COMPARATIVE ANALYSIS OF ROLE, OPPORTUNITIES AND EMPOWERMENT OF WOMEN IN INTELLECTUAL PROPERTY RIGHTS IN INDIAN PERSPECTIVE

Avinash Kaur & Shweta Garg, Advocates @ Delhi High Court[1]

There is no gate, no lock, no bolt that you can set upon the freedom of my mind"

-Virginia Woolf

ABSTRACT

Intellectual Property Rights (IPR) play an important role in recognising individual rights and serve as a tool to protect those rights from usurpation by others. It propels people to be more productive in innovation, which helps a country advance technologically and achieve overall economic growth. However, in this era of technology and innovation, gender equality is one of the most important issues to address and to resolve. The research paper not only talks about gender discrimination, which obstructs the maximum usage of such laws, but also leads to a deep impact due to gender bias in the field of IPR. The main objective of this study is to identify how to empower women by protecting their innovations and creativity. The analysis revealed that while IPR offers initiative for revenue generation, investment and brand building, women often face challenges in navigating IP systems, leading to underrepresentation in filing and exploitation of their creative work, necessitating inclusive policies, legal reforms and government support initiatives to overcome the gender gap in the field of IPR. The findings suggest the necessity, where IPR offers immense potential for women's economic and social empowerment, overcoming established gender disparities and systemic barriers, which is crucial for realising their potential fully.

Keywords: Intellectual property Rights, gender gap, Systemic barriers, women empowerment, India, WIPO, PCT.

[1] Advocates @ Delhi High Court

INTRODUCTION

Intellectual property rights can be referred to as "exclusive rights given to a person over the work or creations of his mind" and enable him to reap commercial benefits from his creative efforts and hard work. Under these IP laws, in the form of Copyright, patent, trademark, legal protection is given to the creator to safeguard their artistic work and creation. As per the definition of the World Intellectual Property Organisation (WIPO) "***Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce***"[2]. Further, under World Trade Organisation **(WTO)**, "***Intellectual property rights are the rights given to persons over the creations of their minds. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time***.[3]" The unique characteristic of IP rights is that these rights not only protect, promote but also ensure overall growth. Descriptive statistics, without further econometric analysis, reveal that countries with the highest IPR protection tend to grow faster. Interestingly, countries in the second lowest IPR protection level show higher average growth rates than those in the middle levels of patent protection[4].

One more unique characteristic of IP laws is that it ensures equal rights and opportunities to all innovators and creators to explore, exploit and protect their talent and creativity to the maximum and does not discriminate against individuals on the basis of their gender, social, economic and political status. This very basic concept was also adopted by the UN on 16th December 1966 under the **International Covenant on Economic, Social and Cultural Rights (ICESCR)**. The Covenant clearly addresses everyone's right to participate in cultural life and benefit from scientific progress. It also includes the right to benefit from the protection of moral and material interests from scientific, literary or artistic works. State Parties are obligated to take steps to protect material interests resulting from any scientific, literary or artistic production of which they are the author.[5] According to the **Indian Constitution U/A 51A(h)[6],**

---

[2] World Intellectual Property Organization, *What is Intellectual Property*, available at: https://tind.wipo.int/record/42176?v=pdf; https://www.wipo.int/en/web/about-ip (last visited Jan. 12, 2026).

[3] Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).

[4] David M. Gould & William C. Gruben, *The Role of Intellectual Property Rights in Economic Growth*, 48 J. Dev. Econ. 323–350 (1996), available at: https://doi.org/10.1016/0304-3878(95)00039-9; https://www.4ipcouncil.com/application/files/4317/5866/0142/27_03_25_Summary_Gould_Gruben.pdf. (last visited on Jan. 15, 2026)

[5] International Covenant on Economic, Social and Cultural Rights, art.15.

[6] Constitution of India, art 51A(h).

it shall be the duty of every citizen of India- to develop the scientific temper, humanism and the spirit of inquiry and reform.

However, it is also disappointing that despite the full recognition and adoption of equal rights and opportunities, some human groups remain severely underrepresented. Despite their innovative potential, these human groups remain under-utilised and under-valued and it won't be overstated that women are most under-represented, under-estimated and forsaken.

In the 21st century, where women occupy half the total population of the world and hold the same legal rights as men, yet are not able to leverage and showcase their talent and creativity as compared to men. Women, with their courage and hard work are exhibiting their great potential to reshape the world through their creative ideas, imagination, ingenuity and hard work in every sector. Whether we talk about arts, entertainment, business entrepreneurship, politics, or science, innovation, or technology, women are making their presence felt by carving out a niche for themselves. Few examples of women who reshape the world by showcasing their talent are Ms. Ursula von der Leyen, Indira Nooyi, Marie Curie, Rosalind Franklin, the first woman to win a Nobel prize and the only person to receive Nobel prizes in two academic fields, whose X-Ray crystallography enabled the discovery of the complex helix DNA's structure. These are just some names who have significantly enshrined women's empowerment and taken women's position to the next level. Even today, the number of successful female innovators is very limited or the work of many females remains unrecognised, unacknowledged and unnamed. Despite their talent and achievements, women worldwide face challenges such as limited leadership opportunities, gender bias and underrepresentation in senior research and academic roles. Though, "inclusivity and diversity" have been realised as the top most priorities in the field of IPR, a still huge gender gap has been also constantly realised and resulting that, most female creators, inventors, or entrepreneurs deeply feel that their capability remains unseen or unnoticed. Whereas, now, India is seeing a major shift in its scientific landscape, moving from a "leaky pipeline" to a surge of female participation at the foundational level, the numbers at the entry level are record-breaking, and leadership and long-term retention remain key focus areas for reform.

FEW FINDINGS OF GENDER GAPS IN THE IP STREAM:

To understand this gender gap, a few statistics may be seen:

i) In 2024, women constituted 18% of all inventors listed in published PCT applications, while

men accounted for the remaining 82%. The proportion of women inventors has increased notably from 11.6% in 2010 to 18% in 2024. Moreover, the proportion of women inventors has expanded in every region of the world over the past decade. About 37% of published PCT applications named at least one woman as inventor in 2024, and 96% featured at least one man as inventor. The share of published PCT applications with at least one woman as inventor has risen from 23.1% in 2010 to 37% in 2024, whereas the share of those with at least one man as inventor has slightly decreased over the same period from 97.5% down to 96%[7].

As the above presented statistics reveal that women's participation is increasing, yet as compared with men's engagement and participation, this gender parity in patent registration applications by women is significantly low and is an issue of concern across the globe.

In India, there are now a considerable number of female entrepreneurs, as compared to male innovators or entrepreneurs, however, a very small percentage of them come forward to seek protection for their work or file patent applications formally. In a report published in the year 2024, WIPO found that only 12.1% of total PCT applications were filed by female innovators[8].

ii) Despite the strong presence of women in creative spaces, they often face the challenge of being underpaid, attributed to their association with the growing 'gig economy' and undervaluation of their labour to control production costs, which causes dejection and a step back attitude in them. For instance, globally, in 2018, among the top 20 most popular exhibitions around the world, only one was headlined by a woman artist: *Joana Vasconcelos: I'm Your Mirror* at the Guggenheim Bilbao. This least presence of women clearly raises the concern over the women empowerment even the field of arts and culture worldwide.

In India, the Status of women artists and authors is not very commendable. Studies show that in traditional publishing, female authors' titles command only around 45 per cent of the price of male authors[9]. Furthermore, male authors continue to dominate bestseller lists due to major issues such as a lack of funds or the willingness to engage in the marketing and promotion of

[7] World Intellectual Property Organization (WIPO) (2025). World Intellectual Property Indicators 2025. Geneva: WIPO. DOI: 10.34667/tind.58959, available at: https://www.wipo.int/edocs/pubdocs/en/wipo-pub-941-17-2025-en-world-intellectual-property-indicators-2025.pdf (last visited on Dec.29, 2025).

[8] WIPO, "Intellectual property statistical country profile 2024" , available at; https://www.wipo.int/edocs/statistics-country-profile/en/in.pdf . (last Visited on Dec. 04, 2025).

[9] D.B. Weinberg & A. Kapelner, *Comparing Gender Discrimination and Inequality in Indie and Traditional Publishing*, PLoS ONE 13(4): e0195298 (2018), https://doi.org/10.1371/journal.pone.0195298 (last visited Dec. 18, 2025).

their books.

iii) In the Report titled "***PROGRESS ON THE SUSTAINABLE DEVELOPMENT GOALS THE GENDER SNAPSHOT 2022***[10]" published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) today, women remain a minority in both **STEM** (Science, Technology, Engineering and Mathematics) education and careers, representing only 28 per cent of engineering graduates, 22 per cent of artificial intelligence workers and less than one third of tech sector employees globally.

In the same Report, UNESCO has come up with more grave facts that Women and girls remain underrepresented across the creation, use and regulation of technology. They are less likely to use digital services or enter tech-related careers, and significantly more likely to face online harassment and violence. Specifically, in India, about 43% of STEM graduates are women, which is highest in the world, but unfortunately their share in STEM jobs is a mere 14%[11].

This limit not only their own digital empowerment but also the transformative potential of technology as a whole—over the past decade, women's exclusion from the digital sphere has shaved $1 trillion of the GDP of low- and middle-income countries.

iv) In the most recent report by the UN, the gender gap has again been alarmed by UN Gender Snapshot 2025, warns the National Governments that "if current trends continue, the world will reach 2030 with 351 million women and girls still living in extreme poverty". Further, the Sustainable Development Goals (SDGs), particularly SDG 5 to achieve gender equality and empower all women and girls missed[12].

These statistics show that gender bias is a pervasive global issue and it would not be exaggeration, that even after a long struggle for their equality and freedom, women are still far behind men in terms of professional and financial independence. Even today, women are depending on men's wishes and desire for their education and career choice.

---

[10] UN Department of Economic and Social Affairs, *Progress on the Sustainable Development Goals: The Gender Snapshot 2022*, available at: https://unstats.un.org/sdgs/gender-snapshot/2022/ (last visited Jan. 2, 2026).

[11] ibid

[12] UN Women and DESA. 2025, "*Progress on the Sustainable Development Goals: The Gender Snapshot 2025*" (2025). Available at: https://www.unwomen.org/en/digital-library/publications/2025/09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2025 . (last visited on Jan. 3, 2026)

Causes/ Barriers in lower participation and contribution of women in the field of IPR:

1. **Societal and family barriers:** Even after the claims of social and educational advancement in society, lawmakers are not completely successful in providing equal opportunities in education and at work. It is evident that women are still facing huge challenges in their lives to represent themselves in a male-dominant society. Psychology has not been completely changed and there are many fields such as Engineering, defence, space etc., which are being taken as exclusive or majorly for males and if a woman enters in that field, females feel biased and neglected as compared to men. In India, girls and women are subjected to cultural and societal restraints due to the increasing gender-based crimes, patriarchal societal standards prioritising boy over girl in terms of investing money in education are the reasons that the girls do not take part in STEM courses. Further, when it comes to pursuing careers in STEM fields, women experience stereotypes and gender biases in recruitment.

   Moreover, when a woman grows older, she cannot pursue a career of her own choice. She has to answer various questions: What, how and where she wants to do, and reluctantly, the female has to choose her career and education according to desires, permission and location of her family. Most of the time she sacrifices her dream career after their marriage. She had to choose their career options based on the geographical location of their parental house or husband and the in-laws. 35% of females reported pausing their business due to family caregiving responsibilities.[13]. This caregiving responsibilities of the family also slows the career options for the women. Further, women lose network once they get into the family way due to the gap in the career. This disruption often slows career progression, as rebuilding networks takes time and effort.

2. **Educational barriers:** Although society has reached the point where girl children are getting education, yet, the field of science and technology is full of male intakes in educational and training institutions. According to Namrata Gupta, in her book "Women in Science and Technology: Confronting Inequalities", she stated that statistics show that only 10-15% of STEM researchers in STEM public institutes like

[13] Reserve Bank Innovation Hub, *At the Helm: Women Entrepreneurs Transforming Middle India* (2024).

IITs. AIIMS, CSIR, PGIs etc are women and the number of women in R&D labs are even smaller[14].

3. **Financial barriers:** Where financial inclusion of population is the backbone of sustainable development of any society, for women, in particular financial inclusion, may be called as an indispensable goal. However, a major female population is still facing discrimination to have equal financial resources to nurture and explore themselves in bringing out their intellectual work. Statistics show that in developing economies, the gender gap stands at 6 per cent while globally it sits at 4 per cent with 78 per cent of men reporting having an account at a formal financial institution compared to 74 per cent of women[15]. Even today, their guardians or family don't provide them full financial support in fulfilling their dreams and aims of being an artist or innovator which results in economic dependency.

4. **Technical or communication barriers:** Technical barriers significantly impede women's empowerment by limiting their access to and effective use of technology. Women are deprived by not providing sufficient digital literacy, lack of access to technology and internet, safety concerns and gender biases in technology designs. UN statistics show that the digital divide remains a gendered one, with 37 per cent of women globally not using the internet, meaning 259 million fewer women have access to the internet than men[16]. Addressing these challenges is crucial for bridging the gender digital divide and fostering inclusive technological advancements.

Impact of gender Biasedness in field of IP

1. **Lower representation in PCT Registrations**: It is evident that PCT registrations from women innovators as compared to the men is very less and their participation is discouraged. In India, the primary concern has never been the number of women graduates but the proportion who secure jobs. Statistics show that India faces a critical paradox: 43% of India's STEM graduates are women, the highest proportion among

[14] Namrata Gupta, Women in Science and Technology: Confronting Inequalities 224 (2020).
[15] The World Bank, *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19* (Washington, D.C.: World Bank, 2021), available at: http://documents.world bank.org /curated/en/187761468179367706/pdf/WPS7255.pdf (last visited Jan. 10, 2026).
[16] International Telecommunication Union (ITU), *Internet More Affordable and Widespread, but World's Poorest Still Shut Off from Online Opportunities: Facts and Figures 2022*, available at: https://www.itu.int/en/mediacentre/Pages/PR-2022-11-30-Facts-Figures-2022.aspx (last visited Dec. 29, 2025).

major economies globally. Yet, women represent only 27% of the STEM workforce, limiting women's access to career opportunities offered by the STEM sector[17]. Further only 31.5% researchers are women[18].

This paucity of women in STEM is not merely due to skill inadequacy but also a result of assigned stereotypical gender roles. Women are discouraged from showcasing their talent in their own name; their innovation is registered under the name of their male counterpart. Another aspect is that, Women's patents often receive narrower claims, reducing their scope and economical value and are less frequently updated.

2. **Lower participation and engagement of women cause less contribution in GDP of India**: India's economic growth is being redefined, written and engraved by resilient, determined and innovative women. They share 48% of the total population, yet contribute 18% to the National GDP of India. This gender biasedness results in women being overshadowed, undervalued and face higher hurdles from application to commercialization, impacting their economic independence. By restricting IP ownership, gender bias limits women's economic gains, lower economic participation, market influence and less bargaining power, hindering broader gender equality.

3. **Discouragement of women in the field of arts and culture:** These biases affect creative industries of music and art also, where women's works are undervalued, and they face fewer opportunities. Despite their significant contributions, women artists in India continue to face challenges in gaining recognition and success in a predominantly male-dominated art world. Major issues are, lack of representation in galleries, limited access to resources, and cultural bias which often hinder the career of women artists. Additionally, the art market, both domestically and internationally, remains partial in favour of male artists, leading to disparities in visible financial and identity gaps.

4. **Under-utilization of talent in the field of STEM:** Due to the work environment in STEM field such as sexual harassment, pay-gaps and recognition issues, gender bias can limit dreams, reduce confidence and create unfair systems. Societal roles are all

[17] Kanta Singh & Anatra Lahiri, *Women, STEM Careers and a More Receptive Industry*, THE HINDU, July 25, 2025, available at: https://www.thehindu.com/opinion/op-ed/women-stem-careers-and-a-more-receptive-industry/article69811907.ece (last visited Jan. 18, 2026).
[18] Ibid

different for both men and women. They generally take a setback due to family responsibilities which directly cause the full utilization and exploitation of talent. Safety for women in STEM involves prevalent issues which have deep rooted biases affecting opportunities and recognition. Creating a safe environment through strong mentorship and ensuring physical security with safe transport requires a multi -faceted approach from institutions like creating women hostels near institutions. According to the survey by National Academics of Sciences, Engineering and Medicine 58% of female STEM students face sexual harassment during their academic years[19].

Global Initiatives for women empowerment in the field of IPR

While addressing and fixing the huge gender gaps, various initiatives are being done by national governments and international organizations.

1. WIPO IP and Gender Action Plan (**IPGAP**) provides a global blueprint to integrate gender perspectives into IP legislation and pilot new projects for women. It promotes women's engagement in all aspects of IP and innovation, encouraging the use of IP for economic empowerment by collecting data to identify the scope of the gender gap in innovation[20].

2. To strengthen and promote female engagement, WIPO has started the "IP for Women Entrepreneurs programme" where the Organisation provides research and mentorship for women in securing trademarks, copyrights, patents etc. They've also opened Technology and Innovation Support Centres (**TSICS**) to provide training to women.

3. **SheTrades initiatives** by the International Trade Centre (ITC) aims to empower women entrepreneurs by facilitating access to markets, technologies and networks. It focuses on enhancing women's capacity to protect their innovations

[19] Amanda Nguyen, *Gender Equity in STEM Challenge: Safety in STEM*, MIT (May 25,2023)
[20] WIPO, *WIPO Intellectual Property (IP) and Gender Action Plan: The Role of IP in Support of Women and Girls*, available at: https://www.wipo.int/publications/en/details.jsp?id=4670 (last visited Jan. 11, 2026).

through IPRs[21].

4. Countries like South Korea and Japan have implemented initiatives to increase women's participation in innovation, including grants for women-led startups and reduced patenting fees. In the European Union, the **Gender Equality Strategy 2020-2025** emphasizes the need for inclusive policies to reduce disparities in research, innovation, and IP[22].

In India

1. Under the Start up India scheme announced in 2016, which was launched to provide **speedy examination of patents** for start-ups including women- led start -ups. It also provided free legal assistance in IPR filing[23].

2. The **National IPR policy 2016** recognised the need for women participation in the IPR sector, it encouraged Indian universities to help women to join the STEM sectors to increase filings of patents by women[24].

3. Under the **Start-up Intellectual Property Protection (SIPP)** scheme, the government offers 80% reduction in patent fees for female applicants and provides expedited examination for applications featuring at least one female inventor. Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry by amending Rule 24(C) of Patent Rules, 2003 provided means for expedited examination of the patent application for female applicants or any application having at least one female inventor[25].

4. Another scheme is a decade-long running scheme called **KIRAN** (Knowledge Involvement in Research Advancement through Nurturing) where women can commence their career in science and technology which further helps them in contributing to IP generation and commercialization.

[21] International Trade Centre, *SheTrades Global*, available at: https://www.intracen.org/our-work/projects/shetrades (last visited Feb. 10, 2026).
[22] European Union, *The Gender Equality Strategy 2020–2025*, available at: https://ec.europa.eu/newsroom/just/items/682425/en (last visited Feb. 10, 2026).
[23] DPIIT, "Startup India 2016", Oct.2016.
[24] Government of India, *National Intellectual Property Rights Policy* (May 12, 2016).
[25] The Patents Rules, 2003, Rule 24C, Intellectual Property India.

5. In order to boost women entrepreneurship, the Government has also launched numerous programs such as **VIGYAN JYOTI SCHEME, BIO-CARE** and further encourages women in research and development activities.

6. The Department of Science and Technology has provided enhanced funding and support for women's universities under the **CURIE program** (Consolidation of University Research for innovation & Excellence in Women Universities).

Suggestions

To promote women's participation in innovation and IPR, governments and institutions should further take these steps:

i. Encouragement of women-oriented campaigns and capacity building programs focusing upon PCT awareness. Various awareness programs and lecture series to disseminate knowledge on innovation and IP creation.

ii. Systematically collect sex-disaggregated IP data to understand gaps and inform policy. This data is crucial for identifying the scope of the gender gap, designing targeted interventions and evaluating the effectiveness of policies and at the same time broadening labour laws include protective provisions like enhanced maternity leave, mandatory creche facilities and non-discrimination clauses to create a more congenial work environment for women.

iii. Institutionalize IP policies that consider women's unique barriers. Reduce administrative and legal hurdles for women filing IP applications. National IP offices should roll out initiatives offering resources like guidance on application submissions, training programs and access to funding opportunities.

iv. Create IP commercialization grants and funding for women-led businesses and start-ups. Provide reduced licence fees for women entrepreneurs and women led start-ups. The government should be supported in developing and implementing effective gender-focused policies and programs that consider the specific barriers women face.

v. Maximise the awareness initiatives to inform women and make them aware of the Govt efforts for their empowerment, such as financial support, subsidies, reduction of PCT

registration fee etc., a multifaceted approach that addresses financial constraints, lack of awareness, gender-bias and limited access to resources and networks.

vi. Maximisation of capacity building initiatives for women at all academic and professional levels to encourage them making careers in STEM. Establish better tools and policies within organizations to assess contributions and ensure that all individuals, including women, are correctly credited as inventors on patents and other IP assets.

vii. Increase the number of the girl's education policies and mentor-ship opportunities in rural or remote areas by way of public- private partnership. Offer more training and educational opportunities about IPR, particularly for women in small scale businesses who are often unaware of how to protect their work.

viii. Expansion and promotion of the representation of women in legal, business professions, especially in the IP- field which will encourage, empower and motivate the rest of the population to come forward to opt their dream career and goals.

ix. Boosting- up the women for leadership positions in not only the field of IPR, but also in other fields such as healthcare, hospitality, sports, education, politics etc. Highlight successful women through awards and public recognition to inspire others.

x. Offer pro bono IP consultations for women innovators and small business women. Establish strong mentorship networks connecting women with experienced IP professionals and successful innovators.

xi. Leverage IP offices to offer tailored services, workshops and consultancy for women. Encourage diverse innovation teams within public and private sectors.

CONCLUSION

The realization of women's rights is a global struggle based on universal human rights and the rule of law. It requires all stakeholders to unite in solidarity to end traditions, practices, and laws that harm women. It is a fight for freedom to be fully and completely human and equal without apology or permission. Women, the vital human resource, are the pillars of the world economy. They have contributed in almost every sphere of life, be it social, political, educational, economic or business. But the social norms, societal structure, relationship

between family and work and various processes of organisations and institutions have created many barriers for them. To address these problems, attitudinal changes in the society at large are absolutely essential. By implementing these measures, we can reshape a more gender friendly ecosystem at social as well as professional level and that will create such an atmosphere, where all humans can be evolved and nurtured together and achieve a sustainable development goal. Give a woman the liberty to think and provide her a sturdy platform to express her thoughts, dreams and innovation and then see a whole new world.