



# Gender Discrimination at Workplace: Do Artificial Intelligence (AI) and Machine Learning (ML) Have Opinions About It

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**Abstract.** The gender discrimination problem started from day one when they entered professional offices, factories, businesses, institutions, and other organizations. Despite strict regulations and laws, gender-based discrimination can be seen in almost all working places. However, its types and gravity may change with the place, sectors, or development level of a country. The complaints and protests of affected women roar severely about humanity's failure to solve this alarming problem consistently. This issue may remain invisible or limelight through discriminated actions during job recruitment, assigning duties, salary packages, benefits, performance assessments, promotions, communications, behavior, trusts, and responsibilities. The women promoted to managerial level always remained lesser in number. Even the fellow women at senior positions discriminate their gender. This reveals the peak of the problem. Therefore, women's discrimination is a prioritized issue that concerted efforts of all stakeholders must tackle. Also, the link between Artificial Intelligence, Machine Learning, and Gender discrimination has been discussed in this paper. Finally, a set of gender discrimination mitigating strategies has been suggested in this article.

**Keywords:** Gender discrimination · Unequal of hiring · Unequal of promotion · Discrimination · Sexual harassment · Artificial intelligence · AI · Machine learning · ML

## 1 Introduction

The number of female workers is increasing steadily in different organizations and businesses due to chagrining scenarios on the globe. However, despite all the efforts, governments, and complaints/protests by grieved women, discrimination could not be wiped out from working places of various sectors. The quantum of deviations from rules and regulations is mostly higher in developing countries. Women discrimination could appear as unequal employment opportunities, discrepancies in wages and salaries, communication and behavior, roles allotted at the workplace, promotions, stereotypes, and the variable importance given to men over women in different companies [1–3]. Even in developed countries like the USA, the salaries of female workers are lesser than male workers. The number of females promoted to the managerial level has always been significantly on the lower side. The managers mostly think that female worker cannot perform difficult tasks. The trust in women workers is not of the same level as the fellow male workers [4]. That is why, in routine, the managers allot more important assignments to males. Though the cases of sexual harassment at workplaces have decreased in advanced countries, these are still very high in developing countries of the third world.

Discrimination on a gender basis should not be acceptable by the advanced, refined, and developed social societies and today's organizations. It means that a lot of scopes are still there for establishing equality in respect of gender. Women workers should be given the same importance, trust, responsibility, remunerations, and promotions as enjoyed by fellow male workers. Efforts, strict regulations, and change of mind of management and executives are required to establish equality in all organizations and businesses, transparently visible to everyone. Training, education, and on-job courses may be required for managers and other stakeholders to manage and mitigate this big issue of the present civilized world. This important problem has been analyzed, and various aspects have been highlighted in the present review article. Both sides of the problem, women discrimination and mitigating strategies to establish gender equality, are presented for pondering and pursuing stakeholders having direct or indirect stakes.

## 2 Literature Review

According to [5], gender equality includes access to basic education, health and life expectancy, equality of economic opportunity, and political empowerment. The subject of gender discrimination at workplace was opened in the olden times when the women started joining professional jobs outside their homes. Despite different types of efforts to cope with the issues, the problem kept on intensifying. At present, these problems are significant. Their scope is widening from local to national and then international, in response to the extension of multinational companies in various countries and the globalization of the world into one village through digital innovations and technologies. None of the sectors is exempted from such discriminations at the workplace. The degree and causes of gender inequality vary throughout the world. [5] reported existence of gender inequality globally, despite different measures have consistently been taken at national and international levels. They mentioned that only four out of over 200 nations have achieved gender equality including Costa Rica, Cuba, Sweden, and Norway. Therefore, this problem merit very high consideration and must be dealt as a global priority.

Some of the salient women workplace discrimination issues have been identified in the introduction but need further discussion in a little bit more detail in the light of important research studies, reports and published articles from the literature and available online information.

## **2.1 Women Discrimination During Recruitment for Jobs, Salary Packages, and Promotions**

[6] said, “Inequality at work does not just happen; it occurs through acts and the failures to act by people who run and work for organizations” (p. 707). It means that inequality and discrimination occur due to managers and executives’ actions and fellow team members. Because of such attitudes, corporate responsibility and ethics have been regarded as prominent and hot issues of present businesses by [7]. [8] have reported that gender inequalities in the workplace persist, although numerous policies in advanced industrial countries have been devised to cope with gender inequality in employment; recruitment, salary, and promotion. These all aimed at resolving gender discrimination. They investigated a model involving 51632 respondents from 18 countries to prove that people use motherhood myths to hinder women’s economic participation saying that women’s work threatens children and family life. Their research supported the existence of such myths in the background of all gender issues at the workplace. It emphasized the need to be vigilant about any attempts to return to traditional gender roles in advanced industrial countries. Workplace gender equality can only be achieved when all people are provided equal chances of the same rewards, resources, and opportunities without considering gender. Gender discrimination is widespread in various companies and workplaces in respect of hiring/firing/promotions, payments as salaries, job classification, and associated benefits [4, 9].

The gender discrimination starts as soon as a woman presents her candidacy for a job. Many managers and recruiting companies have an invisible preference for males to offer a job. Even if a woman is successful to get a job based upon her knowledge, skills, and experience, she is mostly offered lower salary package, other remuneration, and related facilities compared with fellow men for the same position. The hard-surprising fact is that even if the manager or an executive is a woman, yet she practices women discrimination in offering salary and providing other facilities to women workers. Subsequently, equal chances are not provided to women in most cases for in-service training and promotions. [10] reported based their research that gender inequality is visible in organizational structures and HR processes and practices. The HR practices like policies, decision-making, and enactment affect the hiring, training, pay, and promotion of women. The discrimination is built-in leadership, structure, strategy, culture, organizational climate, and HR policies. Because of this phenomenon, different organizations could not wipe out women’s discrimination from their workplaces. [11] has reported that the gender gap in the Australian workforce is still prevalent; women continue to earn less than men, are less likely to advance their careers as far as men, and accumulate less retirement or superannuation savings.

USA is mostly considered as an example for human rights, equalities, and guarding against discrimination. [12] reported a USA survey on hiring, salaries, evaluation, and promotions in which 1613 women participated. The gender inequality was complained

about by 44% of them, 27% were having complaints of discriminated hiring process while 62% were grumbling of unequal salary. Still, 43% were not satisfied with the evaluation of performance, while 80% moaned the discrimination promotion process. The membership of PMI (Project Management Institute) was over 500,000 in 2009, the gender breakdown of which was 70% male and 30% female (PMI, 2009). [13] reported that out of 561 managers of different enterprises, only 168 (30%) were females while 393 (70%) were males. [14] reported research from Institute of Fiscal Studies and pointed out an average difference of 18% in respect of women's salary in the UK, which could widen markedly after having children by working women. This research highlighted the challenge faced by Britain's working women's stubbornly wide gender pay gap. The gap balloons after women have children indicating that mothers are missing out on pay raises and promotions. Male managers are 40% more likely than female managers to be promoted. These are just a few evidences from the advanced world. The prevailing situation in advancing countries is expected to be worse.

## **2.2 Discrimination in Behavior, Communication and Assigning Duties to Women**

There are numerous complaints that a differential behavior is practiced by managers at the workplace because men and women are not treated equally. The men are considered more dutiful, responsible, and hardworking compared to fellow women. Women are considered too emotional. The co-workers take women as the primary source of gossip in the workplace. It is a general notion that women are not committed to their work because of family obligations, and they cannot work well with other women because they are catty. Aggressive women are considered as troublesome [15]. The managers hesitate to assign difficult work to women or sending them to odd places for work. A study of women in Delhi police (India) by [16] indicated that gender behavior differences prevail clearly in male-dominated professions like the police. This research found no evidence of performance difference of policewomen compared to their male counterparts in departmental activities. The negative attitudes of police officers towards women are a significant obstacle in the way of policewomen advancement. Quantitative data and in-depth interviews suggested that gender-based work assignments are predominant because they are assigned peripheral roles and have not been integrated into the mainstream of duties. Women may not get credit for the good work they have done. [17] Human behavior is determined by biological and a cultural phenomena, particularly related to sexes/genders.

Even the business communications reflect the discrimination. Language plays a critical role during communication. Some language expressions can cause offense or discrimination, while others do not convey the original meaning and may be open to misinterpretation. Therefore, the selection of words is highly important because their interpretation may create discrimination, demeaning or biased, regardless of how they were intended. Discrimination can be smelled from the words 'Salesman/saleswoman' whereas good replacement of words may be salesperson and sales representative. For example, [18] have regarded the sentence 'The Summit attendees and their wives are invited' as gender-biased and suggested to write it as 'Summit attendees and their partners are invited'. Similarly, 'Research scientists often neglect their wives and children' is gender discriminatory while 'Research scientists often neglect their families' is good.

[18] also have emphasized that a specific language should be used for official messages, press releases, social media content, publications, and statements from senior management to avoid misinterpretation of words proving discriminatory. It should not be clear from language and words that addressees are male or female. The words 'He' or 'She' be avoided.

Cultural dimensions reflect specific aspects of the two genders [17, 19–21]. The ways and styles of communication are mostly different in actual practice, making disagreements and misunderstandings. Women are expected to be more modest and shier. An aggressive woman can still be a monster. However, an aggressive man is considered powerful and liked by management. More trust is extended to men, and their opinion carries higher weight in decision making during various meetings on certain issues than women of equal status and job position. Even the performance evaluation is sometimes biased, and women are mostly given lesser grades [4, 22]. [23] reported that women are discriminated against at workplaces not only by men but also by women. The educated women appointed at higher positions behave with their fellow gender like men even in the USA. According to her, women are convicted by their looks, dress, prettiness, and even sexiness. This behavior is not practiced with men working at the same place.

A recent report has been published based on a study by [24] involving 462 USA companies (employing almost 20 million people) and interviewing more than 64,000 employees in the direct survey on their workplace experiences. This study indicated that despite companies' commitment to gender diversity, they have not translated into meaningful progress because women continue to be vastly under-represented at various organizations' levels. It is even worse for women of color. The corporate careers still have two flavors: his and hers. Only about one in five senior leaders is a woman, and one in twenty-five is a woman of color in the USA. Data showed that men win more promotions, more challenging assignments, and more access to top leaders than women. Less than half of interviewed women felt that promotions are on fairground and merit. In contrast, a significant share of women said that gender has been a factor in promotions and believed that their gender would make it harder for them to advance in the future.

### **2.3 Discrimination Due to Age and Conditions of Women**

Women are discriminated against based on their gender and current conditions like age, prettiness, pregnancy, and marital status. Young, unmarried, and beautiful women are preferred over older, married, and less beautiful women during hiring, meetings, performance evaluation, and promotions. [25] have reported that the track record of excellent performance, winning individual and team awards, dedication to work, and the long-time labor put in to get a promotion are not considered when a woman becomes old. She is not liked by co-workers and the managers when she reaches her fifties. She is disrespected, labeled old-fashioned, and maybe marginalized or ultimately forced out of her job to make room for younger employees. There are age-related assumptions creating the perception that older workers, especially women, lack the stamina, aren't technically savvy, and slow down the business actions and activities. In contrast, when men age up, they are considered a fine wine, which becomes more valuable with time passing. Even the companies may be no longer interested to invest in the older employee.

[26] have quoted three examples of women being pushed out of work based on more age. Susan has spent decades working in the insurance business and is recognized for outstanding performance, but her fortunes turned once she asked to report to a woman 20 years her junior. The new manager assigned her more cases and set higher standards than the younger colleagues. Susan's formal performance evaluation is characterized as failing in her duties. Although Susan was supposed to have 90 days to improve, the manager fired her after a few days in the age of 60s. Mary, a 72-year-old sociology professor having several teaching awards, an illustrious record, and including three stints as department chair, was denied continuing as a full-time faculty by a younger dean who favored her younger colleagues. Mary filed a petition for discrimination due to her age. Similarly, Jane, at the age of 64, was denied a job as a bartender she was working for more than a decade because the bar was sold, and the new owners hired significantly younger women.

A report by [23] revealed that women are more likely to be judged by their looks and how they dress up than are their male counterparts. Women are not only discriminated against for being pretty, but they are also discriminated against for being not pretty or not being sexy enough. Some advise women of the managers to keep their pregnancy news out of office. They take time off for maternity leave. This is a general consideration that once women have a child, they do not work as many hours as their male counterparts because of sick children, activities, and other events that occur because of motherhood. In addition, they also tend to travel less frequently once they have a child [15]. [27] reported a study of Equalities and Human Rights Commission (EHRC) UK that most working mothers in the UK were discriminated due to pregnancy and maternity. They experienced lesser or denied opportunities for promotion and training or even been threatened of dismissal from the job, as found in a survey of 3,000 mothers. Three-quarters of employed women had been discriminated due to having children, but only one in four raised it with their employer. Just one percent of the affected women took their case to a tribunal because it costs very high (£1,200). Ten percent of women complaint of trouble in getting time off work to attend antenatal appointments, while around four percent said they left a job over health and safety issues. This research also questioned around 3,000 employers and noticed that just half of the managers dealing with pregnancy issues or maternity of employed women in their organization were not provided any support or training. [28] has quoted an example in which a woman was fired from his job only due to the news she shared with her manager about her pregnancy and requesting a leave. She was informed that the company could not arrange her substitute during the leave.

[29] have narrated a general notion that good looks can get you a good job. In her view, this may not always be true because good looks are preferred in most fields and may prove to act as a deterrent in some other fields. For example, jobs of a waitress, air hostess, model, and sales attract beautiful women, whereas teaching, day-care, engineering, and IT jobs have no consideration for beautiful women. However, there is a lot of discrimination based on beauty and looks in the workplace, especially male-dominated organizations. [30] has reproduced important points of Professor Comila Shahani-Denning efforts of reviewing numerous studies and finding that beauty is goodness in the area of employment decision making because attractiveness influences interviewers judgments

of job applicants. She also reported referring an article published in Time that women with above-average looks can make 8% more while below-average looking women had a 4% penalization. In another phone survey, the researchers found that almost three-quarters of working women believe that appearance and youthful looks are important in hiring, and promotion. Therefore, almost one in five women either already had a cosmetic procedure or would consider doing so because of these facts.

## 2.4 Sexual Harassment at the Workplace

The Equal Employment Opportunity Commission of USA defines harassment as ‘unwelcome verbal or physical behavior based on race, color, religion, sex (including pregnancy), gender, nationality, age (40 or older), physical or mental disability or genetic information’. Harassing conduct may include offensive and non-ethical jokes, slurs, calling with different names, physical assaults or threats, intimidation, ridicule, insults, offensive pictures, and more. Workplace harassment is not limited to sexual harassment only and does not include harassment between two people of the same gender. The harasser can be the boss, a supervisor in another department, a co-worker or even a non-employee. Interestingly, the victim does not necessarily have to be harassed; it can be anyone affected by the harassing behavior [31].

To add more, harassment can be sexual or non-sexual. The harassment related to sexual notions or actions is called sexual harassment, while other actions or indications by any means related to religion, race, age, gender, or skin color of an employee can also be considered harassment [32]. This author has identified examples of both types of harassment. Sharing inappropriate sexual images or videos (such as pornography) with co-workers, sending suggestive letters, notes, or e-mails, displaying inappropriate sexual images or posters in the workplace, telling lewd jokes, making inappropriate sexual gestures, staring in a sexually suggestive or offensive manner, or whistling, making sexual comments about appearance, clothing, or body parts, inappropriate touching, including pinching, patting, rubbing, or purposefully brushing up against another person, asking sexual questions, such as inquiries about someone’s sexual history or their sexual orientation, and making offensive comments about someone’s sexual orientation or gender identity are included in sexual harassment. Making negative comments about an employee’s personal religious beliefs, using racist slang, phrases, or nicknames, making remarks about an individual’s skin color or other ethnic traits, displaying racist drawings, or posters that might be offensive to a particular group, making offensive gestures or references to an individual’s mental or physical disability, sharing inappropriate images, videos, e-mails, letters, or notes, offensively talking about negative racial, ethnic, or religious stereotypes, making derogatory age-related comments, and wearing clothing that could be offensive to a particular ethnic group are the examples of non-sexual harassment.

## 3 Research Methodology

This article is not based on any specific research study. Still, it is a review paper in which other authors, reports, surveys, and various studies have been utilized and quoted,

including relevant information from the internet. Some good high-quality, relevant work has been searched/ found from the available literature. However, all the past studies on the subject may not have included only because of unavailability/access. The study's title was justified by analyzing the prevailing situation, identifying the problem, and the need for rectification measures to be highlighted. The management strategies have also been recommended.

## 4 Results and Discussion

### 4.1 The Nature, Types, and Severity of Women Discrimination at the Workplace

Women's discrimination started on the same day when women entered into companies and began the jobs due to cultural and sometimes religious considerations. The study of [17] confirmed that biological and a cultural phenomenon determines human behavior, especially concerning sexes/genders. The olden cultural-dominated societies did not favor women outside the homes and demanded to remain as house-workers. The study of [8] revealed that people used motherhood myths to oppose women's economic participation, putting forth the logic that outside working of women could threaten home matters and smooth life of children and family. However, these notions and sayings continue and persist in the so-called modern societies and cultures because the investigations of [5] indicated gender inequality globally. According to them, various measures taken at national and international levels could not wipe out the women discrimination issue in totality. They have reported that only four countries (Costa Rica, Cuba, Sweden, and Norway), out of over 200 nations, have achieved gender equality fully. The persistence of gender inequalities and discrimination in industrial countries has also been reported by [8], despite numerous policies and legislation framed to cope with these issues. Therefore, [7] have regarded the women's discrimination issues of present businesses as highly prominent and hot. These issues can be observed confidentially and discussed individually but may not be openly visible under certain situations.

Previous research studies narrated that gender inequality is initiated right from recruitment and employment. The male genders are given a potential preference on the grounds in mind of recruiters that the men are more dutiful, responsible, and hardworking than women. In contrast, female genders are considered emotional, less pain-taking, and committed to business work because of family obligations. They cannot work well with other women because they are catty [15, 16, 23]. Therefore, discrimination is practiced during the whole hiring process, although it is never revealed openly. Supposing that a woman gets a job based on her qualification and experience, she is offered lesser salary and fringe benefits compared with fellow men at a similar position. [4, 9] have observed widespread gender discrimination in various companies and workplaces in terms of hiring/ firing/ promotions, payments as salaries, job classification, and side benefits. [11] in Australia, [12] in the USA, and [14] in the UK have found the prevalent gender gap in their respective countries where men continue to still earn more than women. These differences carry on to later stages of women's jobs because they are discriminated during performance evaluation, awards and rewards, professional training, and subsequent promotions. Very clearly, the ratio of male and female managers and executives is in favor of male gender (70: 30) and the number of higher positions occupied by men is



far away from equality [13]. If women are successful to sustain their jobs till superannuation, they are given less benefits at the time of retirement because of less salaries when calculated towards total. Thus, the discrimination is spread over the entire period of working duration of women due to appearance, conditions and increasing age.

Discrimination of women is not limited only on gender basis but remain increasing or decreasing with respect to look, dressing up, beauty, marital status, age, prettiness, and pregnancy of female workers. Even being not pretty can be basis of discrimination. The pregnant and women having children are not liked by anyone on the workplace. It is a common belief that due to these conditions, women become slow and sluggish, avoid traveling, lose interest in the company work, and their stamina of work is significantly shortened. Even the discriminatory words like old fashioned, fat, lazy etc. are used for them. Various studies indicate that young, unmarried and beautiful women get more favor not only during recruitment but also later at the times of evaluation of performance, and promotions [4, 15, 23, 27–29]. A report from [25] indicate that track record of excellent performance, winning individual and team awards and dedication to work at the early age by females may not help them in the older age and considering for promotion. Thus, the companies are not interested to invest in the older women employee, rather many times they are pushed out of work [26] based on minute excuses.

In addition to discrimination, gender-based harassment is also observable at different workplaces. The harassment could be verbal or in the form of physical behavior, the basis of which could be race, color, religion, sex, nationality, age, disability, or genetic background. [31] explained that harassing could shape as non-ethical jokes, slurs, bad or hater names, physical assaults or threats, intimidation, ridicule, insults, offensive pictures, and more. The harassment can be from the boss or a supervisor or co-worker. The harassment can be sexual (related to sexual notions or actions) or non-sexual related to race, age, gender, or skin- color of an employee [31]. All types of harassment are prohibited by company laws as well as national and international regulations. Whenever and where ever these are occurring, these must be reported immediately to responsible personnel and authorities. The discouragement of such actions extends, and the number of such events is reduced greatly. Some more mitigating strategies are discussed in the next Sect. (4.2).

## **4.2 Strategies for Managing Women Discrimination at the Workplace**

The solution to women's discrimination issues should be elucidated and strengthened through adequate legal framework and socio-political context. The mentality and perception changes are direly needed to attain this objective [17]. The manipulation of cultural features of a society and organization is highly important in this regard. Gender-based discrimination can be handled efficiently by managers who have been specially trained in this field. The state laws and regulations should be honored and obeyed in all respects and at all costs by the companies. The NGOs and Social Foundations should perform a special role in this regard and uphold the matter at appropriate floors. Equal opportunities' hiring practices and fair promotions should be ensured by all concerned. Special training courses may be arranged for this purpose. The awareness of the problem should be extended. Several state and international laws prohibit gender discrimination. Many remedies are provided in these laws for protecting women rights at workplace.

The discriminative behavior of management can be challenged in courts. The Equal Pay Acts have also been issued in many countries, promoting equality between men and women who perform similar job duties in the same workplace. Companies may formulate diversity and inclusion policies to remedying gender discrimination between the sexes [33–43]. [44] suggested the following strategies to manage women discrimination issues at workplace:

- Reassessing and explaining job requirements for different positions.
- Expanding the applicant pool without consideration of gender.
- Reconsidering biases at the workplace.
- Revising the interview process and including females in the interview boards.
- Making sure all employees have the same access to opportunities.
- Equalizing or minimizing the gender pay gap.
- Addressing the work/life balance and making it appropriate.
- Making sure everyone has access to mentors and trainings.
- Evaluation of performance should be made fair for all.
- Employers should protect harassment of all kinds.
- Coaching all employees on gender issues should be a regular practice.
- Gender imbalance in board seats should be addressed.

The HR (Human Resource) should perform a basic role in removing women's discrimination in each company/corporate. Childcare facilities should be provided at workplaces to facilitate mothers working in different organizations. The harassment should be tackled through framing and implementing policies by the companies. Managers and HR department should play an active role in this regard. The suffering women should file complaints under the law if not addressed by the company management and executives [20, 45–56].

## **5 Artificial Intelligence (AI), Machine Learning (ML), and Gender Discrimination (GD)**

As the world keeps evolving, the increased presence of Artificial Intelligence (AI) in our everyday lives is central to transforming our society and economy [57]. More jobs are becoming automated and replaced by AI [58]. However, the replacement of jobs is dependent on the type of job and tasks performed [59]. Low-skill jobs like sales, office, and administrative support are more likely to be shifted to AI, as they are simple monotonous tasks that can be programmed and applied. Employees doing such jobs may either get promoted if they are skilled enough, or they may be shifted to perform other tasks that could be done from home. This type of replacement and substitution may occur in any organization. One of them is the educational sector. For example, AI can function as a Decision Support System by suggesting innovative strategies to enhance the effectiveness of e-learning [60]. In addition, AI could play an Intelligent Tutoring System that will provide personalized experiences to the learners [61].

As the number of employment decrease gradually due to their replacement by AI, are there any other impacts on the employment environment? One of the issues that

come with employment is gender equality or discrimination [62]. Gender equality is a fundamental right and value of the whole world; however, challenges to the basis of sex remain a reality today [63]. While posing challenges for gender equality and non-discrimination, AI creates opportunities. Due to the convergence of many digital technologies and the influence of those technologies in our professional and private lives, it is high time to reflect specifically on the interplay between AI and gender equality [64].

The emergence of AI has led to Machine Learning's development to teach the machine to learn by itself. The "teaching" process happens by providing data from previous operations that performed the same tasks or by providing data through the internet [65]. The machine will learn a task based on how it is taught; if the machine was intentionally or unintentionally programmed to, for example, prefer a certain race or gender for employment, the machine will do so. The machine will inherit a bias based on how it was taught [66]. Kate Crawford aptly captured the ultimate cause of the prevalence of gender bias in artificial intelligence; "Like all technologies before it, artificial intelligence will reflect the values of its creators" [67]. Accordingly, a question might need to be answered: how can leaders ensure that AI does not lead to gender bias in their organizations?

There have been attempts to address gender bias in machine learning by reviewing learned gender-based associations and modifying the algorithms to exclude stereotypes [68]. The majority of AI developers are males, meaning the machine learning process will be operating like a dominant male figure. The lack of gender diversity in AI-related jobs could be reflected in the created tools, affecting whether women are hired or promoted. Therefore, it is important to encourage females to advance in AI and machine learning to avoid such discrimination [69]. In addition, employers should be thinking about this job re-distribution in advance to help ensure that a wave of redundancies following technological change does not lead to a sudden worsening in organizational gender balance.

There is an emerging focus on fairness in machine learning generally and women must be at the core of who defines the concept of fairness. Advancing women's careers in the area of Artificial Intelligence is not only a right in itself; it is essential to prevent advances in gender equality supported by decades of feminist thought from being undone [70]. In addition, some regulations have emerged to tackle this issue. For instance, the President of the European Commission declared that "Digital technologies, especially Artificial Intelligence (AI), are transforming the world at an unprecedented speed. They have changed how we communicate, live, and work. They have changed our societies and our economies." and highlighted that "In my first 100 days in office, I will put forward legislation for a coordinated European approach on the human and ethical implications of AI" [71].

Furthermore, the December 2019 UN Secretary General's review and appraisal of the Beijing Declaration and Platform for Action implementation addresses the digital revolution as one of the major shifts that have taken place since 1995. It recognizes that technological advances, including AI, automation, and robotics, have profound effects on gender equality and women's rights in all spheres of life [72]. However, there is a little consideration of the decades of research on the relationship between gender ideology

and language. Incorporating gender theory, in particular feminist linguistic theory, into the approach to machine learning from textual data may prevent learning of gender bias and avoid the need to modify the algorithms [70]. Linking AI with deployment, AI is expected to reduce gender discrimination in organizations; further studies need to be done to prove this assumption.

Both AI and the fight to achieve gender equality remain areas where a lot of work remains to be done. Some best practices on dealing with any problems and opportunities may become outdated and new ones may emerge over time. Thus, member states should exchange these best practices on a regular basis to inspire others even if some practices might be tailor-made for a given context in a given member state [73].

## 6 Conclusion

The following conclusions could be drawn based on the research work consulted for this article.

1. Despite all state rules and regulations, gender discrimination has not been wiped out even in developed countries like UK, USA, Australia. Regulation breaches are hidden in most companies, out of which many are not sensed at all.
2. Women's discrimination is widespread in developing countries, though regulations have also been promulgated there as well.
3. The discrimination can be observed or hidden regarding hiring, promotions, job classification, assigning responsibilities, trustworthiness, behavior, communication, and sexual harassment.
4. Various authors and researchers have observed discriminations based on women's attraction (look, beauty, sexiness, dressing and appearance, and smartness), age, marital status, conditions (pregnancy), and having children.
5. The discriminators may be managers, seniors, co-workers, and even outsiders.
6. The problem's peak is manifested when fellow gender, especially those women promoted to senior positions practice discrimination at the workplace.
7. The problem of gender discrimination is still highly significant and needs to prioritize consideration of authorities, managers, executives, and stakeholders.
8. The fellow teammates also need special training and awareness.
9. Women workers should also be aware of their rights and raise their voice to get what the laws provide them. They should be taught to claim facilities and rights provided under regulations.
10. The role of senior and educated women, especially those placed at responsible positions, is highly important. They should support the cause of their gender and fellow team members.
11. The concerted efforts of all stakeholders are required to tackle this very sensitive and extensive issue. The regulation breachers should be held responsible and accountable.
12. Linking Artificial Intelligence AI, Machin Learning (ML), and Gender discrimination (GD) is a new phenomenon requiring more investigation and care from scholars and practitioners.

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