

# Gender Barriers in STEM and Professional Spheres: A Systematic Analysis of Challenges Faced by Women

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**Abstract:** India gives the world the maximum number of scientists and engineers as STEM is booming in the past decade. But only 17 women have won Nobel Prize since Marie Curie in the field of Science. 19.23% is the rate of female labour force participation and 70% of them are facing labour discrimination. Globally only 18% of girls are pursuing Science and technological education. It would take 202 more years to close the pay gap which is a significant issue in the workplace along with the lack of role models. This study focuses on aspects that are avoiding or discouraging women's participation in Science and Technology such as traditionalism or stereotyped gender roles, leaning on patriarchy for awarding grants and fellowships, pressure to abide by societal norms, marriage and family responsibilities that comes with, childbirth, caretaking so on. This study explores the challenges hindering women's participation in Science, Technology, and the workplace. It delves into issues such as gender stereotypes, patriarchal biases, pay gap, and other societal norms. The research is based on secondary data from various sources, concluding that increased participation of women in these fields can lead to innovative advancements.

**Keywords:** Empowerment, discrimination, Stereotype, patriarchy, Gender Gap, Science and Technology, Workplace Challenges, Women in STEM

## 1. Review of Literature

Following is the review of articles that have been done for the study.

Reena Patel (2005) observed the role of a female child and women in Indian society is primarily within the confines of the home. Her status is directly linked to her role as a wife and mother. Regardless of whether a woman works outside the home, she is held accountable for domestic labour and the raising of children.

Sampurnaa Dutta (2017) discussed how women in India continue to feel unsafe while using public transport. As darkness descends, the number of women on the street reduces so they prefer to work in easier 9 to 5 jobs and reach home from work before its dawn.

## 2. Background

Earlier, women were not encouraged to step out of their homes to work anywhere and were only meant to take care of their families due to the Patriarchy of the society which controlled their movement, education, reproduction so on. In this male-dominated society, only a few women are standing out there to check this hazardous environment called the place of women in fields such as Science, Technology and other workplaces.

This behaviour is transforming for the past 30 years as more women are trying to break the rules of society for their wellness. However, it's not been any easier due to constant judging of leaving the family alone to work. Passengers on a flight were frightened to know that the captain is a female. Scientists and businesswomen were not believed to be who they are due to their dress as well. They are said to be not enough for promotions and most of the highest hierarchical

position are well crowned by men despite a woman having top scores, knowledge, and experience, which makes them look and think less of themselves.

## 3. Objectives

The following are the objectives of the paper;

- > To understand the challenges that occurs to women in science, technology and other similar workplaces.
- > Making detailed rational thinking on the same challenges.

## 4. Methods

This is a descriptive paper, analysing all the challenges of women in Science, technology and the workplace by analysing all the secondary data sources. After the problem-stating part, efforts were made towards listing how those challenges could be overcome.

5. Challenges of women in science, technology and the workplace.

### Traditional gender roles:

Men work outside, women at home: We all know that traditional gender roles dictate that a man should be the one working while the woman stays home. The mindset is slowly disappearing as more and more women choose to prioritize their careers.

When it comes to traditional gender roles affecting professional lives, it was found that women tend to get jobs easier in the nursing, hospitality, human resource management, medicine, chemistry, biology, theoretical physicist, and teaching fields because of their perceived sensitivity - a common classifier of feminine traits and not

careers in the field of I. T. or technology, engineering, computer science, scientists, fire-fighter, experimental physicist, military personnel, District collector jobs and so on. This is also because of the opinion that women are meant for only 9 to 5 jobs, are weak to be doing certain kinds of jobs, and have to be around a safe working environment as women are meant to be protected and other such notions. This is just one tiny example of how traditional gender roles are based on women's stereotypes.

### **Patriarchy:**

"Indian society is deeply patriarchal, culturally and economically, and is severely affecting the career progress of working women", Supreme Court justice S Ravindra Bhat (HT). Women are mostly given ornamental positions for the sake of representation. Supreme Court justice also says that many women feel the need to step off the career track entirely not because of explicit discrimination or lack of ambition or competence, or ability, but because of numerous smaller factors and daily hassles. It is said that women are constantly asked to make coffees whose cause is due to a man witnessing since his childhood all the household chores being solely done by his mother and also witnessing mothers asking their daughters to learn cooking, washing and other domestic work. They are also twice as likely to be asked about the well-being of their children and to do admin-based or boring tasks and decisions are made without their notice many times. Also, they are the victims of sexist jokes in the patriarchal society.

### **Gender Paygap:**

There is no place in this world where women are paid as equally as men. Men were paid 48% more than women in 1993-94. The gap has however declined to 28% in 2018-19 as in the survey by National Sample Survey Office (NSSO). Reasons behind this could be more men in higher positions, women looking for jobs which are more flexible and convenient rather than never-ending working hours as scientists or DC would have, and also because of the stereotype that women need not earn as sufficiently as a man. The patriarchal thinking could be changed so that a woman could earn or not by her choice and the opinion put upon men to earn more than their female counterparts are also causing more gaps.

### **Caregiving:**

Women are the primary and informal care providers. Often, they are said to be wearing many caps - full-time work, management of the home, spouse, parents, in-laws, and kids simultaneously. This should be applied to all equally but working women are most likely to presume these responsibilities at home on themselves than working men. These responsibilities are never ending and could bleed a woman's life as they try to multitask. However, solutions are individualistic and women could perhaps find a way for them to give care for others and themselves

### **Sexual Harassment:**

It is any unwanted sexual behaviour that makes anybody feel upset, scared, or humiliated, or is meant to make them feel that way. Physical contact without consent, demanding sexual favours, showing porn, flashes which could decrease quality performance, taking many leaves, fear of becoming subject to gossiping, defamation, women being objectified, no promotion, work and long-term career consequences. A woman is always in fear of a male colleague asking questions about their sex life and inappropriate comments on it, stalking, repeatedly assigning a researcher with a menial or unwanted task by her guide that is not a part of her regular duties and fear of being fired if the victims report a complaint.

### **Discriminating Pregnant:**

Often pregnant women are not given any new projects to work on and are discouraged to participate much in existing ones. They are not promoted or hired and fired during pregnancy and even after delivering the baby, an employer also doesn't hold their jobs during maternity leave and asks them to perform menial jobs after resuming. This is because of the lack of resources to support temporary absenteeism or lack of funds to provide OT pay to other employees for covering up and because of the belief that the employee might ask for many accommodations even after resuming.

### **Menstruation**

When a woman shows her emotions like anger or irritation, they are teased by asking "don't you whine. Are you on periods?" This is another reason for women fearing to work apart from the lack of hygienic washrooms and poor sanitation. Women face killer pain while on periods and taking leaves while menstruating is looked at as an excuse to not work. This might be because of the extra leaves provided only to women for periods and men being whiny about it. Though women might be less productive on menstruating days, than the other days, it is essential to treat menstruation as normal and be open to any challenges that it poses.

## **5.Conclusion**

Women are now found in professions and industries which were previously regarded as men's areas of work. Despite progress towards women's empowerment, there is still a long way to go. Women have to be aware of their abilities and potential. When the whole universe is thinking and talking of equal treatment, why does it has to stop when it comes to women? Why do only women need to have a perfect work-life balance? Restrict themselves from fields such as Applied physics, mechanical and civil engineering? Why not get properly sanitised washrooms? Experience motherhood without being worried about the challenges posed at work, getting mentorship and employment without sexual favours, why do women have to work for less money? Why make it hard for a woman employer to work so hard when the whole nation is getting benefitted? Despite progress towards women's empowerment, significant challenges remain in the fields of Science, Technology, and

the workplace. Addressing these challenges is crucial for fostering innovation and ensuring a bright future. The Strong participation of women in these fields can lead to innovative advancements for the upcoming generation.

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