and prevention of sexual harassment in the workplace, it was found that awareness levels were quite high where 96.6 per cent of the women surveyed, and 96.1 per cent of the men surveyed said that they were aware that their institution does have safeguards against gender-based discrimination and harassment. In terms of Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act), 89.9 per cent of women surveyed and 86.9 percent of men surveyed were aware of the POSH Act, including what constitutes sexual harassment and the existence of redressal mechanisms such as Internal Complaints Committees (ICC). However, there was an inverse relationship between awareness levels and how many received training on POSH as many faculty members were unsure or unwilling to attend training because they did not believe sexual harassment was an issue of concern.

Findings from Section 3, **Gender Climate and Organisation Culture** suggest that while contribution in terms of publication of research materials remains relatively the same regardless of gender, outreach engagements regarding visibility and recognition of women in science still requires greater focus. According to the findings from the survey, only 18.2 per cent women (of the total women surveyed) claimed to have benefited from any government run schemes/policies aimed at improving gender inclusivity. However, despite this low number, qualitative findings indicate a positive reception to women only' schemes and awards such as Women's Scientist Scheme, National Women Bio-scientist Award, Science and Engineering Research Board's (SERB) Women Excellence Award, etc.

Female role models in STEMM have emerged as an issue of importance from the study, yet findings indicate that visibility of role models is still limited. This is connected to the lack of structured programme focused on outreach. While there have been some efforts, such as the DST's Vigyan Jyoti programme and Women Entrepreneurship and Empowerment (WEE) Programme, they have been sporadic in nature owing to the lack of time and increasing burden of responsibility on the faculty. This is further exasperated by bottlenecks in terms of culture at home or at school that may prevent women from pursuing careers in science.

The introduction and reception of the GATI programme by participating Institutions, while still in its nascent stage, has been positive with 88.5 per cent of women agreeing that the GATI programme was relevant and would help promote gender equality in STEMM higher education institutions in the country. A key contributing factor to the adoption of GATI as an integral part of the organisational culture is tied to the 18-month partnership with UK institutions. The UK Institutions' experience in addressing challenges for gender equality initiatives and actions, will allow the GATI Institutions to take advantage of a "path that is well-trodden", and contextualise and replicate possible solutions to match the socio, economic and cultural scenario in the country. Through the partnerships and other support mechanism, the GATI programmes will aim at creating a knock-on effect extending beyond the institution staff and influencing the community by establishing role models who will serve as a catalyst for the next generation of women in STEMM.

Section 1

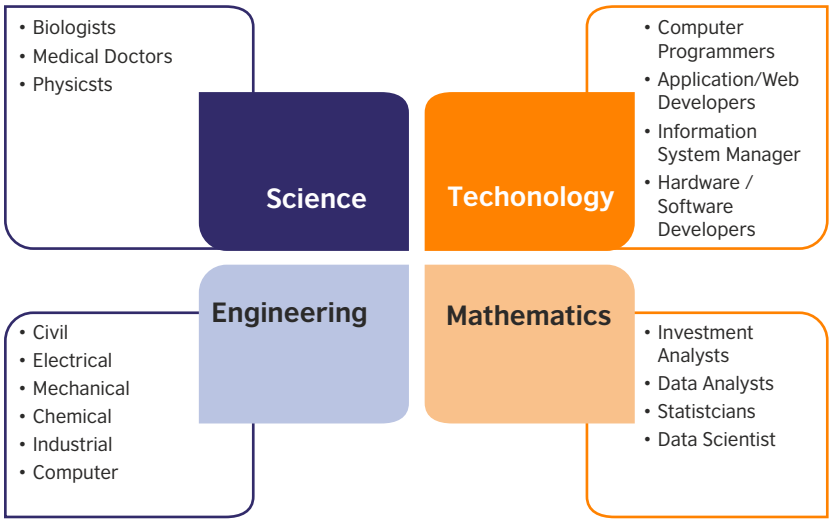
Background

1. Background

1.1 What is STEMM

It has been proven that the discovery, development, and proliferation of new innovations through science and technology are the primary sources of economic advancement in an increasingly competitive world. As a result, Science, Technology, Engineering, Mathematics and Medicine (STEMM) is held in high esteem the world over, and India is no exception. Below are some key occupations that makeup the four strands of STEMM.

Figure 1: Some occupations within the four strands on STEMM



1.2 Women in STEMM in India

The STEMM industry's continued expansion does not appear to be accompanied by a proportionate increase in female representation in these professions. Areas of STEMM continue to be predominantly male dominated with much lower participation of women. However, even though women are underrepresented, the efforts of the Government to promote girls' education, and more specifically STEMM has reaped dividends. Female enrolment in STEMM in India has gone up from 23.5 percent in the year 2015-16 to 27.3 percent in 2019-20 (Anon., 2019-20).

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1. https://wcd.nic.in/sites/default/files/draft%20national%20policy%20for%20women%202016_0.pdf
2. https://dst.gov.in/draft-5th-national-science-technology-and-innovation-policy-public-consultation

Some national efforts to encourage women and girls to pursue STEMM

Initiative / Policy	Key feature
National Education Policy (NEP) (2020)	"Gender Inclusion Fund" to provide quality and equitable education for all girls, Greater flexibility of curriculum and increased focus on STEMM
National Policy for Women 2016	Improve access to pre-primary education, enrolment and retention of adolescent girls, implement innovative transportation models for better schooling outcomes, and advocate gender champions.1
Science, Technology and Innovation Policy 20202	Promote mechanism to encourage girls / women to enter into areas of science, information and communication technology
PRAGATI (2014-15)	Providing assistance for Advancement of Girls participation in Technical Education.
Post-Graduate Indira Gandhi Scholarship for Single Girl Child	Initiate scholarships and supernumerary seats to promote girl's education in BTECH programmes and IITs.
Knowledge Involvement in Research Advancement through Nurturing (WISE-KIRAN)/ Women Scientists Scheme (WOS)	Providing opportunities to women scientists and technologists between the age group of 27-57 years who had a break in their career but desires to return and sustain a career
DST-IUSSTEF WISTEMM Fellowship	Provide opportunities to Indian Women Scientists, Engineers and Technologists to undertake international collaborative research in premier institutions in the United States to enhance their research capacities and capabilities.
Vigyan Jyoti Programme	Create a level-playing field for the meritorious girls to pursue STEMM
Consolidation of University Research for Innovation & Excellence in Women Universities (CURIE) programme	Support women in universities for improving Research & Development infrastructure and enhancing research facilities.
Women Entrepreneurship and Empowerment Foundation (WEE)	To help women ranging from college-going students to middle-aged housewives to take up entrepreneurship as a viable, fulfilling career option (By IIT Delhi)
Other initiatives include, BIOCARe, UGC Post- Doctoral Fellowship, DHR Fellowship of ICMR, NIDHI Program of DST and POWER of SERB	

Female enrolment in STEMM in India has gone up from 23.5 percent in the year 2015-16 to 27.3 percent in 2019-20 (Anon., 2019-20).

Despite initiatives introduced by government bodies, gender gap in STEMM has continued to persist. For example, as a country, India boasts the highest number of female STEMM graduates in the world, at 43 per cent. However, only 14 per cent of the 280,000 scientists, engineers in research and development institutes in India are women (Amin, 2021). Research indicates that gendered socialisation, the influence of family and community, stereotypes of STEMM professionals, institutional bias, and family responsibilities are all contributing factors as to why many women drop out of a STEMM career midway or quit completely. This phenomenon is called the 'leaky pipeline'. Other factors such as limited access to resources, economic constraints, lack of female role models, and other class, organisational and structural barriers further inhibit their drive to pursue STEMM.

It is clear that the crisis that women face needs urgent action. In order to promote gender inclusivity in STEMM, Gender Advancement for Transforming Institutions (GATI), a pilot program was started by the Department of Science and Technology (DST) in collaboration with British Council. Drawing on best practice of the Athena SWAN (Scientific Women's Academic Network) charter in the UK, GATI aims to encourage institutions of higher education and research towards a more gender inclusive, diverse, and equitable future. Through the programme GATI also seeks to recognise and celebrate the good practices in science and technology institutions of higher education and research towards the advancement of gender equality.

Section 2

Approach and methodology

2. Approach and methodology

2.1 Objective of the study

The objective of the study is to understand how systematic and institutional changes are required to help support women and improve gender parity in STEMM institutions. In order to achieve this set objective, it was essential to understand the current scenario of STEMM institutions with regard to general perception, opportunities and facilities accessible to women in their workplace. This also included examining the extent to which policies and practices in the participating STEMM institutes are inclusive, the level of awareness of the policies and the attitude of stakeholders regarding gender advancement.

For this purpose, a baseline study was conducted to analyse the 'as is' situation within the select STEMM institutes. The findings from the study will be used to measure the impact and attribute changes in institutional and systematic behaviours towards key interventions.

2.2 Study period

The study was conducted over a period of five month spanning from May to September 2021. This period covered the inception phase, qualitative data collection via semi structured Interview (SSIs) with key representatives from the GATI treatment Institutions, and quantitative data collection through survey questionnaires which was followed by data analysis.

2.3 Participants in the study

The study was conducted across 59 STEMM Higher Education and Research Institutions in India. Of these Institutions, 30 of them were treatment institutions and are the pilot Institutions for this study. Here after referred to as GATI Institutions. The GATI Institutions can very broadly be classified into three kinds for the purpose of this study – 1) Academic Institution, 2) Institution of National Importance, and 3) Research Institutions. The study also included six UK Higher education Institutions and Advance HE. It is important to note that the UK Institutions are members of the Athena SWAN charter.

2.4 Methodology

To achieve the objectives of the baseline report, a quasi experimental[3], mixed methodology approach was followed. Under this approach data was collected from treatment and control STEMM Higher Education and Research Institutions in the country. Further, primary data was triangulated and substantiated with secondary data and vice versa in order to strengthen the understanding of existing systems, processes and practices.

The study was divided into three-linked phases. The phases of the study are as follows:

- Inception
- Data Collection
- Analysis and Report Writing

Phases	
Phase	**Activity**
Inception	Signing off on the scope of work and deliverables
	Inception meeting with British Council project team
	Secondary literature review
	Mapping of key stakeholders and the sampling structure

3. This framework captures the causal effect of the GATI intervention on treatment Institutions, by establishing an appropriate counterfactual (control institutions) in order to establish what would have happened in the absence of the intervention. This will provide a baseline from which causal effects can be estimated.

Phase	Activity
Inception	Mapping of key stakeholders and the sampling structure
	Develop and draft qualitative and quantitative questionnaires
	Draft, share and finalise the inception report with tools
Data collection	Develop the data collection plan in coordination with DST and British Council
	Team training
	Data collection from 59 STEMM institutions and 6 UK ATHENA SWAN partners and Advance HE
	Collation of data gathered through qualitative and quantitative tools
Analysis and reporting	Analysis of the findings basis the structure discussed with British Council in consultation with DST
	Draft and submit baseline report for review and feedback from British Council and DST
	Incorporate changes and submit final report

2.4.1 Phase 1: Inception

An inception meeting was held with the British Council to discuss the specifics of the project which includes the purpose, goals and deliverables of the study. The study methodology and data collection tools were also discussed in detail and the timelines were finalised. During the meeting, the point of contact from each institution was identified for the study.

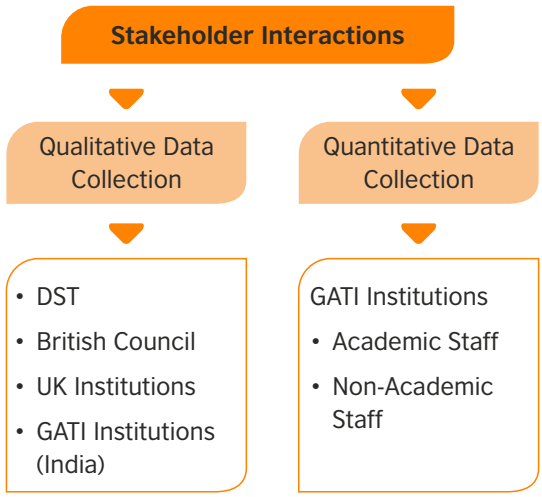
2.4.1.1 Preliminary Literature Review

An extensive secondary review of relevant literature was undertaken to understand the objectives, guidelines and practices in the context of past work done by Government of India including the DST in the field of gender equality and advancement in STEMM. For the review, existing studies conducted by British Council and other credible organisations were analysed along with peer reviewed articles and journals.

2.4.1.2 Mapping of key stakeholders

Mapping of stakeholders was done during the inception phase. The purpose of the exercise was to identify all relevant stakeholders critical to the programme. The systems and processes of the institutions were studied, including the composition of the people working, to gain better understanding of roles and responsibilities of different stakeholders at each level of the programme.

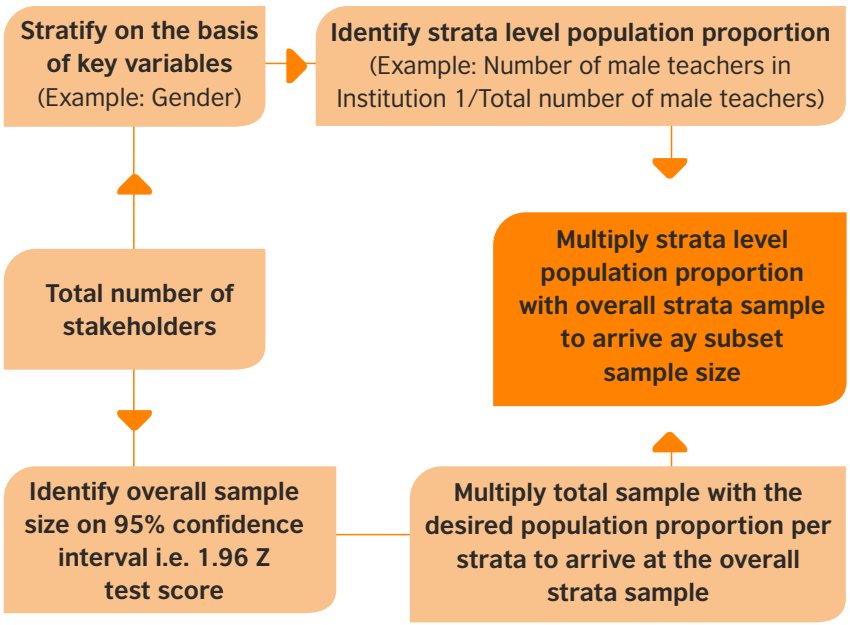
Figure 2: Stakeholders



2.4.1.3 Sampling

Beneficiary Type	Position
Academic Staff	Faculty; PhD Scholar; Post-Doctoral Fellow / Senior Research Fellow and Research Associate
Non-Academic Staff	Administrative Staff, Finance and Human Resources (HR)

The sampling process was undertaken in a stratified fashion wherein, the entire respondent population was divided on basis of their institution, followed by their institutional role (academic or non-academic etc) and lastly based on their gender. Post which, the strata's proportion within the population was calculated. Finally, it was multiplied by the overall strata sample size to create the subset sample size.



The variables on which, the respondent population were stratified are as follows:

- Thematic Area (Medical, engineering and technology schools etc)
- Type of staff – Academic and non- academic
- Gender- Male and female[4].

Key Features of Sampling

- The sample size for each institution and strata was representative of their population proportion. For example: If medical schools constitute 50 per cent of the population, then the sample included 50 per cent of its respondents from medical schools.
- The survey was a mix of both close-ended and open-ended questions. Among the close-ended questions, a multiple-choice question was a key component across all sections.

The survey was a mix of both close-ended and open-ended questions. Among the close-ended questions, a multiple-choice question was a key component across all sections.

4. While the term gender goes beyond male and female to include other genders such as transgender, genderfluid etc. But for the purpose of this study, and based on the findings, the two categories of gender considered will be cisgender.

The cumulative sampling for the institutions across gender and various positions are as follows:

For the purpose of this analysis, approximately 50 per cent or 16 of the GATI Institutions were selected.

Total number of participants from the survey

Gender	Academic staff	Non- Academic staff
Female	224	72
Male	186	73
Total	**410**	**145**
Grand Total	**555**	

Breakdown of Treatment Institutions

Gender	Academic staff				Non- Academic staff			Total
	Faculty	Post Doc	PhD Scholar	Researchers	Admin	HR	Finance	
Female	33	34	31	40	36	24	26	**224**
Male	25	25	31	18	34	26	27	**186**
Total	58	59	62	58	70	50	53	**410**

Breakdown of Control Institutions

Gender	Academic staff				Non- Academic staff			Total
	Faculty	Post Doc	PhD Scholar	Researchers	Admin	HR	Finance	
Female	15	9	16	3	15	7	7	**72**
Male	18	6	10	13	7	6	13	**73**
Total	58	59	62	16	22	13	20	**145**

Note: A detailed sampling structure can be found in the annexure

The questionnaires were designed in order to understand and effectively extract information and insights of their current status regarding gender inclusion within the respective GATI Institutions.

Qualitative Sampling

For the purpose of this analysis, approximately 50 per cent or 16 of the GATI Institutions were selected. These were selected to proportionately reflect the larger universe of the 30 pilot GATI Institutions. In addition, six UK institutions, British council and DST representatives were also interviewed.

Qualitative interviews

Tool	Stakeholder	Number	Type	Modality
Semi Structured Interviews	DST	1	Qualitative	Online
	British Council	1	Qualitative	
	UK Knowledge Partner (Advance HE)	7	Qualitative	
	Head of Institutions		Qualitative	
	Head of Departments			
Total		**38**		

2.4.1.4 Tools Development

These tools consisted of qualitative and qualitative questionnaires, allowing for substantiation by secondary data and vice versa. The broad purpose of the tools developed was to:

- Gain in-depth understanding of policies and practices regarding gender equality in GATI Institutions
- To assess current levels of knowledge, attitude and awareness regarding gender inclusion andquality within GATI Institutions
- List challenges at various levels
- Record insightful and informative examples of affirmative and inclusive intervention and activities conducted by the GATI Institution

2.4.1.5 Training of the team

Following the development of the toolkit, a training workshop was conducted for the data collection team by the field team. Completion of the training workshop marked the beginning of the data collection phase.

Interaction or discussion was held only after receiving consent from the respondent. Prior to the survey and interview, the respondents were briefed about the objective of the study and the purpose of the discussion.

2.4.2 Phase 2: Data Collection

Immediately following the conclusion of the inception phase, data collection phase commenced. The data collection was done in three phases:

- Phase 1 of the data collection was done in the month of May where SSIs (Semi-Structured Interviews) were conducted with the UK ATHENA SWAN partners
- Phase 2 of the data was done in the months of June to July where SSIs with Head of Institutions and Head of Departments of the 16 GATI Institutions were conducted to get a better understanding of the situation
- Phase 3 of the data collection was through an online survey for all the stakeholders of the institutions as mentioned before

Processes employed for data collection:

Consent forms: Interaction or discussion was held only after receiving consent from the respondent. Prior to the survey and interview, the respondents were briefed about the objective of the study and the purpose of the discussion. Participants were also given the choice to not answer any question they were not comfortable with or to withdraw from the interview/survey at any stage.

Voluntary and probing: The comfort of respondents while answering questions was carefully considered and given due priority. At no point were the respondents forced to answer any question, and instead, a probing-approach was incorporated to direct the discussion without affecting their response. This approach was also helpful in gauging awareness-related information from stakeholders.

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2.4.3 Phase 3: Analysis and Report Writing

Each data set was matched with its respective stakeholders and subjected to several statistical cleaning procedures for subsequent analysis using Microsoft Excel. Post collation and cleaning, analysis of data was done in accordance with the objectives of the study.

The analysis was conducted using pivot table approach on Microsoft Excel and was subsequently visualised using appropriate graphs, tables and diagrams. Upon deriving from the primary data, the findings were substantiated using triangulation with qualitative inputs from respondents and findings from the initial desk review.

2.5 Limitations and challenges during data collection

- Time constraint: Due to the pandemic and the data collection being done online, there were some constraints such as time convenience of the stakeholders, timely submission of online form, etc.
- Methods/instruments/techniques used to collect the data – Due to COVID-19, the conventional type of data collection i.e., face to face interviews and survey collection was not possible by the data collection team.

Section 3

Demography

3. Demography

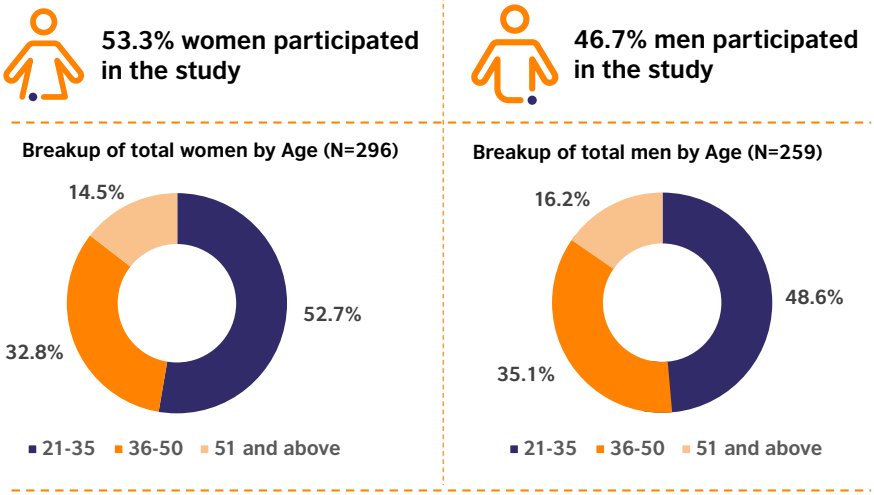
The baseline study, as stated in the methodology, was carried out across 59 STEMM institutions in India, divided into 30 treatment and the remaining control institutions. Collectively, the total sample size for the quantitative survey was 555 respondents, a mix of male and female from academic and non-academic pursuits. The findings for the quantitative survey are as discussed below.

The study found that 53.3 per cent of the total respondents were women, while 46.7 per cent were male.

3.1 Gender

The study found that 53.3 per cent of the total respondents were women, while 46.7 per cent were male. In terms of age, majority of the respondents, both female and male, were within the age group of 21-35 years, at 52.7 per cent and 48.6 per cent, respectively. This was followed closely by those in the age group of 36- 50 years and finally, 51 years and above.

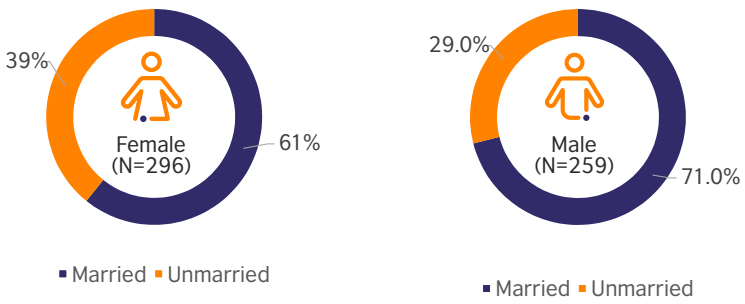
Figure 3: Gender and Age classification (N=555)



3.2 Marital status

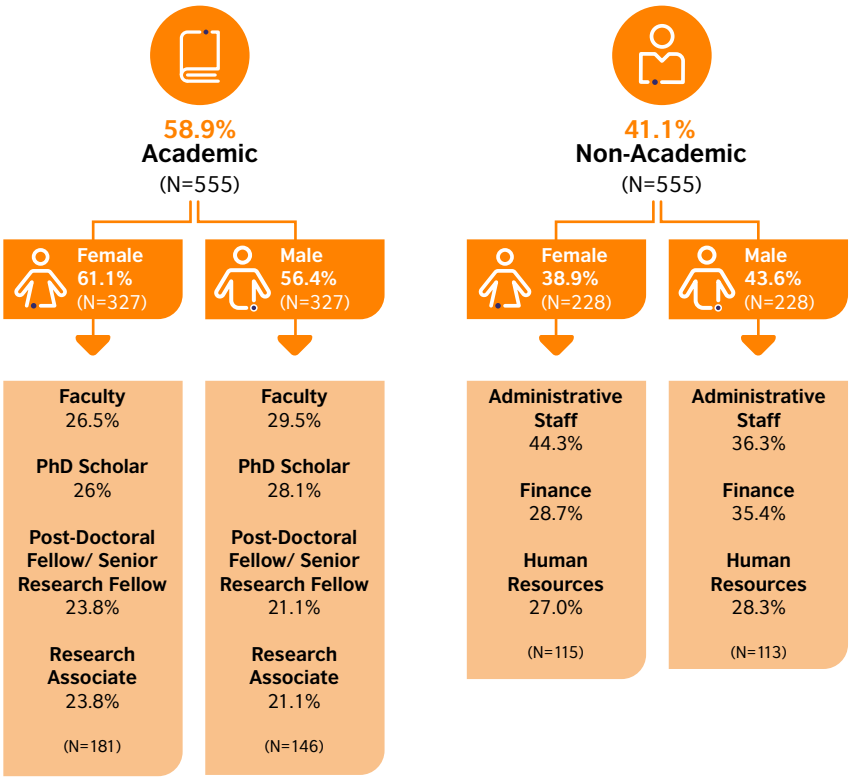
The study revealed that of the total female participants in the survey

Figure 4: Classification by Marital Status



a majority of 61 per cent were married. Similarly, of the total male participants in the survey, 71 per cent of them were married.

Figure 5: Classification by Academic and Non-Academic Staff



3.3 Academic and non-academic

As per the data collected 58.9 per cent were academic staff while 41.1 per cent were Non-Academic.

On further analysing the academic staff, 61.1 per cent were female while 56.4 per cent were male. In both cases, faculty constituted the highest proportion of the academic staff, at 26.5 per cent for female and 29.5 per cent for male. This was closely followed by PhD scholars at 26 per cent female and 28.1 per cent male. Post doctor fellows and research associated constituted the least for both genders.

In terms of Non-Academic staff, approximately 38.9 per cent were female and 43.6 per cent were male. Of them, administrative staff constituted the highest proportion of the non-academic staff for both genders at 44.3 per cent female and 36.3 per cent male. This was closely followed by finance staff at 28.7 per cent female and 35.4 per cent male. Human resources constituted the least for both genders.

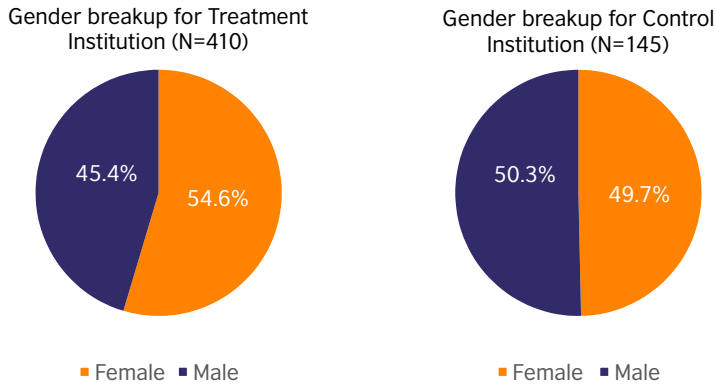
3.4 Treatment and control

For treatment Institutions i.e., GATI Institutions, women accounted for 54.6 per cent of the total participants surveyed while men accounted for the remaining 45.4 percent. In the control institutions, men

For treatment Institutions i.e., GATI Institutions, women accounted for 54.6 per cent of the total participants surveyed while men accounted for the remaining 45.4 percent.

accounted for slightly more at 50.3 per cent, while women accounted for 49.7 per cent.

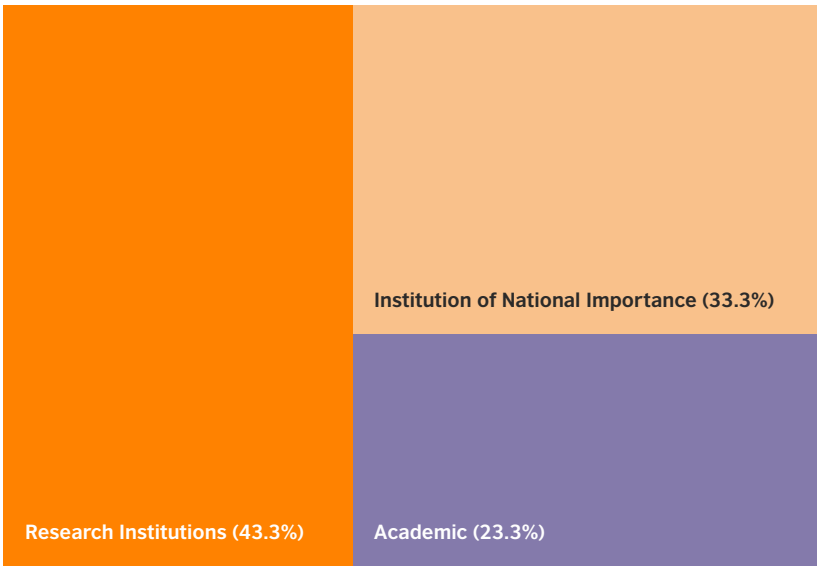
Figure 6: Classification by treatment and control



3.5 Category of institution

Of the 30 GATI Institutions (treatment only) in the study, Research Institutions and universities account for the majority at 30 per cent each, followed by Institution of National Importance at 26.7 per cent and finally by medical and agricultural Institutions at 13.3 per cent.

Figure 7: Breakdown by category of Institution (N=30)



In terms of Non-Academic staff, approximately 38.9 per cent were female and 43.6 per cent were male.

Section 4

Women in STEMM

4. Women in STEMM

Despite decades of efforts to reduce bias and expand opportunities, women continue to be greatly underrepresented in STEMM. When women are excluded from STEMM areas, talented future scientists with the ability to boost creativity and productivity are excluded, who can drive more innovation. Hence, STEMM fields are simply too crucial to our society and future for women to be underrepresented in them. With this in mind, this chapter examines and discusses the current "as is" situation among India's GATI Institutions (treatment and control), regarding women in STEMM. For the purpose of the analysis, the findings are broken down into three sections:

Recruitment and induction are critical steps in developing a more inclusive organisational culture since they are the starting points for a career in STEMM.

4.1 Gender Advancement, Career Progression and Leadership

This section will explore the themes of career entry of female students and faculty in STEMM. Following this, the section will seek to examine the professional development and progression of academic and non-academic staff, as well as leadership opportunities thereof.

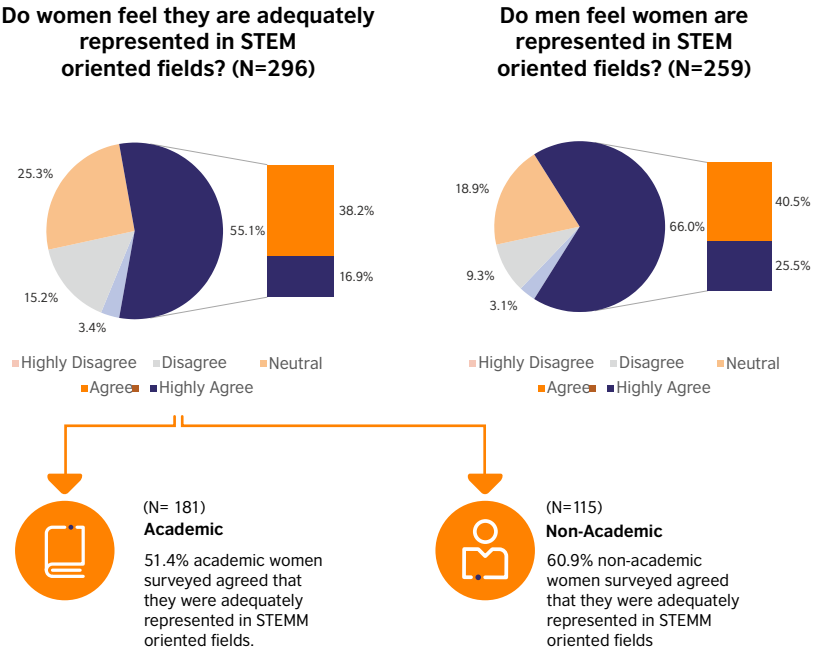
4.1.1 Career entry

Recruitment and induction are critical steps in developing a more inclusive organisational culture since they are the starting points for a career in STEMM. More women may consider pursuing and sustaining a career in STEMM if barriers are reduced or eliminated.

4.1.1.1 Recruitment

During the survey conducted with 296 female and 259 male participants within the treatment and control institutions, approximately 55.1 per cent of the women surveyed and 66 per cent of the men surveyed agreed or highly agreed that women were adequately represented in STEMM oriented fields. When further examining the academic and non- academic women surveyed, 51.4 per cent and 60.9 per cent respectively, either agreed or highly agreed that women were adequately represented in STEMM fields.

Figure 8: Are women adequately represented in the STEMM oriented fields



These findings were substantiated through qualitative discussions with key representatives and stakeholders from 16 treatment GATI Institutions who stated that the recruitment policies followed were gender agnostic as they were in keeping with the guidelines dictated by the University Grants Commission (UGC) of India. Applicants were chosen on the basis of 'merit' i.e., based on publications, research and teaching experience in the respective field of study. During the interaction, it was further reiterated that the selection committee for all applicants always included at least one woman. However, that may not always be the case. According to UGC norms, the selection panel must include at least 12 members, including the Vice Chancellor, subject specialists, Deans of Faculty, and Heads of Departments, to name a few. Of these panel members, only one additional academician can be nominated to represent the SC/ST/OBC/Minority/

Women/ Differently-abled categories. This means that unless the other members of the selection panel are women, there's a chance that none or only one woman will be on the 12-person panel[5].

The Head of Institution (HoI) from a university in the study described the recruitment process and stated that all applicants for a particular position were scored based on the requirements of the position applied for, and those define by the UGC guidelines. Accordingly, a score card was created, and the 'best fit' was chosen. It was inspiring to note that a transgender staff member was hired by one of the GATI Institutions in the study.

During the interaction, it was further reiterated that the selection committee for all applicants always included at least one woman.

5. https://www.ugc.ac.in/pdfnews/5323630_New_Draft_UGCRegulation-2018-9-2.pdf

With regard to women within the faculty, qualitative findings determined that the number of women varied depending on the field of study. Engineering was considered more male dominated and hence the faculty consisted of far fewer women than those within the sciences (especially life sciences). For example, the engineering schools within the Institution of National Importance, has approximately 15 per cent or less women as faculty, while some Research Institutions and universities have between 30 and 50 per cent women in their faculty. According to interaction with respondents in the study, the reason for this was varied. On the one hand, some fields of study were thought to be traditionally and historically male-dominated, while on the other hand, the lack of female participation was blamed on a general "lack of interest" among women. For example, a stakeholder from one of the Agricultural Institutes stated that Veterinary Sciences were not highly sought after by women because dealing with animals required physical strength.

In general, most treatment institutions reported an increasing trend of female students and faculty in STEMM, particularly when it came to PhD enrolment. This growing trend is also the outcome of efforts made by several GATI Institutions' initiatives to encourage women to pursue STEMM as a career choice from an early age. For example, certain institutions use supernumerary quotas[6] during undergraduate admission to ensure that female candidates are placed on a STEMM track.

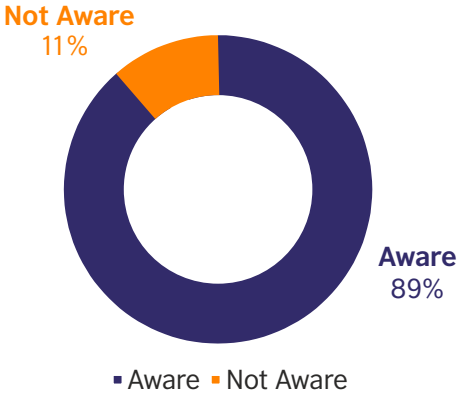
With regard to non-academic staff, more women seem to be part of the human resources department as compared to finance. However, the findings indicate that the number of women across administrative, human resources and finance vary, depending heavily on the unique requirements of the GATI Institutions.

With regard to non-academic staff, more women seem to be part of the human resources department as compared to finance.

4.1.1.2 Induction

The induction process across all treatment and control institutions comprises primarily of familiarising the new recruit with the general code of conduct. According to the findings from the study, approximately 89 per cent of the total female population surveyed were aware of the general code of conduct of their institution.

Figure 9: Awareness levels of women regarding general code of conduct (N=296)



6. Female Supernumerary seats are the additional seats created to accommodate more female students, without compromising on the already existing number of seats

While examining awareness levels of the general code of conduct across academic and non-academic staff, it was determined that among women surveyed, awareness level of non-academic women was greater, at 93 per cent compared to academic staff at 85.6 percent.

Figure 10: Awareness levels of academic and non-academic female staff regarding general code of conduct

(N=181)

Academic

85.6% of academic women surveyed were aware of the general code of conduct.

(N=115)

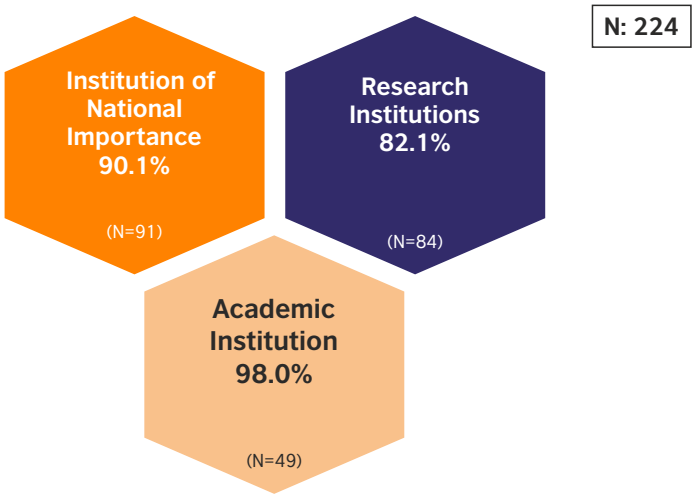
Non-Academic

93% of non-academic women surveyed were aware of the general code of conduct

This can be partially attributed to the increased role of non-academic staff during the recruitment and induction process.

In terms of category of treatment institutions in this study, Research Institutions had relatively low awareness levels among women at 77.4 per cent, while universities have a comparatively higher awareness levels at 94.9 per cent as seen in the figure below.

Figure 11: Awareness levels of women regarding general code of conduct by category of Institution (treatment only)

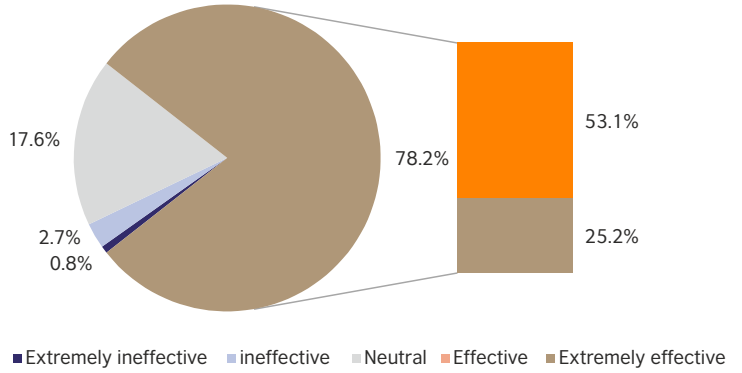


Among those women who stated that they were aware of the general code of conduct, 78.2 per cent felt that the institution's code of conduct was effective or extremely effective in creating a gender inclusive environment.

Further, according to discussion with key stakeholders, the new recruits are sensitised to the organisational culture, the do's and

According to the findings from the study, approximately 89 per cent of the total female population surveyed were aware of the general code of conduct of their institution.

Figure 12: Women's perception regarding inclusive nature of the institution's general code of conduct (N=262)



don'ts as well as various policies relating to professional growth, such as appraisals, and redressal mechanisms, etc.

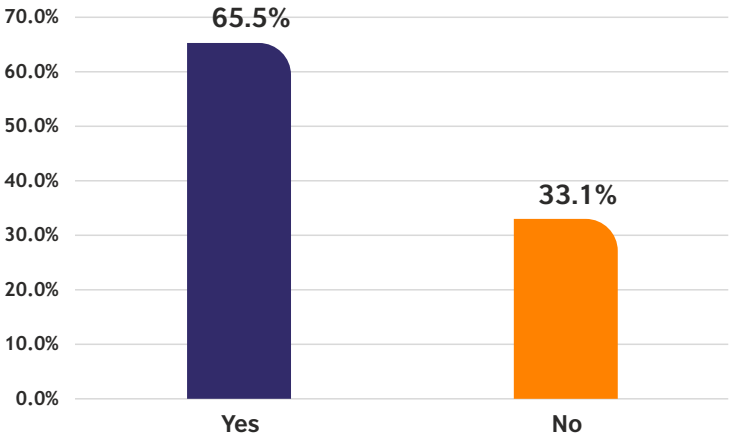
According to the findings from the study, approximately 89 per cent of the total female population surveyed were aware of the general code of conduct of their institution.

4.1.2 Professional Development and Progression

4.1.2.1 Performance appraisal, promotions and retention

In terms of access to, and regularity of, performance appraisal and development review, approximately, 65.5 per cent of women surveyed said that they have been appraised at their current institution for the year 2019-2020.

Figure 13: Appraisal status for women (N=296)



While examining the data from multiple angles, i.e., academic and non-academic staff, treatment and control institutions, and category of institution, it was interesting to note varied responses. For example, only 62.4 percent of female academic staff were appraised compared to 70.4 per cent of non-academic female staff. The appraisal rate for men did not differ extensively from the women with 56.8 per cent male academic staff and 74.3 per cent male non-academic staff appraised in the most recent appraisal cycle. From the perspective of treatment and control institutions, 63.4 percent of women and 65.1 per cent men from treatment institutions were

appraised compared to 72.2 per cent women and 63 per cent men from control institutions. The findings indicate that at the time of this data being collected, there were more women appraised than men among control institutions.

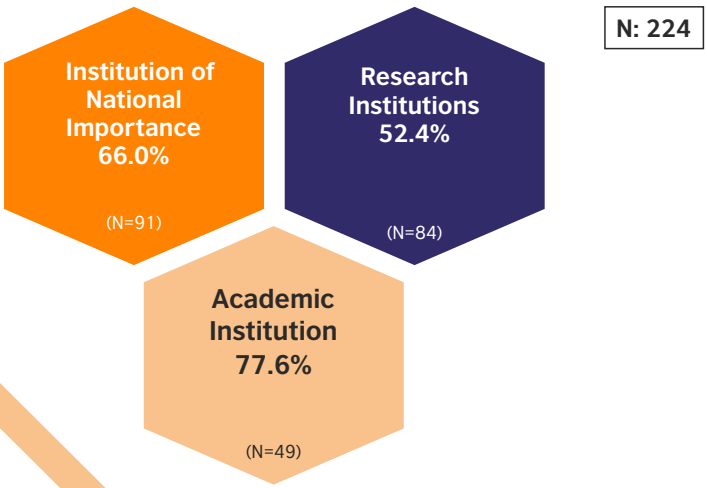
Figure 14: Appraisal status across academic & non-academic and treatment & control

	(N=181) Academic	(N=115) Non-Academic
	62.4% of academic women surveyed have been appraised.	**70.4%** of non-academic women surveyed have been appraised.
	56.8% of academic men surveyed have been appraised. (N=146)	**74.3%** of non-academic men surveyed have been appraised. (N=113)

	(N=224) Treatment	(N=72) Control
	63.4% of women in treatment institutions have been appraised.	**72.2%** of women in control institutions have been appraised.
	65.1% of men in treatment institutions have been appraised. (N=186)	**63.0%** of men in control institutions have been appraised. (N=73)

In terms of category of institution, on average approximately 64-65 percent of female staff has been appraised among most categories of treatment institutions, which is in line with the general trend. However, relatively among medical and agricultural institutions, this figure drops to 38.5 per cent.

Figure 15: Appraisal status of women by category of institutions (Only treatment)

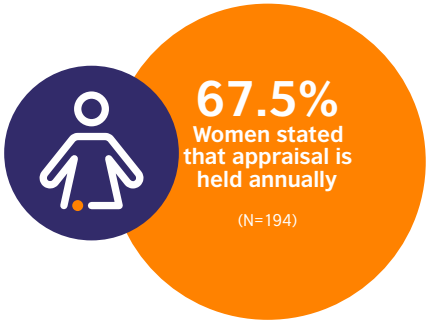


Only 62.4 percent of female academic staff were appraised compared to 70.4 per cent of non-academic female staff.

In general, there can be many reasons for the delay in appraisal, especially given the ongoing pandemic and its impact on the day- to-day activities and actions of institutions.

In terms of frequency of appraisals, among those who have been appraised, approximately 67.5 per cent of women surveyed stated that the appraisal is held annually.

Figure 16: Frequency of appraisal for women



Interactions with stakeholders reinforced the annual nature of the appraisal. Furthermore, they also stated the important role played by the UGC guidelines in guiding the promotion process for faculty. They reiterated that the 'merit' focused promotion process is tied to the contributions of the staff and hence it is not swayed by any obvious bias.

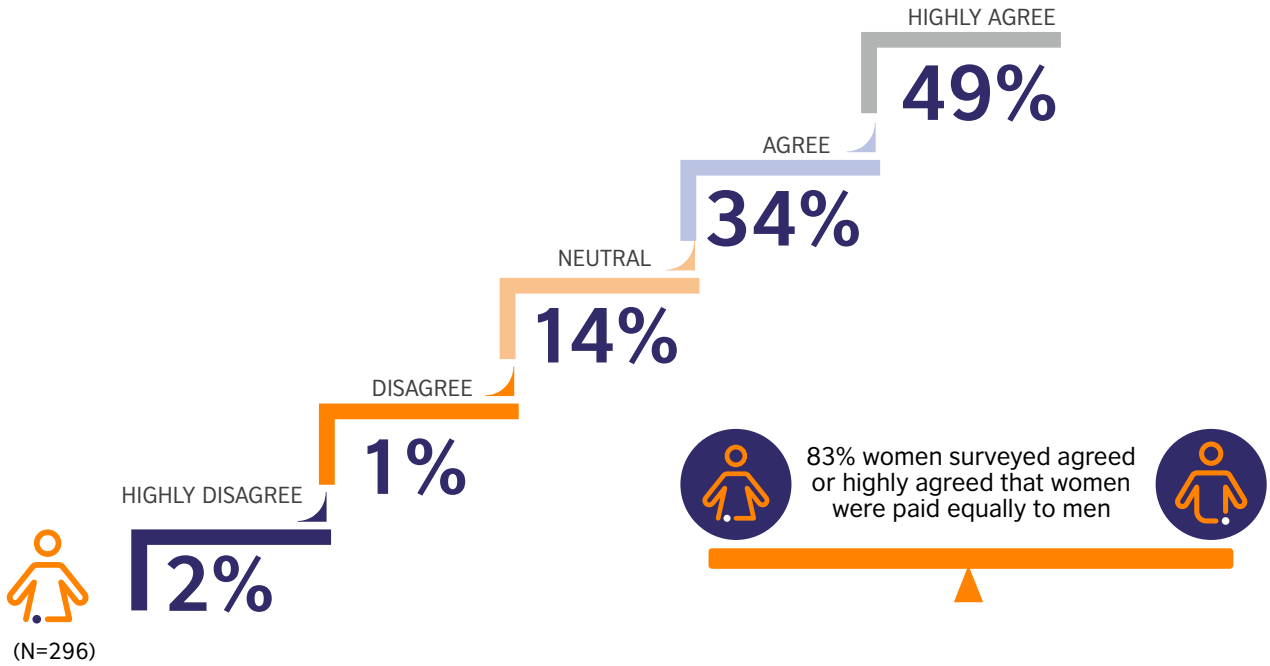
While this may be the case, it is important to acknowledge that a major guiding principle for promotion is the number of years served in the current capacity. While there is no difference for men and women, it is important to note that though the promotion process is guided by the national guideline, it does not consider any leave of absence taken for care responsibilities. This could slow down the speed of promotion for a woman as compared to men, given their socially ascribed roles.

4.1.2.2 Pay scale

With regard to discussion on equal pay, findings indicate that UGC and DST guidelines ensure a fair pay scale for academic staff irrespective of sex. Further, for non-academic staff, most institutions reported following a pay scale to ensure no pay disparity. This has been reinforced by quantitative findings where 83 per cent of women surveyed agreed that women were paid equally to men.

In terms of frequency of appraisals, among those who have been appraised, approximately 67.5 per cent of women surveyed stated that the appraisal is held annually.

Figure 17: Are women paid equally compared to men



Furthermore, when posed with the question if women are given an equivalent increase in pay/privileges when appraised as compared to men, majority i.e., 79.1 per cent of the total women surveyed agreed that it was the case.

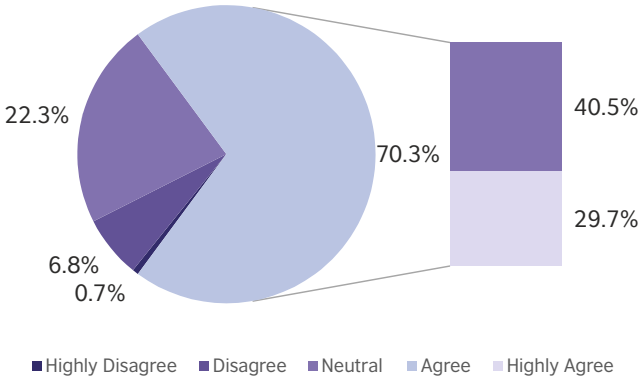
Regarding retention, interactions with representatives from the GATI Institutions indicated that retention was a matter of concern. They went on to state that access to housing and other infrastructure positively contributed towards retaining talented staff. Spousal hiring emerged as an important component that supported the retention of staff. However, respondents also acknowledged the challenges that come with it, such as a mismatch between candidate experience and institution needs.

4.1.2.3 Training, mentorship and capacity building

Findings indicated that most GATI Institutions have no structured training and capacity building programme in place[7]. Rather, the new staff members work closely with senior staff members who act as informal guides. In many cases, the head of the department or institution also provides support as and when needed. According to discussion with stakeholders, while there is no formal programme in place, the informal practices are welcomed and appreciated by the staff. This sentiment is backed by survey findings whereby 70.3 per cent of the women surveyed stated that they received mentorship opportunities and support mechanisms available to them, although it was informal in nature. However, it is important to note that there were respondents who stated that a more structured and consistent mentorship platform and capacity building processes would be welcomed. For example, a university in the United States developed workshops for faculty and administrators aimed in cultivating diverse female leadership in STEMM. These efforts have resulted in 50 per cent gender equity in the university[8].

7. Training and capacity building programmes are discussed in the context of leadership skill development and growth in other non-academic based skills such as grant and proposal writing, time management, etc
8. https://female-leadership.engin.umich.edu/

Figure 18: Access to adequate mentorship opportunities and support mechanisms for women (N=296)



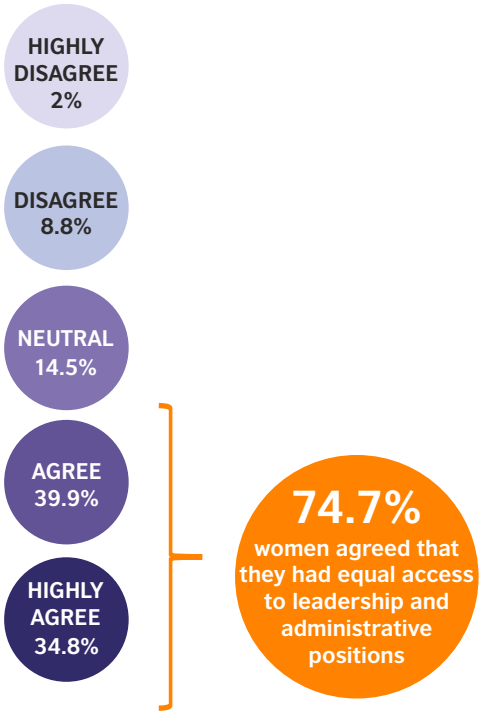
"We give equal responsibilities (to women) to boost self-confidence and develop work satisfaction and build capacities and competencies. We don't discriminate"
- HoI, University

GATI Institutions currently do not have a dedicated mentorship programme created exclusively for female employees. According to previous studies[9], even though mentoring has been demonstrated to boost retention rates and success in securing promotions and research funds for women, they are still less likely to have mentors or receive formal mentorship in their careers than men. Career development, research, and advancement are some of the subjects that studies have revealed are crucial components of any mentorship discussion[10]. A university in the United States has taken the initiative to create a mentoring programme exclusively for women, trans, and non-binary faculty, with the goal of allowing those who are interested in benefitting from the experience of senior and tenured mentors. The programme covers a wide range of topics, including both professional and personal interests and obligations. The programme has fostered collegiality, promoted learning, inspired new research ideas, and supported newcomers in navigating the university[11].

4.1.3 Progression to Leadership

Approximately 74.7 per cent of women surveyed feel that they have equal access to leadership and administrative positions within their institution.

Figure 19: Equal access to leadership and administrative positions for women (N=296)



9. Conway, C.S., Sims, Y., McCrary-Quarles, A., Nicholson, C.S., Ethridge, G., Maultsby, M., Thomas, T.P. and Smith, S., 2018. Strategies to mentor female faculty: A global issue. In Faculty mentorship at historically black colleges and universities (pp. 126-150). IGI Global; Vasquez, R. and Pandya, A.G., 2020. Successful mentoring of women. International journal of women's dermatology, 6(1), p.61.
10. Voytko, M.L., Barrett, N., Courtney-Smith, D., Golden, S.L., Hsu, F.C., Knovich, M.A. and Crandall, S., 2018. Positive value of a women's junior faculty mentoring program: a mentor-mentee analysis. Journal of Women's Health, 27(8), pp.1045-1053.
11. https://secfac.wisc.edu/events-programs/wtnbfmp/

Discussion revealed that across all GATI Institutions there are women in senior positions, albeit, much fewer than their male counterparts. Some senior positions include Dean of Academics, Dean of Research, Head of Various Departments, even Vice Chancellor. One university representative, for example, indicated that there were approximately 18-20 women in leadership roles at the time, the majority of whom were Deans or Heads of Departments. While another representative from an Institution of National Importance indicated that there were approximately 10 women in leadership positions at the time, most of them were either Heads of Departments or Chairman of committees/councils such as NSS & NCC, Institute Cultural Council, and so on.

Many stakeholders indicated that in practice women are part of all key decision making, however, they are not equally represented as their male counterparts. According to a respondent from an Institution of National Importance, the number of women in dean and associate dean positions have risen by 15-20 per cent over the past five years. This has been primarily attributed to the role of leadership in creating an enabling environment for women to rise.

While these findings do indicate an upward trend in terms of women in senior positions, it was also found to be a challenge for women. "Female leadership is not as readily accepted by male juniors," according to a female Head of Department (HoD) from a university in the study. She shared an incident in which women in senior or leadership positions struggled to be heard in meetings in front of male colleagues who are typically more aggressive and spoke over her. She connects this to a male colleague's lack of acceptance of a female leader. She goes on to suggest that unless a female leader is assertive, male colleagues will often take her for granted. According to her, "It is action such as this that kills their (women's) ambition and enthusiasm for becoming a leader".

Similar comments were expressed in a discussion with a HoI from another university, who indicated that while women have the ambition and qualifications to hold leadership positions, they are shortlisted but not selected due to the proportionately larger number of male applicants who have a greater chance of landing a role. Despite the odds, she continued, "Unless you apply you won't get selected. You need to show your worth and willingness"

Conversation with another HoD revealed that having a female leader in a position of authority does not always lead to a more equitable environment. She described one instance where a young female faculty member was 'catcalled'[12] and received support from a male HoD rather than the female HoD of her department. Secondary data indicates that empowering male faculty as allies for gender equity creates a positive climate for women in STEMM. For example, a university in the United States introduced Male Faculty 'Ambassadors' to promote Gender Equity in the STEMM Fields[13].

"The most important thing for gender advancement is that they (women) are heard"
- HoI, Medical institute

12. A loud, sexually suggestive call or comment directed at someone publicly
13. https://www.albany.edu/news/93178.php; Abrams, L., Shoger, S.G., Corrigan, L., Nozaki, S.Y., Narui, M. and Jayakumar, A., 2016, June. Empowering male students as allies for gender equity within an engineering college. In 2016 ASEE Annual Conference & Exposition.

In conclusion, all participants acknowledged that while they recognise the importance of women in leadership and decision-making positions, there is no formal policy in place to encourage and enable it.

4.2 Gender Policies, Processes, Procedures, Practices

This section will explore the themes of work life dynamics, infrastructure and welfare support, where topics such as maternity leave, safety and security will be discussed. Following this, the section will seek to explore the existing access to, and utilisation of redressal mechanisms associated with sexual harassment and ragging[14].

4.2.1 Work life Dynamics

In adherence to the Government of India's Maternity Benefit (Amendment) Act, 2017, all GATI Institutions provide female staff with maternity leave for the stipulated period. Compliance with childcare leave[15] is also followed by many GATI Institutions. However, reintegrating back into the workspace has proven challenging for women in STEMM careers.

There appears to be a lack of consistency in the approach to providing flexible working hours to female employees returning from maternity leave. For example, a leading Research Institution in the study does not enable women to transition from full to part- time work following maternity leave, while a participating university does allow it for a certain period of time. Hence, support varies for each GATI institution depending on the institution type, gender equitable policies and practices.

Innovative policies are also in place to help manage careers break such as the "Tenure Clock Stop". This is A gender equitable policy created by a university that is participating in GATI. This policy enables female staff members to take up to one year leave per child (up to two children) without the gap year negatively impacting their career progression. This allows women who have childcare responsibilities to remain on their career path without losing out due to care work.

Over the last few years, various informal supportive practices have been implemented to assist female employees in managing their care obligations. For example, one of the participating GATI Institutions provided assistance in raising funds to enable female faculty members to attend an international conference or seminar with her child or children.

"It's unfair that women have to take the lead when childcare is required. Work suffers in their absence. You need a support system to reach your goals, a driving force to reach excellence. If you don't have a support system then women can't reach their aspirations"
– HoD, Research Institution

"After maternity and childcare leave, getting them (women) back is crucial"
- HoD, Institution of National Importance

14. Ragging is any physical, verbal or mental abuse committed by one student against another student belonging to an educational institute.
15. Child Care Leave is granted to women employees for a maximum period of two years for taking care of their minor children (up to eighteen years of age).

4.2.2 Infrastructure and welfare support

Over the years there has been increased awareness of the importance of access to safe workspaces in order to enable a more gender inclusive environment among GATI Institutions in STEMM.

These opinions were reflected during the conversations with key stakeholders, which demonstrated that the position of leadership has a significant impact on the amount of attention given to infrastructure and welfare support. For example, it was determined during a discussion with the HoD of a leading Institution of National Importance that the lack of adequate washrooms, on-campus crèche (only mobile crèche available), and other gender sensitive facilities has had a negative impact on retaining and engaging female academic and non-academic staff. She went on the say that having a supportive leadership team in place, as well as the introduction of the supernumerary quota with a greater focus on bringing women into the institute, has resulted in a reduction in some of the "toxic masculinity associated with the Engineering and Technology sector". She concluded by stating that though the work environment is far less hostile due to the additional safe spaces and facilities, it is not close to adequate for the current needs.

A similar sentiment was echoed by a representative of a participating Research Institution in the study, who said that, while the organisation culture has become more gender sensitive as a result of initiatives to engage with more female students and faculty via gender focused policies related to safety and well-being, the corresponding gender sensitive facilities such as women's washrooms, creche, private breastfeeding rooms, etc have not increased to match the growth of the number of women in the institutions.

Findings indicate a high degree of variance among GATI Institutions in terms of access to gender sensitive facilities within the workspace. For example, there are some Agricultural institutes that do not provide crèche facility while there are other universities that not only provide an on-campus crèche but also many other facilities such as women's resting lounge, women only common rooms, private workspaces, hotline numbers, dispensary with female doctors, etc.

With regard to safety and security, provision of CCTV surveillance, good lighting, buses/cabs facilities for pick up and drop, and ensuring adequate female security guards are some initiatives to taken by the GATI Institutions to ensure safety of students and staff. According to the discussion with stakeholders from the GATI Institutions, for students in particular, girls-only hostels are a great source of security. As a result, those institutions with adequate hostel space have seen a great influx of female students at undergraduate level over the past few years. For example, one of the universities in the study has sought government funds to build more hostels to attract more female students.

4.2.3 Dignity at Work

The levels of awareness and accessibility to preventive measures and redressal mechanism play an important role in influencing the gender

"People are becoming aware of the need for gender sensitive facilities and mechanism only now. Not at policy level but individual perception level"
- University representative

climate of the GATI Institutions. Among the participants in the study, 96.6 per cent of the women surveyed, and 96.1 per cent of the men surveyed said that they were aware that their institution does have safeguards against gender-based discrimination and harassment.

Figure 20: Awareness level of men and women regarding institutional safeguards against gender discrimination and harassment

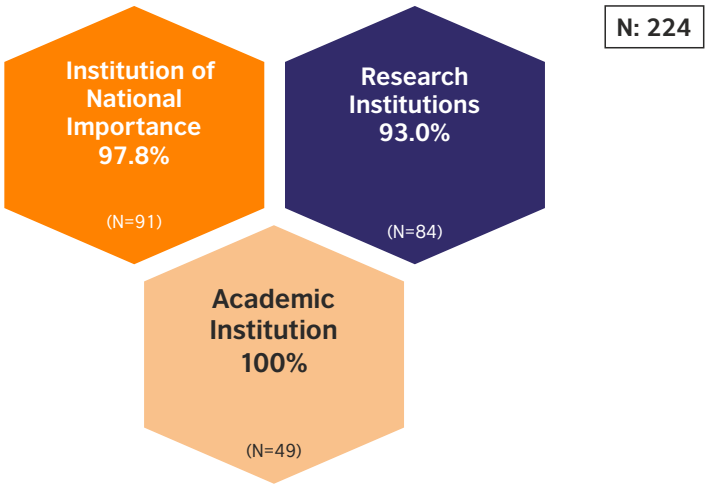
96.6%
women are aware of institutional safeguards against gender discrimination and harassment

96.1%
men are aware of institutional safeguards against gender discrimination and harassment

Further analysis of the data indicates that the awareness levels regarding institutional safeguards against gender discrimination and harassment is fairly comparable for women surveyed across treatment and control institutions, as well as in terms of academic and non-academic staff.

In terms of category of Institution, all categories had over 90 percent awareness among women regrading gender-based discrimination and harassment, with Medical and Agricultural Institutions having 100 per cent.

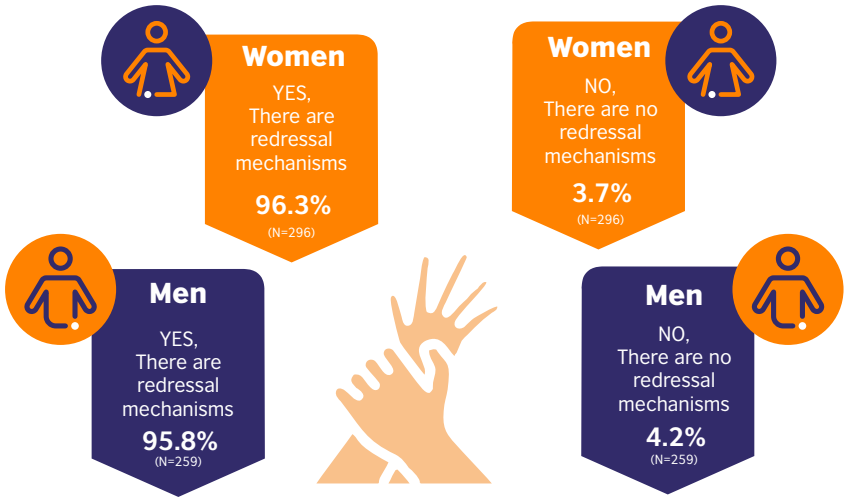
Figure 21: Women's awareness of safeguards by category of Institution (only treatment)



In terms of awareness of redressal mechanisms in cases of sexual harassment, 96.3 per cent of women surveyed, and 95.8 percent of men surveyed were aware of the existence of redressal mechanism in the case of sexual harassment.

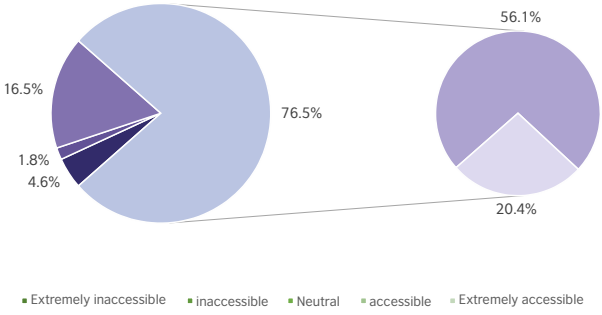
In terms of category of Institution, all categories had over 90 percent awareness among women regrading gender-based discrimination and harassment, with Medical and Agricultural Institutions having 100 per cent.

Figure 22: Are redressal mechanisms available to women in cases of sexual harassment



Following this, analysis of the redressal mechanism in terms of effectiveness showed that approximately 76.5 percent women who were aware of redressal mechanisms felt these mechanisms were accessible or extremely accessible, while approximately 16.5 percent took a neutral stand.

Figure 23: According to women are redressal mechanisms accessible and equitable (N=285)



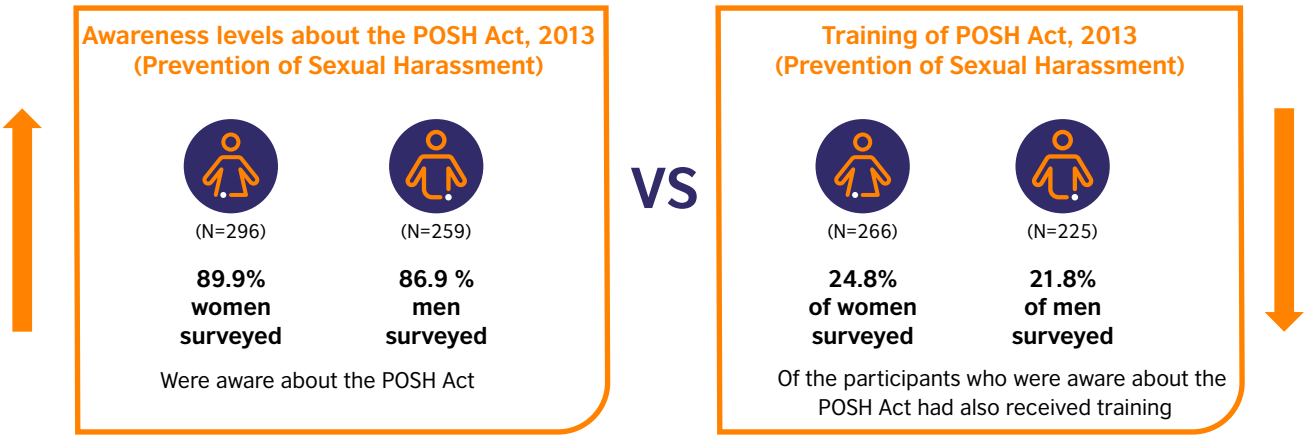
4.2.3.1 Posh Act

The most effective tool currently available, for addressing sexual harassment is the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act). A landmark legislation that is upheld by all GATI Institutions in the study.

Among the participants in the study, 89.9 per cent of women surveyed and 86.9 percent of men surveyed were aware of the POSH Act. This includes awareness of what constitutes sexual harassment and the existence of redressal mechanisms such as Internal Complaints Committees (ICC). Furthermore, all participants were aware of the POSH policy in place at their individual institutions.

Among the participants in the study, 89.9 per cent of women surveyed and 86.9 percent of men surveyed were aware of the POSH Act.

Figure 24: Awareness levels vs training on POSH Act 2013 for men and women

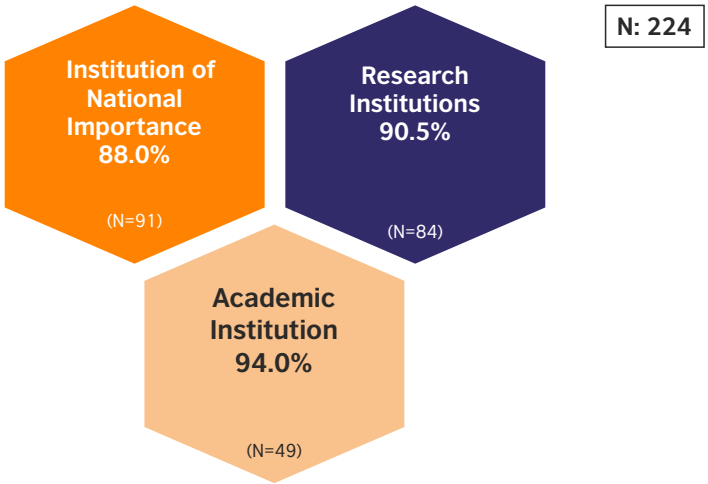


Among those participants who were aware of the POSH Act, only 24.8 per cent women and 21.8 per cent men said that they had received POSH training.

Among those who said they were aware, there was only a minor difference between academic and non-academic staff. In terms of awareness levels, treatment and control institutes were likewise fairly comparable.

While analysing by category of institution, it was interesting to note that awareness among Research Institution was relatively high at 98.1 per cent among women, with the remaining types of institutions, between the range of approximately 85-89 percent for women.

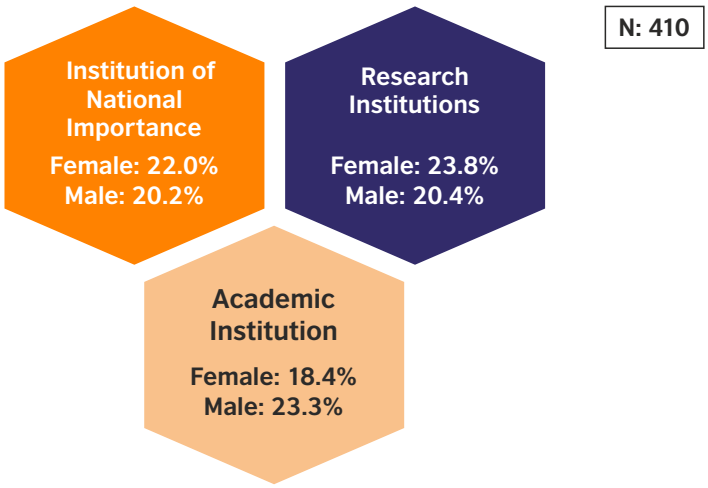
Figure 25: Awareness level of women on POSH Act by category of Institute



In terms of category of institution, in keeping with the results above, 28.3 per cent of female participants from Research Institutions had received training, which was relatively high among the GATI institutions, where only 5 per cent of the men received the same training. Conversely, with regard to Medical and Agricultural Institutions, no female participant received POSH training, while 28.6 per cent men received the training.

Awareness among Research Institution was relatively high at 98.1 per cent among women, with the remaining types of institutions, between the range of approximately 85-89 percent for women.

Figure 26: Training on POSH Act by category of Institution



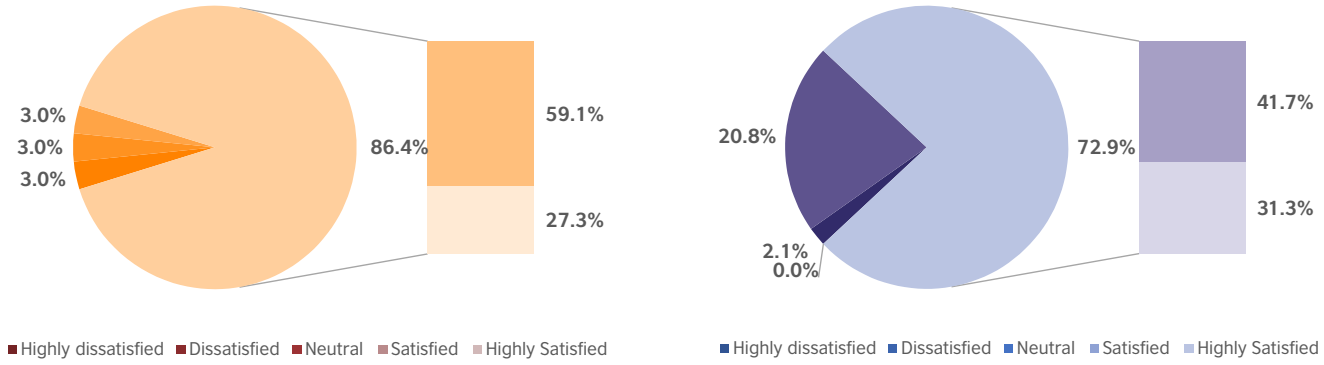
Note: The 'N' varied depending on the number of men and women per institute

Among those that received training, frequency of the training was mainly limited to once a year (51.5 per cent women and 57.1 per cent men), followed by once in every six months (36.4 percent women and 24.5 percent men).

Figure 27: Frequency of training received by men and women

In assessing satisfaction levels of the training, 86.4 percent women surveyed were either satisfied or highly satisfied, compared to 72.9 percent men.

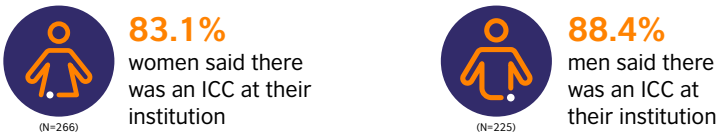
Figure 28: Satisfaction levels regarding POSH training (N for women= 66; N for men=49)



In assessing satisfaction levels of the training, 86.4 percent women surveyed were either satisfied or highly satisfied, compared to 72.9 percent men.

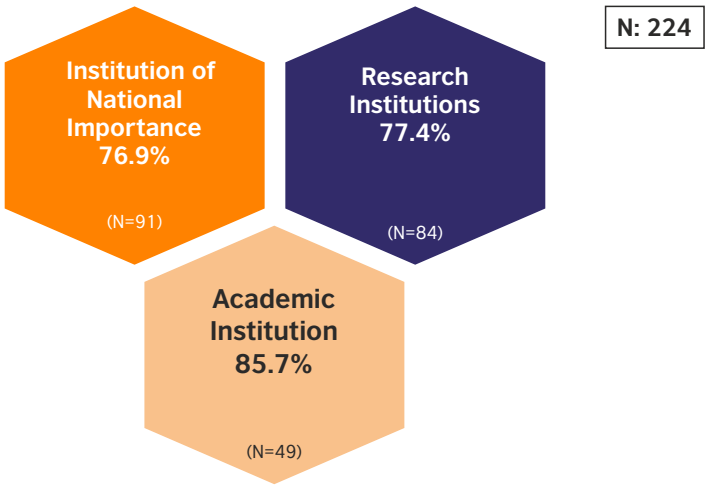
A key component of the POSH Act is the establishment of the Internal Complaints Committee (ICC). Among those who said they are aware of the POSH Act, 83.1 per cent of women surveyed, and 88.4 per cent of men surveyed were aware of the ICC in their institution.

Figure 29: Awareness levels of men and women regarding ICC



By category of institution, Research Institutions had relatively high awareness levels of the ICC at 77.4 percent of total women surveyed, with the lowest at 67.1 percent by women in the Institution of National Importance.

Figure 30: Awareness levels of women regarding ICC by category of Institution



The data clearly establishes that while the awareness levels of redressal mechanisms and the POSH Act is high, the implementation training and practices are not consistent across many GATI Institutions. Qualitative interactions with stakeholders have reaffirmed these findings.

All GATI institutions have a variety of 'women's / gender sensitisation committees available for both staff and students to approach in case they face any form of gender discrimination or harassment. In line with this, many institutions have gone above and beyond what is legally mandated and conducted a number of anti-gender discrimination and sensitisation activities, both offline and online. For example, in collaboration and cooperation with NGO's, Anti-discrimination committee staff members, University Proctor, Police, etc., many GATI institutions have begun to conduct gender equality workshops and sessions. Anti-ragging workshops are also conducted during the induction process for students across the institutions.

The adherence to the POSH Act has also led to the establishment of an ICC committee with standardised processes with regard to what behaviour is acceptable and what is not acceptable. However,

The data clearly establishes that while the awareness levels of redressal mechanisms and the POSH Act is high, the implementation training and practices are not consistent across many GATI Institutions.

discussions with stakeholders revealed that availability of regular POSH training was still lacking, with many stakeholders unsure or unwilling to attend the training. The reason for the unwillingness usually stems from a lack of belief that sexual harassment is a cause of concern for the country. However, that belief is slowly changing following the efforts to provide a more gender equitable and sensitive work environment.

With regard to cases of sexual harassment, a zero-tolerance policy is adopted by the GATI Institutions. Therefore, any cases that emerge are dealt with in accordance with the institution policy and the POSH Act. However, discussion with the stakeholders from multiple GATI Institutions has brought to light the social and cultural stigma associated with opening up on actions of sexual harassment.

Another area of concern that has emerged from the interactions is the time taken by the ICC to resolve complaints of sexual harassment. According to a representative from a university, the enquiry process could take up to two or three years. As a result, the harassed student or staff either do not raise complaints and continue to suffer, or they are transferred to a different department hoping the situation will resolve itself. However, according to the representative, it leaves the perpetrator open to harass other women freely.

With the spread of COVID-19, online harassment has become an emerging cause of concern for GATI Institutions. To address this, some have begun to share awareness videos in the hope that online harassment will reduce. For example, a university in the study has begun a workshop called 'Stand up against violence' for male and female students and faculty. This workshop, among others, is geared at teaching techniques to recognise and prevent violence from happening.

It is important to note that while the gender discriminatory activities and adherence to response mechanisms like the POSH Act may vary with each GATI Institutions, they agree that more needs to be done to prevent all forms of harassment and discrimination from occurring.

"Enquiry should be time bound..(as) justice delayed is justice denied"
- HoD, University

4.3 Gender Climate and Organisation Culture

This section will explore the themes of diversity and inclusion among students and staff and its influence on organisational culture and perceptions. This section will also discuss visibility and recognition of women in science, and the ongoing outreach and engagement activities of the GATI Institutions in STEMM.

4.3.1 Student Support

In order to create a sense of belonging and help students familiarise themselves with the institutional ecosystems, the GATI Institutions conduct orientation sessions for their incoming students. During the session, all students are informed about the various policies including those around gender discrimination, anti-sexual harassment etc., as well as the related redressal mechanisms.

Counselling is also provided by the GATI Institutions whereby students are encouraged to seek out services related to their overall mental and emotional wellbeing. This can be via professional counsellors, members of women's committees or even by senior faculty members. With the onset of covid-19, these services have proven to be a necessity. With regard to guidance and mentorship, some GATI Institutions have a more structured programme in place than others. For example, a university in the study has set up mentoring sessions as a part of the course curriculum whereby students are assigned a teaching staff mentor on entering their respective educational institutions. Whereas a medical institution in this study has no structured mentorship programme, but in practice provides support to the students to address personal and professional challenges.

Some of the innovative programmes run by GATI Institutions include:

- The Non-Collegiate Women's Education Board (NCWEB). The NCWEB is a unique initiative which allows women who are unable to join the mainstream education to access quality education. Within the STEMM subjects, this initiative provides support for Mathematics.
- 'She for Her' initiative where select college student representatives are sensitised on how to tackle harassment and become promoters of women empowerment. Their efforts are recognised and awarded.

The NCWEB is a unique initiative which allows women who are unable to join the mainstream education to access quality education. Within the STEMM subjects, this initiative provides support for Mathematics.

4.3.2 Gender responsiveness and workload distribution[16]

4.3.2.1 Research publications

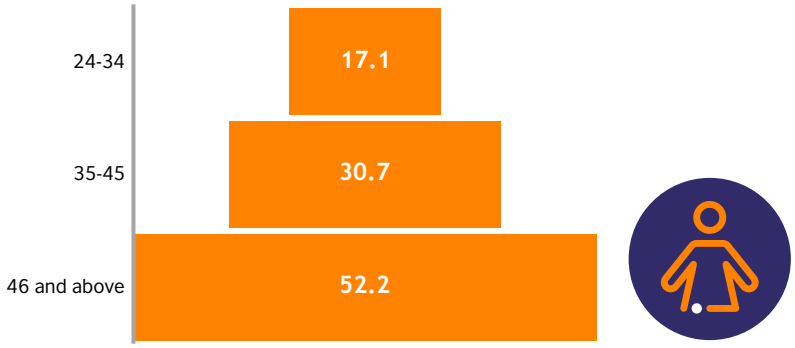
Publication of research material plays an important part in the life cycle of faculty and researchers within institutions across the world. In India, publication of research material is not only about creating knowledge and gaining recognition, but also integral to the appraisal and promotion process. Currently, India is the third largest producer of scientific publications after the United States and China[17]. Survey results revealed that around 81.2 per cent of women and 82.2 per cent men surveyed have published at least one research paper. This indicates that academic staff members contribute at similar levels regardless of gender.

Figure 31: Gender wise distribution of those who have published at least one research paper

16. All analysis in this section has been conducted only for academic staff.
17. https://m.economictimes.com/news/science/india-is-worlds-third-largest-producer-of-scientific-articles-report/articleshow/72868640.cms

When analysing the data against age and marital status of women it was interesting to note that while marital status had no significant impact on the number of publications, age on the other hand had a positive and significant effect. As seen in the graph below, as age increases number of publications also increases i.e those above 46 years accounted for 52.2 per cent of the publications. This can be attributed to the experience that comes with age.

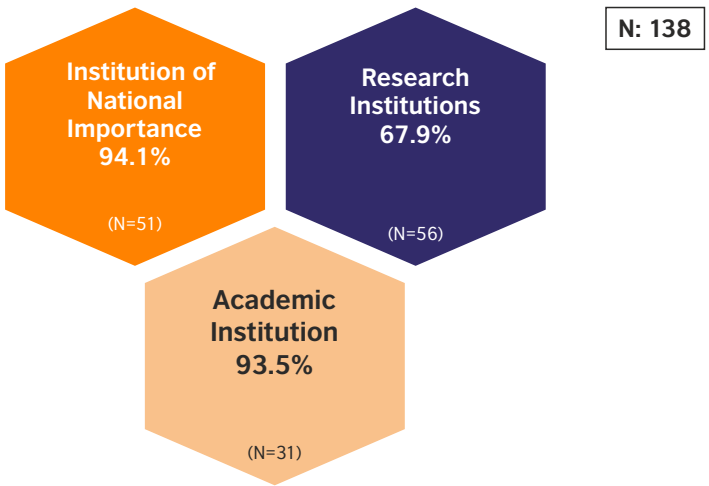
Figure 32: Age wise distribution of women who have published at least once (N=147)



Among those who have published at least one research paper, 98 per cent women have also published in a peer reviewed journal.

When analysing the data by category of institution, it was found that relatively lower number of publications (52.5 per cent) were from women in Research Institutions, while those from Universities and Institution of National Importance had published relatively more at 95.6 per cent and 93.3 per cent, respectively.

Figure 33: Category wise distribution of women with at least one publication



Relatively lower number of publications (52.5 per cent) were from women in Research Institutions, while those from Universities and Institution of National Importance had published relatively more at 95.6 per cent and 93.3 per cent, respectively.

In terms of ongoing research, 87.8 per cent of women surveyed and 89.7 per cent of the men surveyed have at least one ongoing research project. This indicates that like the findings from the total research publications above, there is very little gender gap in the area of research publications.

Figure 34: Gender wise distribution of those who are part of at least one ongoing project

87.8%
women are a part of at least one ongoing project
(N=181)

89.7%
men are a part of at least one ongoing project
(N=146)

In the case of ongoing research publications, it was found that women in treatment institutions had more ongoing research projects (91.3 per cent) compared to women in control institutions (76.4 per cent).

Figure 35: Participation of women in at least one ongoing project, analyse by treatment and control institutions

(N=138)

Treatment

91.3% of women in treatment Institutions are a part of at least one ongoing project

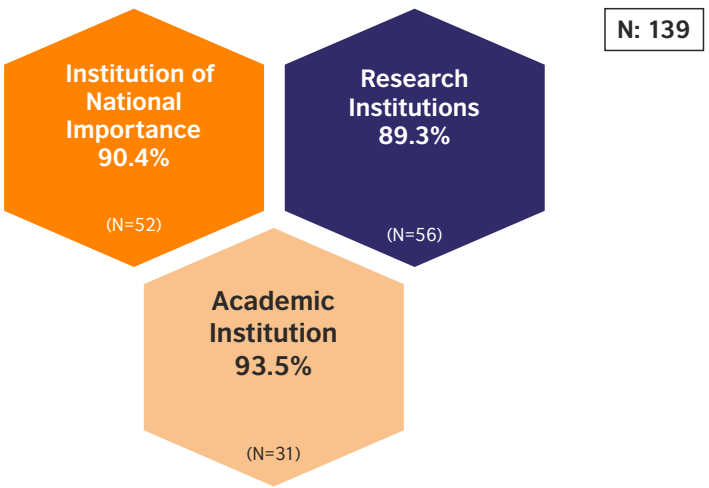
(N=43)

Control

76.7% of women in control Institutions are a part of at least one ongoing project

Analysis of the data set in terms of women across various categories of institutions showed that, Universities and Institution of National Importance again had the highest number on ongoing research projects at 93.3 per cent each, while Institutions (Medical and Agricultural) had the least at 75 per cent

Figure 36: Category wise distribution of women with at least one ongoing project



Women faculty are the best performance in research ...because they are proactive in disseminating their research"
- HoI, University

These findings are reflected in discussions with representatives from the GATI Institutions, who stated that no discrimination was there between genders in terms of publication, as ability and skill were the two main components to success in this regard.

However, while the majority of the respondents agreed with this statement, a few respondents went on to add that while women may be successful researchers, they have a much smaller 'window' within which they have to build a career in research. One respondent from a Research Institution in the study supported this by saying that marriage and children can hamper the career path of women forcing them to choose one over the other. She went on to say that returning to a career as a researcher is difficult as they are likely to lose out in terms of intellectual development and personal opportunities while balancing a career with their care responsibilities.

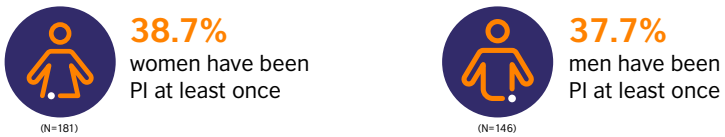
Other respondents also agreed that it is because of reasons such as these that women prefer to choose teaching as a career path over research.

"Women have to prove 105% to get 100%"
- HoD, Research Institution

4.3.2.2 Principal Investigator

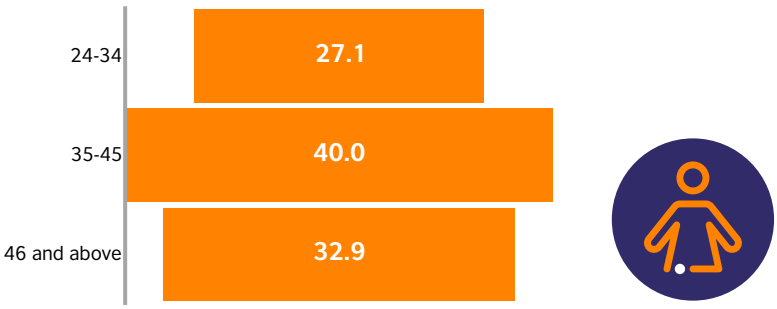
In exploring the role of principal investigator, 38.7 per cent women surveyed and 37.7 per cent men surveyed have been principal investigator (PI) at least once.

Figure 37: Gender wise distribution of those who have been PI at least once



Among the women who have assumed the role of PI at least once, majority of them are between the ages of 35-45 years (40 per cent).

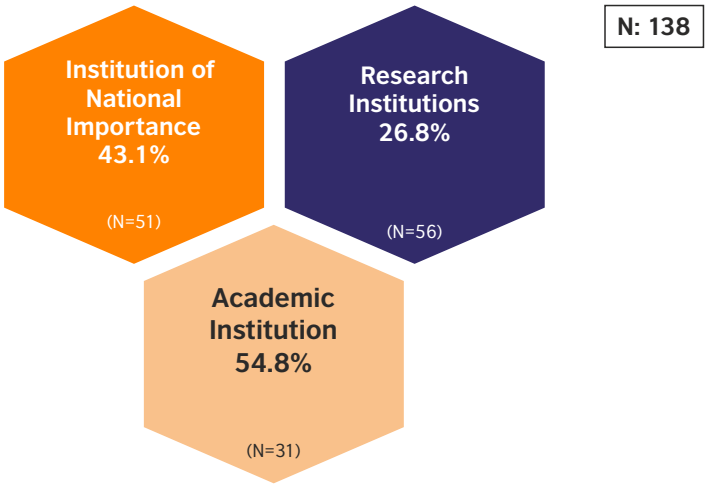
Figure 38: Age wise distribution of women who have been PI at least once (N=70)



Analysis of women by category of institutions shows that Institutions (Medical and Agricultural) and Universities, at 50 per cent and 48.9 per cent respectively, had relatively high number of respondents who

were PIs, followed by Institution of National Importance at 42.2 per cent and lastly by Research Institutions at 22.5 per cent.

Figure 39: Category wise distribution of women who have been PI at least once



For example, despite having only 7 per cent female professors, a representative from an Institution of National Importance revealed that of the 50 research projects valued at INR 40 crore, INR 20 crore funds have female principal investigators or co-investigators.

4.3.3 Promoting women in science

In order to encourage more representation of women in science, it is crucial that an enabling, equitable and inclusive environment is created. A big step towards creating such as environment is to enable women in STEMM to benefit from schemes/policies aimed at improving gender inclusivity. According to the findings from the survey, only 18.2 percent women (of the total women surveyed) and 6.8 per cent men (of the total men surveyed) claimed to have benefited from any government run schemes/policies aimed at improving gender inclusivity.

Figure 40: Gender wise distribution of those benefitting from Government schemes

18.2%
women have benefitted more from Government schemes

6.8%
men have benefitted more from Government schemes

While still low overall, women have benefited more than men due to access to 'women only' schemes and awards such as Department of Science & Technology's (DST's) Women's Scientist Scheme, Department of Biotechnology's (DBT) National Women Bio-scientist Award, Science and Engineering Research Board's (SERB) Women Excellence Award, etc.

"Some programmes in the Department of Science and Technology and Department of Biotechnology for women scientists, help the women in making themselves better ..and teaches them about leadership"
- HoI, Institution (medical and agricultural)

18. Designed to attract the best talent into research thereby realising the vision of development through innovation. (https://may2021.pmrf.in/)

In addition to women specific awards and recognition, there are other STEMM based schemes and fellowships which women have been able to access and benefit from. These include research fellowships from Indian Council of Medical Research (ICMR), UGC, SERB's power grant, DST's Innovation in Science Pursuit for Inspired Research, TATA Innovation Fellowship etc. A representative of a university in the study reiterated the strengths of female researchers by recognising the achievements of five female students who received the Prime Minister's Research Fellowship[18].

There are a few promotional initiatives carried out by the GATI Institutions. Some have held events specifically for women, such as talks and panel discussions, by inviting notable female scientists to act as role models. A leading female researcher from Stanford, for example, presented a workshop on communication and computers at an Institution of National Importance. Others, such as a university in the study, has introduced a gold medal for female students who demonstrate academic excellence. Similarly, a Research Institution has instituted gold medals to identify female achievers as role models, both for academic and non-academic staff. The scarcity of suitable female candidates to award was cited as a source of concern, as there are relatively few in the Research Institution in question, and the selection requirements can be fairly stringent. The representative claims that this problem may be easily handled by recruiting more women and thereby expanding the pool of candidates.

"By looking at you they learn, by involving them they get inspired" - HoD, University

While these promotional activities and programmes for women in STEMM are encouraging, several participants agreed that the government and institutions could do more. A representative from Research Institutions, for example, mentioned the national training programme for government-employed scientists and technologists under DST's Women Scientist Scheme, INSPIRE programme. She described her interactions with other female scientists as "inspiring" and a "wonderful social environment (that) went beyond just a learning process"

4.3.4 Outreach and engagement activities

Respondents in the study were clear in stating that outreach was an important part in encouraging women to enter STEMM careers. However, while recognising its importance, not many GATI Institutions have a structured programme for conducting outreach activities. One reason that emerged for this was the lack of time i.e. faculty responsible for outreach are quite busy and making time for such activities on a regular basis is challenging.

While acknowledging the difficulties, the GATI Institutions have taken proactive attempts to identify bottlenecks in terms of culture at home or at school that may prevent women from pursuing careers in science. To address this, they have developed outreach strategies or mechanisms, such as the DST-funded Kishore Vaigyanik Protsahan Yojana (KVPY) programme, which supports women in gaining admission to undergraduate programmes. Through this programme, a university in the study has provided female students with the opportunity to connect with scientists who have made significant advances in a variety of scientific domains.

Among the other outreach programmes were the:

- Women Entrepreneurship and Empowerment (WEE) Programme is an initiative undertaken by an Institution of National Importance within the study. Its main objective is to encourage women to become entrepreneurs through entrepreneurship
- Chetana programme, partially funded by the Government of Karnataka is another such programme that benefits girls in classes 10th to 12th and allows them to spend two weeks on college campus, listen to lectures etc., in order to help them experience what science and research is about.
- DST's Vigyan Jyoti programme, a mentoring-style programme where girls from classes 11th and 12th from rural areas around the university are brought on campus to raise their awareness about STEMM as a career path.

- General efforts made by GATI Institutions to visit the surrounding community and encourage uptake of STEMM

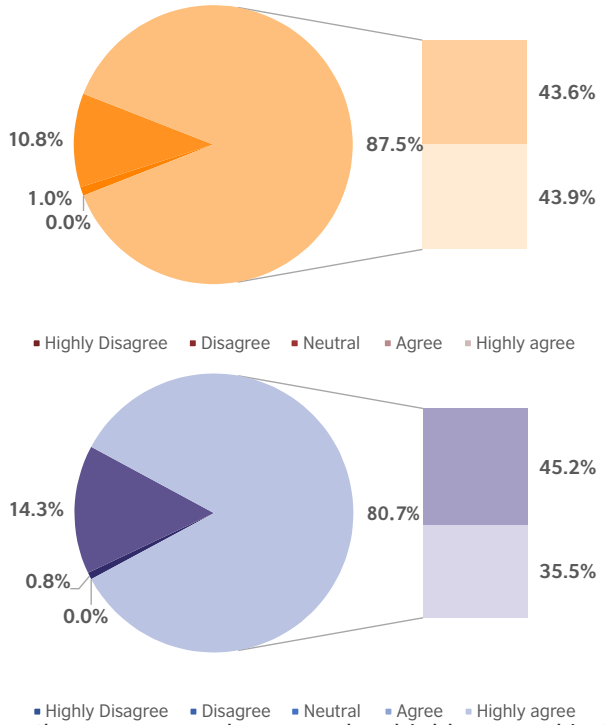
While all these programmes are taking steps towards gender equality in STEMM, a representative from one of the GATI Institutions admitted that the outreach is more practice than policy, depending heavily on the commitment of the leadership team and academic staff.

4.3.5 Organisation climate

Discussion with GATI Institutions revealed that there is no gender bias of an obvious kind, but unconscious gender bias does exist.

The promotion of initiatives in order to create an organisational climate that fosters gender advancement is a crucial steppingstone to a more equitable and inclusive workspace. Hence, on surveying the participants in the study, it is determined that 87.5 per cent women surveyed and 80.7 per cent men surveyed felt that it was important to undertake gender advancement initiatives in STEMM oriented fields.

Figure 41: Gender wise perception on importance to undertaking gender advancement initiatives for STEMM (N women 296, N men 259)

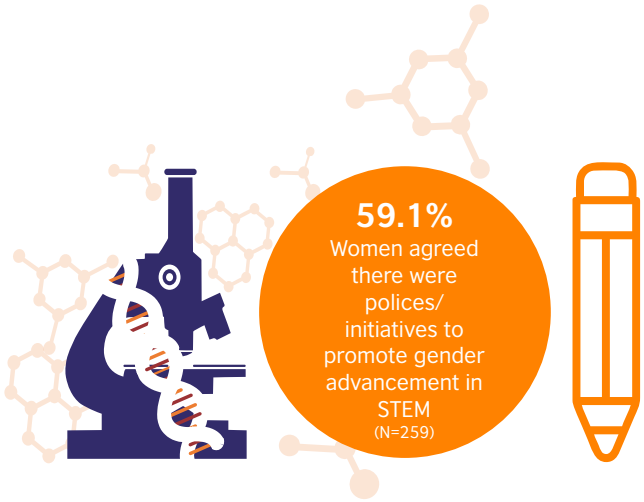


Among those women who agreed or highly agreed in the question above, 59.1 percent women were aware of policies or schemes that promote gender advancement within their institutions.

When questioned further, majority felt that redressal mechanisms for tackling gender harassment and discrimination such as the women's/grievance cell, ICC, etc., were the most useful in creating an enabling work environment. There were even some who mentioned the GATI programme, which shows the degree of awareness and

"(We) expect women to behave like men in the workplace, and women take it on"
- HoI, University

interest by the participants to promote a more gender inclusive culture.



In conclusion, it is clear to see that the findings from the study have highlighted many positive/affirmative initiatives of the GATI Institutions regarding their efforts over the years to create a more gender equitable and inclusive environment. Yet there is still a long way to go to achieve the level of success and advancement that puts men and women on an even playing field. The chapter below uses the finding from the study, coupled with secondary literature, to highlight some of the key barriers and challenges that impact women in STEMM.

There is still a long way to go to achieve the level of success and advancement that puts men and women on an even playing field.

Section 5

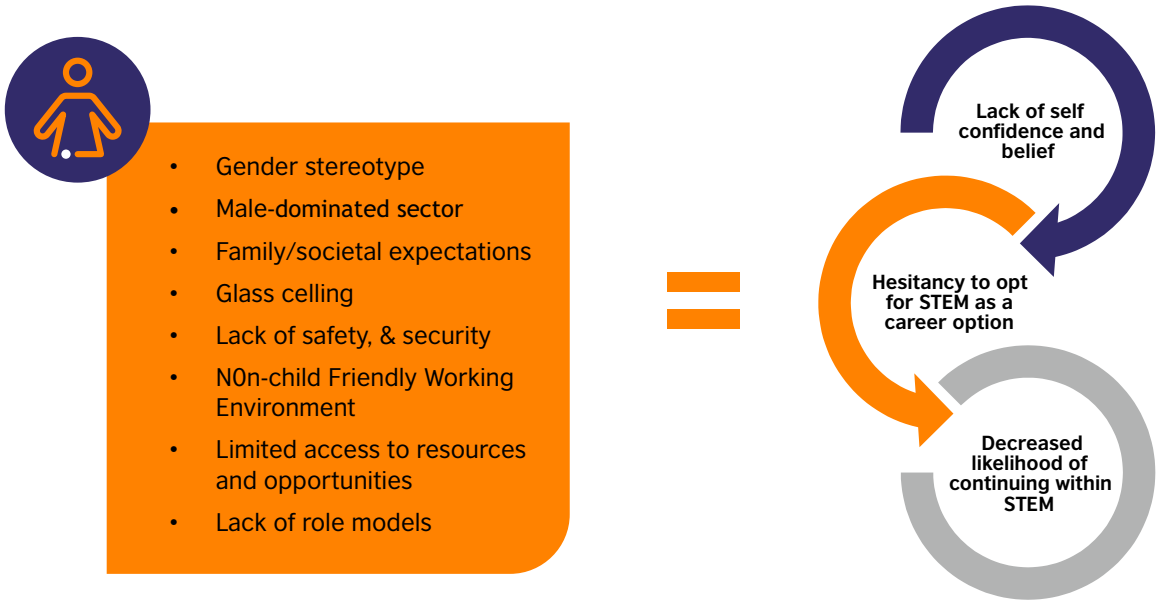
Discussion and synthesis

5. Discussion and synthesis

STEMM is largely viewed as critical to the national economy, yet women continue to be underrepresented. The fact that there is a considerable difference between male and female faculty distribution in STEMM fields cannot be explained just by a lack of female students. The "leaky pipeline effect," in which leaking occurs in school, undergraduate, postgraduate, PhD, post-doctoral, and faculty level jobs, can explain the low proportion of female applicants pursuing a career in STEMM. This phenomenon is further supported by data gathered during the interactions, where many representatives from GATI Institutions stated that the transition from secondary school to college and from PhD/post-doctoral to faculty posts are two of the most significant leaks in the system[19]. Findings indicate that the continuous loss of women in STEMM is the result of multiple barriers and hindrances. The diagram below is a snapshot of some of the constraints and barriers faced by women pursuing careers in STEMM.

"Give them a vision of their future and they will come"
- HoI, University

Figure 42: Effect of Barriers/Constraints on participation of women in STEMM



5.1 Gender stereotype, norms and bias

Discussions with respondents, and secondary data analysis indicate that women are considered inherently not as well-suited to STEMM as men, and consequently less proficient in these areas than men, according to a widely held stereotype. This is not a standard in the form of a set of unwritten laws, but rather a system of beliefs that drive behaviour. These stereotypes are frequently accepted at the

19. Swarup, A. and Dey, T., 2019. Women in science and technology: an Indian scenario. bioRxiv, p.817668.

school levels, where the foundation for a STEMM career is built[20]. A representative from an Institution of National Importance indicated that outreach programme for female students who are studying STEMM subjects or desire to pursue STEMM subjects should begin in school since bottlenecks start forming there. He went on to say that familial (parents) and cultural (society and tradition) limitations at home and school are also contributing factors to the persistence of negative attitudes towards careers in STEMM into adulthood. According to other respondents, traditional beliefs and archaic mindsets are another inhibiting factor impacting the career choices of women. For example, they stated that according to some beliefs, the higher one goes in terms of an educational degree, the harder it is to get a spouse. As a result, parents tend to not encourage their girl child to pursue further studies in favour of marriage.

These negative stereotypes and perceptions can harm the interests, engagement, and achievements of women in STEMM, as well as reinforce behaviour patterns of men and women in these fields. Discussion with representatives from the GATI Institutions revealed that these gender expectations and norms also get in the way of developing and refining skills such as confidence, being articulate regarding matters of a professional and personal nature etc.

For example, a HoD from a university in the study shared her experience where she stated that female faculty members hesitate to put their point/view across strongly. She commented on their submissive nature, and that even if they want to share correct facts or address incorrect facts, they hesitate to do it forcefully compared to the male colleagues who do it quite aggressively.

Bias, often unconscious, also limits women's progress in STEMM. For example, representatives of a Research Institution shared that within STEMM most people associate engineering and mathematics fields with "male" and biology and other life sciences fields with "female". Even among those who consciously oppose stereotypes, this form of unconscious bias is frequent and many times undetected. This bias has the potential to influence not only people's attitudes toward others, but also girls' and women's likelihood of continuing to pursue a career in engineering or mathematics. For example, a representative from an Institution of National Importance shared that, female students wanting to take competitive exams for engineering, were often discouraged from doing so, due to culturally prescribed gender roles which also influence career interest. He went on to say that when girls are allowed to sit for competitive entrance exams such as the Joint Entrance Examination[21], they consistently performed better than boys. Another representative from a university said that the main hurdle to encourage women to pursue STEMM is to convince the parents that a career in science is not that different from those in banking and other similar fields, etc.

Further, a HoI from a university in the study stated that patriarchal mindset and norms have made girls doubt themselves and created a hesitation amongst them later in life to enter into STEMM education

"I'm not saying that they should fight, but they are unable to put their point very strongly because of the fear that it may be taken in a wrong manner"
-HoD, University

20. Hill, C., Corbett, C. and St Rose, A., 2010. Why so few? Women in science, technology, engineering, and mathematics. American Association of University Women. 1111 Sixteenth Street NW, Washington, DC 20036.
21. JEE is an engineering entrance assessment conducted for admission to various engineering colleges in India.

and careers. Many respondents agreed with this statement and highlighted the importance of female role models in STEMM to facilitate gender inclusivity. They stated that a big part of the problem in encouraging women to enter technical fields, is that girls are not presented with many examples of women in the STEMM areas. One of the respondents said that "unless you see women performing, it won't encourage others to chase their dreams".

Hence, as discussed in the above section, women in STEMM fields can experience discriminatory bias and stereotypes that negatively influence their progress and participation. While interaction with respondents revealed that there is greater awareness of obvious bias, instances of unconscious bias continue to have an adverse effect on their choices and career path.

5.2 Social expectations, and balancing care responsibilities in the workplace

The findings from the study indicated that the number of women who apply for a particular post are far fewer than their male counterparts. One of the key reasons for this is related to cultural and societal expectations of women role as care givers. In other words, discussion with representatives indicated that among women and men with families, women are more likely be the primary caregiver, thereby may be unable to apply for a post advertised. They went on to say that this was one of the reasons why many women remain on contract or work on ad hoc basis.

Staying on a tenure path is often difficult as it is very competitive and requires a time commitment which women may not be able to give due to care responsibilities and inadequate support systems. Other representatives stated that due to their familial responsibility and driven by societal expectations, women prefer more traditional roles such as teaching rather than research. One representative from a university narrated an incident wherein two gold medalist students who held PhDs chose to teach at a college rather than become researchers as their families did not want them to spend long hours in research. She went on to state that this was "opportunity cost lost as they could have positively contributed to scientific research". In another institution it was found that women left their job as their "marriage could not take the strain of commuting anymore". Incidents such as these have raised awareness on the importance of spousal hiring as a viable alternative.

The study also found instances where female PhD candidates were not preferred as they "tend to get married". This resulted in senior male colleagues hesitating to take them on as students. For example, an HoD in a GATI Institution narrated an incident where a male colleague refused to take on a female PhD student when she got engaged, believing that she would leave the PhD programme. She went on to state that many times, departments had unwritten rules, where hiring of female faculty was discouraged as they are unable to commit the necessary time to the position. She did admit that while this view is slowly changing, they are still losing "bright female candidates".

"Women in STEMM are not just competing with other (male) peers, but also against the biological clock as well"
- HoD, Institution of National Importance

5.3 Enabling Environment: Career re-entry, safety and security

Discussions revealed that given the lack of a flexible career re-entry plan, career breaks result in a downward mobility in terms of employee status. While policies like 'Tenure Clock Stop' by a GATI Institution was a positive step in the right direction, respondents admitted that there is still a lot left to be done. According to a representative from a Research Institution, the impact of career breaks is more severe in research and technology-based careers, due to the fast-changing nature of the fields of study. Owing to the disadvantages of career break, career re-entry for women is often difficult. Many representatives stated that a provision for part time or flexible work was not always an option. Furthermore, a lack of availability of gender sensitives facilities such as organised on-campus childcare support led to women opting out of their career in STEMM in favour of their care responsibilities.

A consensus emerged that determined the importance of family support as a leading enabler in career resumption. Family members provided both emotional and instrumental help. Emotional support boosted the self-belief and self-confidence of women, while instrumental support provided tangible assistance during the career restart.

Findings also indicated that discrimination and sexual harassment were factors that hampered gender equality within the GATI Institutions and were leading causes of concern for many years. However, in recent times, stringent legislation and awareness helped reduce the seriousness of issues.

"When you see a successful woman scientist, the question I ask myself is - how many more there might be if it were not for the social conditions"
- University representative

5.4 Opportunities for Leadership

Despite progress, women continue to be underrepresented in STEMM leadership positions. According to the respondents, the 'glass ceiling' is no longer an appropriate analogy, as women have broken through to positions of responsibility throughout all GATI Institutions. They are, however, few and far between. According to one respondent, women in senior positions are typically older and more experienced, with less social obligations.

Interactions also revealed the existence of covert discrimination in the form of old boys' clubs[22], which tended to keep women out of the loop when it came to professional advancement and leadership chances. In the study, an HoD for an Institution of National Importance revealed her own experience of breaching the glass ceiling, describing how she encountered more obstacles and had to put in more effort than her male peers to prove herself 'suitable' for a senior post.

When in a leadership position, some respondents discussed the leadership style expectation placed on them because they do not fit the standard male gender leadership norms. Male leaders are

22. An informal system in which men with similar social or educational background support each other in business or personal matters.

expected to be straightforward and agentic, while women are expected to be nurturing and cooperative[23]. According to one university respondent, a female leader encounters more opposition than a male leader. This is because she was acting outside of her gender norms. A woman who acts agentic is generally seen negatively or with hostility. As a result, they are caught in a difficult situation.

In conclusion, findings from the study point towards covert discrimination, implicit biases, career preferences and life choices as some of the current issues hindering the participation of women in STEMM. However, recent efforts by both Government and Institutions alike, in the form of women focused initiatives like GATI could go a long way in creating platforms for change.

Covert discrimination, implicit biases, career preferences and life choices as some of the current issues hindering the participation of women in STEMM.

23. Laura, M., 2016. Women's Leadership in Science, Technology, Engineering & Mathematics: Barriers to Participation, Forum on Public Policy, vol. 2011, no. 2.

Section 6

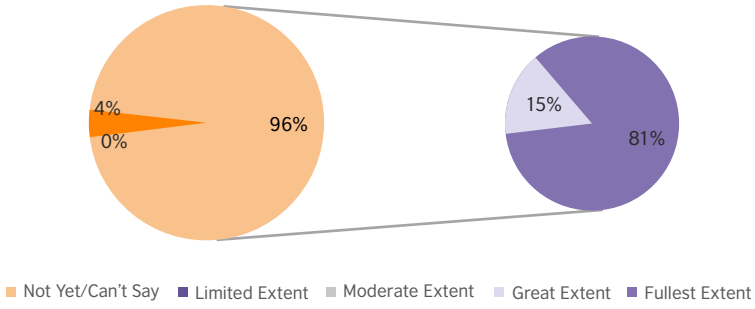
Platfrom for partnership

6. Platform for partnership

Gender equality and inclusion in STEMM higher education and Research Institutions requires collaborative action and support. The creation of a cooperative platform will enable diverse stakeholders to explore realistic and practical approaches. It will also help in aligning and coordinating the efforts to remove the social conventions that keep girls and women out of STEMM.

Interaction with the 30 GATI treatment institutions in the pilot study has further reiterated the need for the adoption of programmes such as GATI. This was corroborated further by the data collected from the GATI Institutions which indicated that 96 per cent of Institutes believed that there will be adequate participatory support for GATI from the entire community.

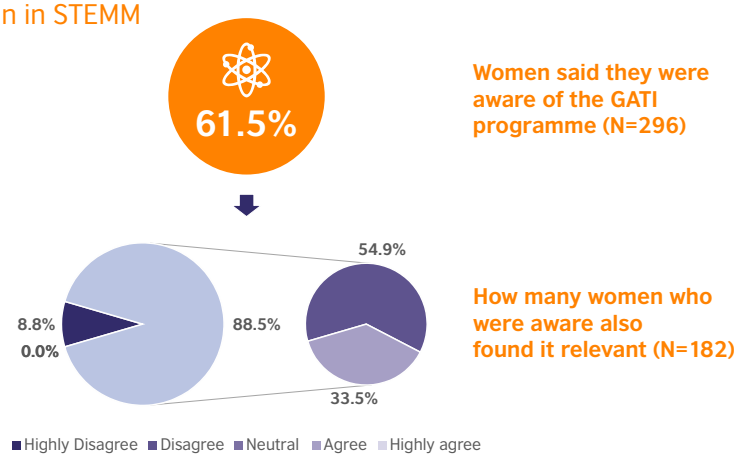
Figure 43: Level of participatory support for GATI from the entire community (N=30)



This participation will allow for the sharing of experiences and insights on how to dismantle gender norms and address gender barriers in GATI Institutions, thereby increasing women's participation and boosting their socio-economic empowerment.

According to the data gathered, 61.5 per cent of all women surveyed were aware of the GATI programme and its main objectives. Of these, 88.5 per cent agreed that the GATI programme was relevant and would help promote gender equality in STEMM higher education institutions in the country.

Figure 44: Awareness level and relevance of GATI programme for Women in STEMM



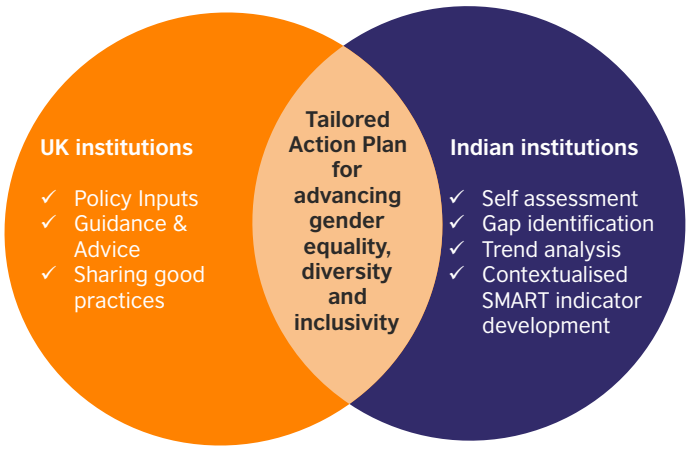
"The programme (GATI) is not to attract more women, but to assure them that you (women) are wanted"
– University Representative

Further, interaction with the institutes in the study brought to light their expectations that the GATI programme will act as a catalyst enabling women to overcome the structural and institutional challenges and be able to build a fruitful career in STEMM. The support provided by the DST in the form of recognition and accreditation has added credibility to the success and longevity of the programme.

6.1 Advancing equality, diversity and inclusivity through partnership

A key contributing factor to the adoption of GATI as an integral part of the organisational culture of 30 institutes in India is tied to the 18-month partnership with UK institutions. The UK Institutions are Athena SWAN charter members and therefore have experience in tackling issues such as a leaky pipeline, challenges for gender equality initiatives and actions, prevalent policies, organisational structure and culture.

Figure 45: Partnership Platform- Enabling factors

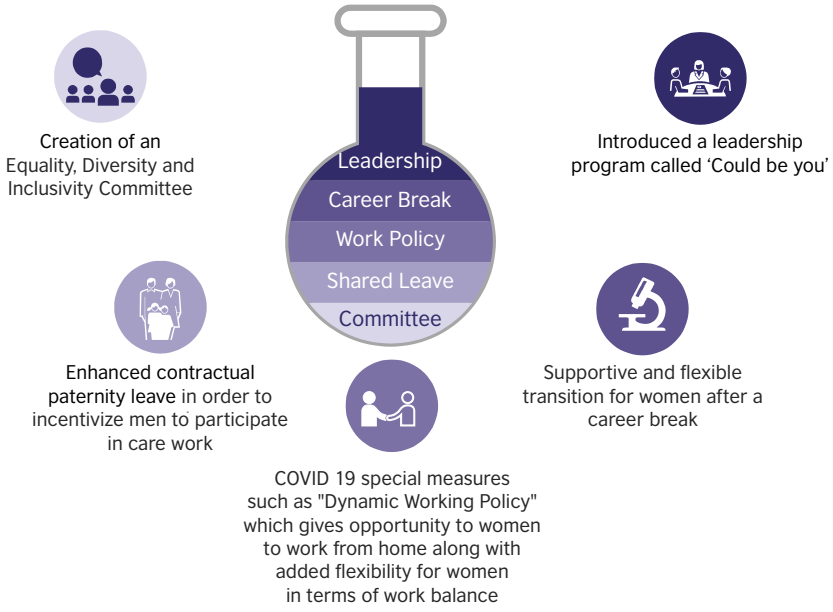


As discussed in the figure above, in order to create a tailored action plan for each institution in the pilot, it is necessary that the strengths and weakness of the institution be determined through a self-assessment process. This process will help clearly demarcate the areas where greater attention is needed to create a more equitable and inclusive environment. This exercise will also bring to light the unconscious bias that might exist within the institution structure and the attitudes, processes and polices therein.

"We have to look at it as reaching a stage when we do not have to talk of gender at all"
-HoI, University

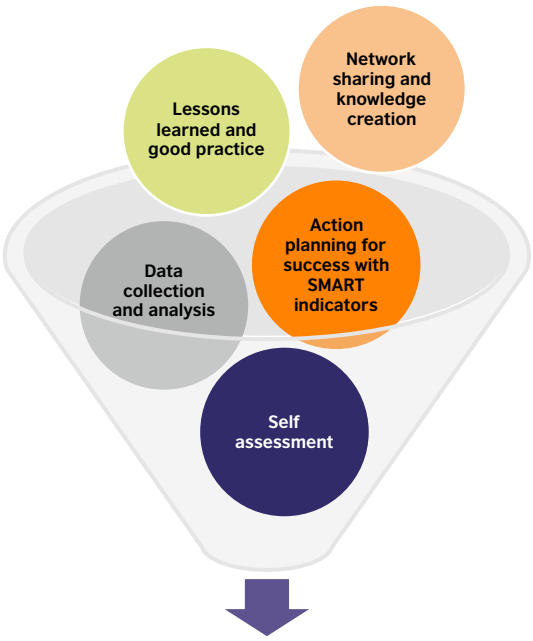
"if you want to grow, you need to identify your weakness"
- HoI, University

Figure 46: Initiatives and good practices adopted by UK institutions following Athena SWAN charter guidelines



It is important to note that while GATI Institutions in India seek to take advantage of a "path that is well trodden", they realise that flexibility is necessary to contextualise it to the socio, economic and cultural scenario in the country. This sentiment is echoed by UK institutions as well who stated that while their policy inputs and good practices will benefit the GATI Institutions, its replication must be carefully planned.

Figure 47: Components for successful execution of GATI



The expectation from the programme is that the international network that emerges from this partnership will go a long way in increasing the awareness and confidence of women in STEMM. It will also result in a shift in the attitudes of their male colleagues, who will begin to value and appreciate the views of female colleagues in the future. Its impact hopes to have a knock-on effect extending beyond the institution staff and influencing the community by establishing role models who will serve as a catalyst for the next generation of women in STEMM.

6.2 OUTCOME INDICATORS

This section discusses the first step towards achieving Gender Advancement within the participating Institutions. This section will assess the current status of the GATI Institutions with regard to key output and activity level indicators. These indicators are specially formatted in order to capture the impact of the activities of the GATI intervention. The current status of all the institutions regarding the measurable indicators is as given below.

6.2.1 Outcome 1

Outcome 1	Indicators	Baseline Value		Comments
STEMM higher education institutions develop and practice gender inclusive processes and systems		**GATI Institutions**	**Target**	
	Output Level Indicators			
	The gender equality framework's final draft developed within the first 2 months of project inception.	0	30	In Progress
	Number of framework elements designed based on contextual insights.	0	30	In Progress
	% of stakeholders that perceive the framework as a relevant measure to addressing the gender inequity issues in India.	30	30	All GATI Institutions perceived the need for a gender equality framework and felt it was relevant means to increase gender parity
	% of stakeholders that see the programme as a relevant means of increasing gender parity.	30	30	
	Number of participating institutions applying for the award (Applicants to Participant Ratio)	TBD	30	
	Activity level Indicators			
	Number of cases studies, needs assessments and literature reviews undertaken	0	30	In Progress
	A systematic literature review log created within the first month of project inception.	0	30	In Progress
	Number of members selected for the expert committee - An expert committee with 50 percent representation of women is constituted in the first month of project intervention.	0	30	In Progress
	Number of workshops conducted and attendance levels (gender disaggregated data)	TBD	30	To be decided
	Number of consultation meetings and attendance levels (gender disaggregated data)	TBD	30	To be decided
	Number of expert committee meetings and attendance levels (gender disaggregated data)	0	30	To be decided
	Number of Athena Swan principles incorporated	TBD	30	To be decided

	Number of partnerships with UK orgs developed	6	6	To be decided
	Panel interview/recommendation transcripts	TBD	30	To be decided
	Final list of the members of the assessment body with gender disaggregated data	TBD	30	To be decided
	Number of training sessions	TBD	30	To be decided
	Number of members that attended the training sessions. (Attendance levels)	TBD	30	To be decided
	% of panel/assessment body members that have developed the skillset required to assess award applicants (Reflected by post session feedback forms and exit tickets)	TBD	30	To be decided
	Number of literature development sessions within the first two months of project inception	TBD	30	To be decided
	Finished training materials	TBD	30	To be decided
	Number of self-assessment training sessions within the first 3 months of project inception	TBD	30	To be decided
	% of stakeholders capable of self-assessment as per exit tickets and pre-post training surveys	TBD	30	To be decided
	Number of action plan workshops with gender disaggregated data	TBD	30	To be decided
	Elements of action plans implemented	TBD	30	To be decided
	Number of award applicants with gender disaggregated data	TBD	30	To be decided
	Number of award assignment/review meetings held by the panel/assessment body	TBD	30	To be decided

6.2.2 Outcome 2

Outcome 2	Indicators	Baseline Value		Comments
		GATI Institutions	Target	
To develop sustainable partnerships between UK and India in bringing about gender equality in STEMM HIEs in India	**Output Level Indicators**			
	Number of partnerships established, MoUs signed	TBD	30	To be decided
	Number of projects undertaken within partnerships	TBD	30	To be decided
	Effectiveness of project outcomes	TBD	30	To be decided
	Sustainability of project outcomes	TBD	30	To be decided
	Mentorship and support received during exchange visits and peer-review (qualitative assessment)	TBD	30	To be decided
	Change observed amongst staff and students in participating institutions w.r.t i. gender equality ii. participation iii. gender representation iv. awareness v. support	TBD	30	To be decided
	Increase in establishment of platforms and networks for collaboration within the first year of inception	TBD	30	To be decided
	Benefits to students, faculty and management within the first year of inception (data segregated for gender representation, gender roles) 1. Increase in research grants, fellowships, scholarships for women 2. Increase in representation of women in managerial and leadership positions 3. Increase in initiatives for encouraging female participation in research, senior management roles	TBD	30	To be decided
	Change observed in institutions vis-a-vis advancing gender equality in STEMM - gender representation, gender roles 1. Increase in opportunities available to female students and staff 2. Increase in fellowships, grants 3. Change in attitudes towards greater female representation in management and leadership	TBD	30	To be decided
	Activity level Indicators			
	Number of studies/assessments/consultations undertaken	TBD	30	To be decided
	A systematic literature review log created within the first month of project inception.	TBD	30	To be decided

	Action plans developed within the first month of project inception	TBD	30	To be decided
	Number of peer-review of action plan sessions	TBD	30	To be decided
	No. of student exchange visits - (data segregated for gender representation, gender roles)	TBD	30	To be decided
	No. of staff exchange visits - (data segregated for gender representation, gender roles)	TBD	30	To be decided
	No. of institutions participated in exchange visits (data segregated for gender representation, gender roles)	TBD	30	To be decided
	No of institutions receiving support	TBD	30	To be decided
	No. of interactions with mentor	TBD	30	To be decided
	Onetime/continuous support	TBD	30	To be decided
	Availability of feedback mechanism	TBD	30	To be decided
	Rating for support	TBD	30	To be decided
	No of knowledge products developed	TBD	30	To be decided
	Elements of action plans implemented	TBD	30	To be decided
	Number of collaborations in research and innovation within the first three months	TBD	30	To be decided
	No. of participations from institutions (data segregated for gender representation, gender roles)	TBD	30	To be decided
	No of research grants allocated (gender segregated data)	TBD	30	To be decided
	Number of conferences, summits, symposiums held (data segregated for gender representation, gender roles)	TBD	30	To be decided

Section 7

Annexures

7. Annexure

7.1 Treatment Institutions - Participants

Institution Name	Faculty	Post	Phd	Research	Admin	HR	Finance
CSIR Indian Institute of Chemical Technology	1F	1F	1M	1M		1M	1F
CSIR Central Drug Institute	1M	1F	1M	1F	1F	1M	1M1F
DST Sree Chitra Tirunal Institute for Med S&T	1F		1F	1M	1M		1F
DST Jawaharlal Nehru Centre for Advanced Sc Research	1F	1M	1F			1F	1M
DBT Rajiv Gandhi Centre for Biotechnology		1F	1F	1M	1F	1M	
DRDO Defence Bioengineering and Electromedical Laboratory	1F	1F			1F		1M
MoC&F National Institute of Pharmaceutical Ed & Research	1F	1M	1F			1M	1F
MoE&F Wildlife Institute of India	1M		1F	1F		1M	1F
UGC Inter-University Accelerator Centre			1M	1F			1M
Indian Institute of Science Education and Research Mohali	1F	1M	1M	1F	1M1F	1M	
Indian Institution of Technology Delhi	3M2F	2M3F	3M3F	1M,1F	3M4F		3M1F
Indian Institution of Technology Bombay	3M2F	3M4F	2M3F	1M1F	4M4F	1M,2F	1M,2F
Indian Institution of Technology Roorkee	1M2F	2M2F	3M2F	2M3F	2M3F	3M2F	3M3F
Indian Institution of Technology Kanpur	1M2F	2M1F	2M2F	2M2F	2M3F	3M2F	2M2F
Indian Institution of Technology Madras	1F	1M1F	1M1F	1M	2M1F	1M1F	1M1F
National Institution of Technology Rourkela	1M1F		1M			1F	
National Institution of Technology Durgapur	1M	1F	1M1F	1F	1M	1M1F	
ICAR Indian Agricultural Research Institute	1M1F	1M	2F		2M1F		1M
ICAR National Dairy Research Institute	1F	1F	1M	1M		1M1F	1F
ICAR Indian Veterinary Research Institute	1M	1F	1F		1M	1M	1F
All Indian Institution of Medical Sciences Bhopal	1M		1F		1M		1F
Banaras Hindu University	2M2F	2M2F	2M1F	1M2F	3M2F	2M2F	1M1F
Indian Institution of Science	3M2F	2M3F	3M2F	3M3F	3M4F	4M4F	4M3F
Jamia Millia Islamia	1F	1M1F	1M1F	1M1F	1M1F	2F	1M1F
Tezpur University	1F	1F	1M		1M		
University of Delhi	1M1F	1M1F	1M2F	1F	1M2F	1M1F	2M1F
MS University of Baroda	1M1F	1M1F	1M1F	1F	1M1F		1F
University of Kashmir	1M	1M1F	1F	1F		1M	1F
Birla Institution of Technology and Science Pilani	1M2F	1M1F	1M1F	2M1F	1M2F	2M2F	2M1F
Chandigarh University	1M1F	1M1F	1M1F	1F	1M1F	1M1F	1M2F

7.2 Control Institutions – Samples Received

Institution Name	Faculty	Post	Phd	Research	Administrative	HR	Finance
DST Gujarat Biotechnology Research Centre			1F	1M			1M
DBT National Institution of Plant Genome Research	1M	1M		1F		1M	1F
DAE Harish Chandra Research Institute		1F	1M		1F		1M
ISRO Indian Institution of Remote Sensing	1M		1F	1M		1F	
CSIR Central Leather Research Institute	1M	1F	1M		1F		1M
CSIR National Botanical Research Institute		1M	1F				
CSIR Centre for Cellular and Molecular Biology							
CSIR Central Scientific Instruments Organization	1F			1M	1F		1M
CSIR NEERI	1M	1F					
Indian Institution of Science Education and Research Pune	1M	1F	1F				
Indian Institution of Technology Dhanbad	1M,1F		2M,2F		3F		
Indian Institution of Technology Ropar	1M,1F		1M,1F		1F		
Indian Institution of Technology Gandhinagar	1M,1F	1M	1F	1M			
National Institution of Technology Tiruchirappalli	1M,1F	1M,1F	1M,1F	2M,1F	2M,2F		1M
National Institution of Technology Silchar	1M,2F	1M,1F	1M	1M,1F	1M,1F	1M,2F	2M,1F
National Institution of Science Education Research	1F	1F	1M	1M	1F	1M	1M1F
ICAR Central Institution of Fisheries Education	1M		1F	1M	1M		1F
Tamil Nadu Agricultural University							
Sher-e-Kashmir University of Agricultural Sc & Tech of Jammu	1M						
King George's Medical University	1M,1F		1F				
Aligarh Muslim University	1M,1F						
Central University of Punjab	1M		1M		1F		1M
Central University of Tamil Nadu	1F						
Rajiv Gandhi University							
University of Allahabad	1F	1M	1F	1M			
Savithribai Phule Pune University			1F				
Mangalore University	1M	1M,1F	1F	1M1F	1M,1F	1F	1M,1F
SRM Institutionof Science and Technology	2M,2F		1M,2F	1M	2M,2F	3M,2F	3M,2F
NorthCap University	1F					1F	

7.3 Qualitative Interviews

INSTITUTION	POSITION
Indian Institution of Chemical Technology, Hyderabad	Head of Institution
Indian Institution of Chemical Technology, Hyderabad	Head of Department
Sree Chitra Tirunal Institution for Med S&T, Thiruvananthapuram	Head of Institution
Sree Chitra Tirunal Institution for Med S&T, Thiruvananthapuram	Head of Department
Jawaharlal Nehru Centre for Advanced Sc Research, Bengaluru	Head of Institution
Jawaharlal Nehru Centre for Advanced Sc Research, Bengaluru	Head of Department
Wildlife Institution of India, Dehradun	Head of Institution
Wildlife Institution of India, Dehradun	Head of Department
Indian Institution of Technology, Delhi	Head of Institution
Indian Institution of Technology, Delhi	Head of Department
Indian Institution of Technology, Madras	Head of Institution
Indian Institution of Technology, Madras	Head of Department
Indian Institution of Technology, Roorkee	Head of Institution
Indian Institution of Technology, Roorkee	Head of Department
ICAR National Dairy Research Institute, Karnal	Head of Institution
ICAR National Dairy Research Institute, Karnal	Head of Department
ICAR Indian Veterinary Research Institute	Head of Institution
CSIR National Botanical Research Institute	Head of Department
All Indian Institution of Medical Sciences, Bhopal	Head of Institution
All Indian Institution of Medical Sciences, Bhopal	Head of Department
Indian Institution of Science, Bengaluru	Head of Institution
Indian Institution of Science, Bengaluru	Head of Department
University of Delhi, New Delhi	Head of Institution
University of Delhi, New Delhi	Head of Department
Jamia Millia Islamia, New Delhi	Head of Institution
Jamia Millia Islamia, New Delhi	Head of Department
Banaras Hindu University, Varanasi	Head of Institution
Banaras Hindu University, Varanasi	Head of Department
Tezpur University, Tezpur	Head of Institution
Tezpur University, Tezpur	Head of Department
University of Kashmir, Srinagar	Head of Institution
University of Kashmir, Srinagar	Head of Department
Chandigarh University, Mohali	Head of Institution
Chandigarh University, Mohali	Head of Department

7.4 Qualitative Questionnaire

My name is _____ and I am working with TTC. We are conducting a research study on the advancement of gender equality in the area of STEMM in HEIs and research institutions on behalf of the Department of Science and Technology and the British Council. For this purpose, we would like to have a discussion with you for approximately two-three hours. The information gathered from you will be confidential and will not be shared with anyone other than members of our team. The data will be anonymised and nowhere will be used or shared unless a pre-consent is taken. The processing of your data will be based on the consent that you will give us. Your participation is voluntary. If you wish to withdraw from the interview at any stage, it will be respected and no questions will be asked thereafter. In case you have any further questions may contact:

Name: _____

Email: _____

Privacy notice:

British Council complies with data protection law in the UK and laws in other countries that meet internationally accepted standards. You have the right to ask for a copy of the information we hold on you, and the right to ask us to correct any inaccuracies in that information. If you have concerns about how we have used your personal information, you also have the right to complain to a privacy regulator. For detailed information, please refer to the privacy section of our website, **www.britishcouncil.org/privacy** or contact your local British Council office. We will keep your information for a period of 7 years from the time of collection.

I have received the explanation about the interaction and give my consent to participate.

☐ yes

☐ no

Do you agree to be interviewed?

☐ yes

☐ no

Name of Interviewee: _____

Date: _____

7.4.1 Questionnaire for Standing Committee on Women

The following questionnaire aims to gain insights into the overall Terms of Reference, functioning and capacity of the Standing Committee on women in science and technology at DST. The committee plays a pivotal role in the long-term vision setting, strategic decision making and is the overarching body for the project.

Objective	To gain a deeper understanding of the functioning and structure of the WSC
Stakeholders	Standing Committee members
Key Research Themes: 1. Terms of Reference	1. Are you aware of the committee's general Terms of Reference? a. Are there elements in the Terms of Reference that help increase gender inclusivity within the committee? If so, what are they?
2. Committee's Knowledge, Skills & Mindsets	2. Could you elaborate upon the composition of the WSC? a. Are women equitably represented in the committee and what are some of the measures undertaken to ensure the same? b. Does the committee have experts who have worked in the field of women empowerment or with HEIs? 1) If yes, what are some of the key knowledge pieces that these experts bring to the committee? 2) If no, how does the committee plan on addressing the knowledge gap? 3. What are some the broad skillsets required by the committee to guide the GATI project? a. How does the committee plan on building these skills for themselves? 4. What is the broad mindset that is required to help guide the GATI project? a. How do you plan on building that mindset within the committee?
2. Sexual Harassment Reduction & Management	5. What are the redressal mechanisms available to women in cases of sexual harassment at the institution? a. Are these redressal mechanisms equitable and accessible in nature? b. Are the redressal mechanisms aligned with POSH's mandate and guidelines? c. Has an internal complaints committee been set up to oversee the implementation of the POSH act? c.1) Do you believe that the committee functions in an equitable and accessible way? 6. Are you aware of the guidelines set by the Prevention of Sexual Harassment at the workplace Act 2013 (POSH) for workplace conduct? a. Have you been provided with a POSH training?

7.4.2 Questionnaire for Expert Committee

The following questionnaire aims to gain insights into the overall Terms of Reference, functioning and capacity of the Standing Committee on women in science and technology at DST. The committee plays a pivotal role in the long-term vision setting, strategic decision making and is the overarching body for the project.

Objective	To gain a deeper understanding of the functioning and capacity of the expert committee
Stakeholders	Expert Committee members
Key Research Themes: 1. Terms of Reference	1. Are you aware of the committee's Terms of Reference? a. Can you broadly outline the EC's role in the design & implementation of the GATI project? b. Are there elements in the Terms of Reference that help increase gender inclusivity? If so, what are they? 1) Additionally, are there internal measures put in place to ensure equitable access and accountability within the committee?
2. Committee Functioning	2. How frequently are the EC meetings held? a. What are some of the obstacles that you face when interacting with other EC members?
3. Sexual Harassment Reduction & Management	3. What are the redressal mechanisms available to women in cases of sexual harassment at the institution? a. Are these redressal mechanisms equitable and accessible in nature? b. Are the redressal mechanisms aligned with POSH's mandate and guidelines? c. Has an internal complaints committee been set up to oversee the implementation of the POSH act? 1) Do you believe that the committee functions in an equitable and accessible way? 4. Are you aware of the guidelines set by the Prevention of Sexual Harassment Act 2013 (POSH) for workplace conduct? a. Have you been provided with a POSH training?

4. Inter-Committee Relationships	3. Do EC members feel represented at the WSC level? a. How frequently do EC members interact with the WSC? 4. How frequently do you interact with British Council representatives? a. Has the Project Secretariat been effective in managing the flow of communication? 5. What changes would you recommend in the workflow and organizational structure of the programme?
5. Committee's Knowledge, Skills & Mindsets	6. Does the committee have the required expertise to help appoint and train the assessment body? a. What are some of the key skills that the EC requires the same? 7. What kind of support will the EC be providing to the programme team for the development of the gender equality framework? a. What are some of the key knowledge pieces, skills and mindsets that you would require for the same? 8. Could you outline the ways in which the EC will be supporting the programme team in the development of the training material? a. What are some of the key knowledge pieces, skills and mindsets that you would require for the same? 9. Could you outline some of the ways in which the EC will be providing support to Advance HE? a. What are some of the key knowledge pieces, skills and mindsets that you would require for the same? 10. Is there a need for structural changes in the EC?

7.4.3 Questionnaire for the DST

The following questionnaire aims to gain insights into the role of the DST in project governance, planning and implementation. The Department of Science and Technology is the key implementing body of the project and also plays the lead role in the setting up, designing and functioning of the various programme verticals.

Objective	To gain a deeper insight into the functioning and capacity of the DST to steer the programme and establish key verticals.
Stakeholders	DST programme design & implementation team members
Key Research Themes: 1. Institutional Capacity	1. Could you outline some of the programme verticals and structures that the DST will be/has set up as a part of the programme? a. What are some of the measures that you have/will undertake to set up the various programme verticals and/or structures? 1) What are some of the knowledge pieces, skills and mindsets required to do the same? 2. Could you outline DST's role in the implementation of the project? a. What are some of the key activities to be undertaken/elements of the implementation phase? 1) What are some of the knowledge pieces, skills and mindsets that you would require for the same? 3. What is DST's role in the development of the gender equality framework? a. Please outline the activities and steps that DST will be undertaking or participating in for the framework development process. 1) What are some of the key knowledge pieces, skills and mindsets that DST would require for the same?
2. Institution and Participant Selection	4. Could you please elaborate upon the selection process for participant institutions? a. What were some of the key metrics for selection? b. What were some of the knowledge pieces and skills required to undertake the selection process?

7.4.4 Questionnaire for members of British Council

The following questionnaire aims to gain insights into the role of British Council in project management, UK partner selection and coordination and monitoring and evaluation of the project. British Council takes the lead on all UK associated elements such as partner selection and coordination and selection of mentor institutions, provides support in the implementation of the various programme elements and is a member of all the relevant programme verticals.

Objective	To gain a deeper insight into the functioning and capacity of the British in its ability to provide support in programme implementation, lead the UK section of the project and the monitoring and evaluation subset.
Stakeholders	Programme team & Monitoring and Evaluation (MnE) team members, British Council
Key Research Themes: 1. Institutional Capacity	1. Could you discuss British Council's role in project management and leading the MnE vertical? a. What are the key activities and steps that the British Council needs to undertake for effective project management and functioning of the MnE vertical? (Discuss skills and knowledge pieces required as well) b. What are some of steps that will be/have been undertaken in cases of a skill/knowledge gap? 2. Could you discuss British Council's role in managing effective communication between the various working units of the programme? a. What are some of the key knowledge pieces, skills and mindsets required for the same? b. What are some of the steps undertaken by British Council to help streamline the project's channels of communication? 3. What is British Council's role in financial management of the programme? a. What are some of the key knowledge pieces, skills and mindsets required for effective financial management of the programme? b. How many financial experts does British Council have on board for this project?
4. UK Mentoring Institution Selection	3. What role does British Council play in the selection of UK HEIs and research institutions? a. Could you outline the selection process for UK institutions? b. What are some of the key metrics for selection of the institutions? c. Does British Council have the required support from Advance HE for identifying and selecting mentor institutions? d. What are some of the key knowledge pieces, skills and mindsets required for effective selection of UK institutions?

10.1.3 Questionnaire for UK knowledge partner

The following questionnaire aims to gain insights into the overall functioning, capacity and expertise of the UK knowledge partner which is primarily responsible for providing support and mentor the expert committee for framework and training material development. Additionally, the partner shall also act as a quality control mechanism for the various programme elements.

Objective	To gain a deeper understanding of the functioning and capacity of the UK knowledge partner
Stakeholders	UK partner representatives (Advance HE)
Key Research Themes: 1. Programme role	1. Could you discuss Advance HE's role in the design and implementation of the programme? a. What is the process and for selection of UK institutions and the metrics utilized? 1) How will Advance HE map the UK institutions to their Indian counterparts and develop the peer-to-peer mentoring framework? b. What are the various interventions put in place for the capacity building of various stakeholders? 1) What are some of the activities and steps undertaken to ensure the effectiveness of the same? c. What sort of support will Advance HE be providing through the pre-submission consultations? d. In what capacity will Advance HE be participating in the setting up and functioning of the assessment body/panel? 1) What are some of the steps and activities for the smooth functioning and capacity building of the same? 2. Could you outline your role in quality assurance during programme implementation? a. What are some of the skills and knowledge pieces required for the same? 3. How do you plan on organizing the delegation visits given the travel restrictions? a. How do you plan on circumventing the delays and issues created by the pandemic in regard to this project? b. What are some of the additional measures which will be undertaken to ensure the effectiveness and quality of online interaction?

2. Gender Equality Perception	4. Could you please elaborate upon the selection process for participant institutions? a. What were some of the key metrics for selection? b. What were some of the knowledge pieces and skills required to undertake the selection process?
3. Gender Equality Framework Perception	5. What differentiates charter and award-based measures from other policy measures for gender advancement? a. Could you discuss some of the merits of the same? b. What sort of measures are required at the institutional level to make the project successful and its impact sustainable?

7.4.6 Questionnaire for heads of institutions

The following is a comprehensive questionnaire for the Heads of Institutions (HoIs) to understand the base-line situation on gender advancement and inclusivity within their institution. It focuses on institutional policy, institutional efforts towards gender advancement and support offered to female staff that enable access to research opportunities, knowledge creation and leadership.

Objective	To gain a perspective of the various head of institutions regarding the need for gender advancement, existing structures, and prospective policies
Stakeholders	Heads of institutions (HEI and research institutions)
Key Research Themes: 1. Institutional Policy, Guidelines & Framework	1. Could you tell us about some of the institution's policies to promote gender inclusivity and participation? a. How do they supplement the government's policies and initiatives to promote women's participation in STEMM? b. What are some of the steps being undertaken to help promote gender inclusivity? c. Is the institution's recruitment policy gender inclusive? If so, how? 2. How well has the institution been able to implement these policies and guidelines? a. Have they been effective in advancing gender inclusivity and participation? 3. What are some of the challenges that you have faced in implementing these initiatives/policy measures?
2. Sexual Harassment, Bias and Discrimination Reduction & Management	4. How does your institution safeguard against gender discrimination/bias/harassment? a. Do you believe that these policies have been able to create a safe environment for women's participation in academic activities? b. How do you ensure that all the staff are informed and aware about the gender inclusivity / discrimination / sexual harassment? 5. What are the redressal mechanisms available to women in cases of sexual harassment at the institution? a. Are these redressal mechanisms equitable and accessible in nature? b. Are the redressal mechanisms aligned with POSH's mandate and guidelines? c. Has an internal complaints committee been set up to oversee the implementation of the POSH act? 1) Do you believe that the committee functions in an equitable and accessible way? 6. Are you aware of the guidelines set by the Prevention of Sexual Harassment Act 2013 (POSH) for workplace conduct? a. Have you been provided with a POSH training?

3. Gender based pay disparity	7. Does your institution ensure that men and women are equally paid or compensated for their work? If yes, how? Is this applicable to support staff as well?
4. Leaderships and administrative opportunities	8. Do you ensure that women have equal access and an enabling environment to occupy leadership positions in your institution? How?
5. Knowledge creation by women	9. How does the institution ensure an increased women's participation in knowledge creation? a. Are their contributions restricted to specific fields? If so, why?
6. Mentorship and support	10. What are the different kinds of mentorship and support programmes available to women? a. Are these opportunities publicly accessible?
7. Collaborations / Partnerships for gender advancement	11. What are some of the collaborations/partnerships undertaken by the institution towards advancing gender equality in STEMM education? a. Have these been effective in their outcomes?
8. Gender advancement perception	12. In your opinion, how important is it to undertake programmes/initiatives for gender advancement in STEMM? a. What are some of the steps that can be undertaken at the institutional level? b. Are there any programmes that the institution envisions in the future to support gender education/advancement?
9. Programme perception	13. How do you feel the GATI programme will benefit your institution? 14. What sort of opportunities do you see the programme opening up for your institution and how do you plan on leveraging them? 15. What kind of support are you expecting from your UK partner/mentor institutions and training/consultation sessions?
10. Gender based framework take up	16. Do you see the GATI programme as a long- term initiative in helping reduce gender inequality in STEMM HEIs and research institutions?

7.4.7 Questionnaire for heads of departments

The following is a comprehensive questionnaire for the Heads of Departments (HoDs) to understand the base-line situation on gender advancement and inclusivity across the institutions.It focuses on institutional policy, institutional efforts towards gender advancement and support offered to female staff that enable access to research opportunities, knowledge creation and leadership.

Objective	To gain a perspective of the various head of institutions regarding the need for gender advancement, existing structures, and prospective policies
Stakeholders	Heads of departments (HEI and research institutions)
Key Research Themes: 1. Institutional Policy, Guidelines & Framework	1. Could you tell us about some of the institution's policies to promote gender inclusivity and participation? a. How do they supplement the government's policies and initiatives to promote women's participation in STEMM? b. What are some of the steps being undertaken to help promote gender inclusivity? c. Is the institution's recruitment policy and its implementation gender inclusive? If so, how? 2. How well has the institution been able to implement these policies and guidelines? a. Have they been effective in advancing gender inclusivity and participation? 3. What are some of the challenges that you have faced in implementing these initiatives/policy measures?
2. Sexual Harassment, Bias and Discrimination Reduction & Management	4. How does your institution safeguard against gender discrimination/bias/harassment? a. Do you believe that these policies have been able to create a safe environment for women's participation in academic activities? b. How do you ensure that all the staff are informed and aware about the gender inclusivity / discrimination / sexual harassment? 5. What are the redressal mechanisms available to women in cases of sexual harassment at the institution? Are these redressal mechanisms equitable and accessible in nature? b. Are the redressal mechanisms aligned with POSH's mandate and guidelines? c. Has an internal complaints committee been set up to oversee the implementation of the POSH act? 1) Do you believe that the committee functions in an equitable and accessible way? 6. Are you aware of the guidelines set by the Prevention of Sexual Harassment Act 2013 (POSH) for workplace conduct? a) Have you been provided with a POSH training?

3. Gender based pay disparity	7. Does your institution ensure that men and women are equally paid or compensated for their work? If yes, how? Is this applicable to support staff as well?
4. Leaderships and administrative opportunities	8. Do you ensure that women have equal access and an enabling environment to occupy leadership positions in your institution? How?
5. Knowledge creation by women	9. How does the institution ensure an increased women's participation in knowledge creation? a. Are their contributions restricted to specific fields? If so, why?
6. Mentorship and support	10. What are the different kinds of mentorship and support programmes available to women? a. Are these opportunities publicly accessible?
7. Collaborations / Partnerships for gender advancement	11. What are some of the collaborations or partnerships undertaken by the institution towards advancing gender equality in STEMM education? a. Have these been effective in their outcomes?
8. Gender advancement perception	12. In your opinion, how important is it to undertake programmes/initiatives for gender advancement in STEMM? a. What are some of the steps that can be undertaken at the institutional level? b. Are there any programmes that the institution envisions in the future to support gender education/advancement?
9. Programme perception	13. How do you feel the GATI programme will benefit your institution? 14. What sort of opportunities do you see the programme opening up for your institution and how do you plan on leveraging them? 15. What kind of support are you expecting from your UK partner/mentor institutions and training/consultation sessions?
10. Gender based framework take up	16. Do you see the GATI programme as a long- term initiative in helping reduce gender inequality in STEMM HEIs and research institutions?

7.4.8 Questionnaire for teaching staff members

The following questionnaire aims to gain insights into the perspectives of HEI and research institution teaching staff members with the focus being on status quo and the possible take up of gender equality initiatives.

Objective	To gain the teaching staff's perspective on institutional practices and the need for gender equality initiatives
Stakeholders	Teaching staff
Key Research Themes: 1. Institutional Policy, Guidelines & Framework	1. Are you aware of any government run initiatives to promote gender inclusivity? a. Has your institution implemented these initiatives? If no, why? If yes what are those? b. Have there been any alterations in the implementation of these initiatives? c. How have the initiatives impacted your institution? 2. Do you believe the institution's policies and guidelines foster a gender inclusive environment? a. What are some of these policies and guidelines? b. Do you believe that these initiatives are effective? c. Do you believe the institution's recruitment policy and its implementation are gender inclusive? If so, how?
2. Code of conduct	3. Are you aware of the institution's general code of conduct? a. Do you believe that the code of conduct is accessible and gender inclusive? b. What are some of the redressal mechanisms in cases of violation?
3. Awareness initiatives undertaken	4. Are you aware of any gender equality awareness initiatives that the institution or your department has undertaken? a. Can you identify a few of these initiatives and share your opinion on them?

4. Initiatives towards sexual harassment reduction and management	5. How does your institution safeguard against gender discrimination/bias/harassment? a. Do you believe that these policies have been able to create a safe environment for women's participation in academic activities? b. How do you ensure that all the staff are informed and aware about the gender inclusivity / discrimination / sexual harassment? 6. What are the redressal mechanisms available to women in cases of sexual harassment at the institution? a) Are these redressal mechanisms equitable and accessible in nature? b) Are the redressal mechanisms aligned with POSH's mandate and guidelines? c. Has an internal complaints committee been set up to oversee the implementation of the POSH act? 1) Do you believe that the committee functions in an equitable and accessible way? 7. Are you aware of the guidelines set by the Prevention of Sexual Harassment Act 2013 (POSH) for workplace conduct? a) Have you been provided with a POSH training?
5. Research opportunities for women	8. Are you aware of any initiatives that offer women research opportunities? a. Are these opportunities equally and publicly accessible for everyone?
6. Gender based pay disparity	9. Are women paid equally when compared to men? a. Have you come across any instances where women were/are underpaid in contrast to their work at the institution?
7. Leadership and administrative opportunities	10. Do women have equal access to leadership and administrative positions at the institution?
8. Knowledge creation by women	11. Do women play an active role in the knowledge creation process of the institution? a. Is women's representation limited to specific fields? If so, why do you think that happens?
9. Mentorship and support	12. Do women have adequate mentorship opportunities and are support mechanisms available? a. What are some of these opportunities? b. Are there mentorship and support programmes specifically targeted towards women and how accessible are these programmes?

10. Collaborations / Partnerships for gender advancement	13. What types of collaborations and partnerships can be undertaken to accelerate the advancement of gender equality? a. How can such partnerships be made more effective?
11. Gender advancement perception	14. In your opinion, how important is it to undertake programmes/initiatives for gender advancement in STEMM? a. What are some of the steps that can be undertaken at the institutional level? b. Are there any programmes that the institution envisions in the future to support gender education/advancement?
12. Programme perception	15. How do you feel the GATI programme will benefit your institution? 16. What sort of opportunities do you see the programme opening up for your institution and how do you plan on leveraging them? 17. What kind of support are you expecting from your UK partner/mentor institutions and training/consultation sessions?
13. Gender based framework take up	18. Do you see the GATI programme as a long- term initiative in helping reduce gender inequality in STEMM HEIs and research institutions?

7.4.9 Questionnaire for non-teaching staff members

The following questionnaire aims to gain insights into the perspectives of HEI and research institution non-teaching staff members i.e., administrative staff and researchers with the focus being on status quo and the possible take up of gender equality initiatives.

Objective	To gain the teaching staff's perspective on institutional practices and the need for gender equality initiatives
Stakeholders	Non-teaching staff (Administrative and research staff)
Key Research Themes: 1. Institutional Policy, Guidelines & Framework	1. Are you aware of any government run initiatives to promote gender inclusivity? a. Has your institution implemented these initiatives? If no, why? If yes what are those? b. Have there been any alterations in the implementation of these initiatives? c. How have the initiatives impacted your institution? 2. Do you believe the institution's policies and guidelines foster a gender inclusive environment? a. What are some of these policies and guidelines? b. Do you believe that these initiatives are effective? c. Do you believe that your institution's recruitment policies and its implementation are gender inclusive? If so, how?
2. Code of conduct	3. Are you aware of the institution's general code of conduct? a. Do you believe that the code of conduct is accessible and gender inclusive? b. What are some of the redressal mechanisms in cases of violation?
3. Awareness initiatives undertaken	4. Are you aware of any gender equality awareness initiatives that the institution or your department has undertaken? a. Can you identify a few of these initiatives and share your opinion on them?

4. Initiatives towards sexual harassment reduction and management	5. How does your institution safeguard against gender discrimination/bias/harassment? a. Do you believe that these policies have been able to create a safe environment for women's participation in academic activities? b. How do you ensure that all the staff are informed and aware about the gender inclusivity / discrimination / sexual harassment? 6. What are the redressal mechanisms available to women in cases of sexual harassment at the institution? a. Are these redressal mechanisms equitable and accessible in nature? b. Are the redressal mechanisms aligned with POSH's mandate and guidelines? c. Has an internal complaints committee been set up to oversee the implementation of the POSH act? 1) Do you believe that the committee functions in an equitable and accessible way? 7. Are you aware of the guidelines set by the Prevention of Sexual Harassment Act 2013 (POSH) for workplace conduct? a) Have you been provided with a POSH training?
5. Research opportunities for women	8. Are you aware of any initiatives that offer women research opportunities? a. Are these opportunities equally and publicly accessible for everyone?
6. Gender based pay disparity	9. Are women paid equally when compared to men? a. Have you come across any instances where women were/are underpaid in contrast to their work at the institution?
7. Leadership and administrative opportunities	10. Do women have equal access to leadership and administrative positions at the institution?
8. Knowledge creation by women	11. Do women play an active role in the knowledge creation process of the institution? a. Is women's representation limited to specific fields? If so, why do you think that happens?

9. Mentorship and support	12. Do women have adequate mentorship opportunities and are support mechanisms available? a. What are some of these opportunities? b. Are there mentorship and support programmes specifically targeted towards women and how accessible are these programmes?
10. Collaborations / Partnerships for gender advancement	13. What types of collaborations and partnerships can be undertaken to accelerate the advancement of gender equality? a. How can such partnerships be made more effective?
11. Gender advancement perception	14. In your opinion, how important is it to undertake programmes/initiatives for gender advancement in STEMM? a. What are some of the steps that can be undertaken at the institutional level? b. Are there any programmes that the institution envisions in the future to support gender education/advancement?
12. Programme perception	15. How do you feel the GATI programme will benefit your institution? 16. What sort of opportunities do you see the programme opening up for your institution and how do you plan on leveraging them? 17. What kind of support are you expecting from your UK partner/mentor institutions and training/consultation sessions?
13. Gender based framework take up	18. Do you see the GATI programme as a long- term initiative in helping reduce gender inequality in STEMM HEIs and research institutions?

10.1.8 Quantitative Questionnaire

1. **Name of Institution**
2. **Name:**
3. **Gender**
   - 3.1. Male
   - 3.2. Female
   - 3.3. Others
4. **Age**
5. **Marital Status**
   - 5.1. Single
   - 5.2. Married
6. **Stakeholder Category**
   - 6.1. PhD Scholar
   - 6.2. Post-Doctoral Fellow/Senior Research Fellow
   - 6.3. Research Associate
   - 6.4. Faculty
   - 6.5. Administrative Staff
   - 6.6. HR
   - 6.7. Finance
7. **Position**
8. **How many ongoing research projects are you a part of?**
9. **Has your work ever been published in a recognized research journal/magazine?**
   - 9.1. Yes
   - 9.2. No
10. **Total number of research publications**
11. **Number of research publications in Peer Reviewed Journals**
12. **Number of citations (Approximate)**
13. **How many times have you been a PI/Principal Investigator?**
14. **Are you a beneficiary of the government run schemes/policies aimed at improving gender inclusivity?**
    - 14.2.Yes
    - 14.3.No
15. **List the schemes/policies/scholarships that you have received**
16. **Are you aware of the institution's general code of conduct?**
    - 16.1.Yes
    - 16.2.No
17. **The institution's general code of conduct ensures a gender inclusive environment**
    - 17.1.extremely Ineffective
    - 17.2.Ineffective
    - 17.3.Neutral
    - 17.4.Effective
    - 17.5.Extremely Effective
18. **Does your institution have any initiatives/policies/schemes to foster gender advancement?**
    - 18.1.Yes
    - 18.2.No
19. **List the initiatives/policies/schemes undertaken by your institution to ensure gender advancement**
20. **Dos your institution have safeguards against gender-based discrimination/bias/harassment?**
    - 20.1.Yes
    - 20.2.No
21. **Are the safeguards against gender-based discrimination/bias/harassment effective?**
    - 21.1.Extremely Ineffective
    - 21.2.Ineffective
    - 21.3.Neutral
    - 21.4.Effective
    - 21.5.Extremely Effective
22. **Are redressal mechanisms available to women in cases of sexual harassment?**
    - 22.1.Yes
    - 22.2.No

23. Are these redressal mechanisms accessible and equitable?

23.1.Extremely Accessible

23.2.Accessible

23.3.Neutral

23.4.Inaccessible

23.5.Extremely Inaccessible

24. Does the institution have an internal complaints committee?

24.1.Yes

24.2.No

24.3.Don't know

25. Have you ever reported a case of sexual harassment/gender-based discrimination to the internal complaints committee?

25.1.Yes

25.2.No

26. Were you satisfied by the handling of your complaint?

26.1.Extremely Satisfied

26.2.Satisfied

26.3.Neutral

26.4.Dissatisfied

26.5.Extremely Dissatisfied

27. Are you aware of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act)

27.1.Yes

27.2.No

28. Have you received your POSH training?

28.1.Yes

28.2.No

28.3.Don't Know

29. How frequently are the POSH training/awareness sessions conducted at your institution?

29.1.Once a month

29.2.Once every three months

29.3.Once every six months

29.4.Once a year

30. Are you satisfied by the POSH training received?

30.1.Extremely Satisfied

30.2.Satisfied

30.3.Neutral

30.4.Dissatisfied

30.5.Extremely Dissatisfied

31. Are women paid equally when compared to men at your institution?

31.1.Highly agree

31.2.Agree

31.3.Neutral

31.4.Disagree

31.5.Highly Disagree

32. Have you been appraised at your current institution?

32.1.Yes

32.2.No

33. How frequently do appraisals take place at your current institution?

33.1.Once every six months

33.2.Once a year

33.3.Once every two years

33.4.Don't know

34. Are women given an equivalent increase in pay/privileges when appraised when compared to men at your institution?

34.1.Highly agree

34.2.Agree

34.3.Neutral

34.4.Disagree

34.5.Highly Disagree

35. Which type of work would you commonly associate women with at your institution?

35.1.Teaching

35.2.Research

35.3.Administrative Tasks and Support Staff (HR)

35.4.Others Other (Specify)

36. Do women have equal access to leadership and administrative positions at your institution?

36.1.Highly agree

36.2.Agree

36.3.Neutral

36.4.Disagree

36.5.Highly Disagree

37. Do women have adequate mentorship opportunities and support mechanisms available to them?

37.1.Highly agree

37.2.Agree

37.3.Neutral

37.4.Disagree

37.5.Highly Disagree

38. Are women adequately represented in STEMM oriented fields?

38.1.Highly agree

38.2.Agree

38.3.Neutral

38.4.Disagree

38.5.Highly Disagree

39. Is it important to undertake gender advancement initiatives for STEMM oriented fields?

39.1.Highly agree

39.2.Agree

39.3.Neutral

39.4.Disagree

39.5.Highly Disagree

40. Do you feel that your institution is taking adequate steps to ensure gender advancement in STEMM oriented fields?

40.1.Highly agree

40.2.Agree

40.3.Neutral

40.4.Disagree

40.5.Highly Disagree

41. Are you aware of the Gender Advancement for Transforming Institutions (GATI) programme?

41.1.Yes

41.2.No

41.3.Don't know

42. Do you see the programme as a relevant measure to help reduce gender inequality in STEMM higher education and research institutions?

42.1.Highly agree

42.2.Agree

42.3.Neutral

42.4.Disagree

42.5.Highly Disagree

43. Are you aware of the institution's general code of conduct?

44. Does your institution have safeguards against gender-based discrimination/bias/harassment? 45, Are redressal mechanisms available to women in cases of sexual harassment?

46. Does the institution have an internal complaints committee?

47. Have you ever reported a case of sexual harassment/gender-based discrimination to the internal complaints committee?

48. Does the institution have an internal complaints committee?

49. Have you received your POSH training?

50. Are you aware of the Gender Advancement for Transforming Institutions (GATI) programme?