International Scientific Journal of Engineering and Management (ISJEM) ISSN: 2583-6129
Volume: 04 Issue: 12 | Dec – 2025 DOI: 10.55041/ISJEM05250
An International Scholarly || Multidisciplinary || Open Access || Indexing in all major Database & Metadata

Career Prospects of Women in the IT sector – Opportunities & challenges.

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Abstract: -

This paper examines the career development of women in the Information Technology (IT) sector, highlighting both opportunities and challenges across different career stages. While the IT industry in India has experienced significant growth and increasing female participation, structural, cultural, and organizational barriers continue to impede women's progression from entry-level roles to senior leadership and executive positions. Drawing on extensive secondary data, including industry reports and prior research, the study identifies key constraints such as limited access to sponsorship and mentorship, exclusion from high-visibility projects, biased evaluation and promotion practices, and work–life balance pressures, particularly at mid-career stages. Despite relatively high representation in early-career roles, women face cumulative disadvantages that contribute to the "leaky pipeline" and persistent gender pay gaps. The analysis also highlights the positive impact of female leadership on organizational outcomes, while emphasizing that inclusion requires sector-wide interventions rather than isolated initiatives. The paper concludes that targeted strategies—such as mentorship programs, transparent promotion policies, equitable project assignments, and supportive organizational cultures—are essential to enhance women's long-term career growth and leadership representation in the IT sector.

Keywords: - Gender pay gap, Gender diversity, Glass ceiling, Mid-career progression etc.

I. Overview of IT sector.

The Information Technology (IT) industry in 2023 is poised for significant growth and transformation amidst a backdrop of global economic challenges. This sector is a powerful force driving economic growth, creating jobs, and influencing nearly every aspect of modern business. The IT & BPM sector has become one of the most significant growth catalysts for the Indian economy, contributing significantly to the country's GDP and public welfare. The IT industry accounted for 7.5% of India's GDP in FY23, and it is expected to contribute 10% to India's GDP by 2025. The IT spending in India is estimated to record a double-digit growth of 11.1% in 2024, totalling US$ 138.6 billion up from US$ 124.7 billion last year. India's IT industry is likely to hit the US$ 350 billion mark by 2026 and contribute 10% towards the country's gross domestic product (GDP). (Indian IT sector report, 2024).

In FY22, the top three Indian IT companies, TCS, Wipro and Infosys, were expected to offer 1.05 lakh job opportunities due to the increasing demand for talent and skill. The IT spending in India is estimated to record a double-digit growth of 11.1 percent in 2024, totaling $138.6 billion up from $124.7 billion last year. India's overall Digital Competitiveness Score of 60 (on 100), ahead of every BRICs nations besides China, reflects the rise of tech talent in the country. In the Union Budget 2024-25, the allocation for IT and telecom sector stood at Rs. 1,16,342 crore (US$ 13.98 billion). (Times of India, 2021).

The government prioritizes cybersecurity, hyper-scale computing, AI, and blockchain. With data costs at Rs. 10/GB, India ranks among the world's cheapest. (India Brand Equity Foundation, Jan,25).

II. Women in IT

In the ever-evolving world of technology, there's a significant problem: women are not adequately represented. This stems from socioeconomic barriers like the gender distribution of labour and a reinforced cultural image of the tech field as a space for male geniuses only. Despite efforts to promote gender equality in various fields, the tech sector continues to be largely male dominated. Addressing this disparity is crucial to creating a more inclusive and diverse tech industry that harnesses the talents of everyone, regardless of gender.

"Women in Tech Statistics (2024)" opined that Women hold 32.8% of entry-level positions in computer science-related jobs. Just 10.9% of those holding CEO or senior leadership roles are women. The industry standard for the percentage of women employed in tech career positions is 26%.

Apparently, when women take over the leadership in tech industry brands, the valuation in first and last funding becomes significantly higher – 64% and 49%. Female employees working in website and app development are claimed to make better decisions and be more creative

According to Women in Tech Day (n.d.), Over one-fifth of women in tech claim that their gender is a barrier in achieving professional success and more than one-third said their companies have a problem with sexual harassment.

Technology firms included in the Fortune 500 list that had a majority of female board members experienced more than 40% of return on sales compared to less diverse entities. Women tend to provide better communication skills, exciting ideas and exquisite morale to the table, which should definitely be appreciated by tech industry companies.

According to a study conducted by the CFA Institute, the IT sector has the highest representation of women in the workforce, with 30% female participation. Financial services companies ranked second with 22.4% female participation during the financial year 2021-22. As the largest employer of the country's white-collar workforce, the IT sector stands out for its relatively higher female representation. In contrast, the FMCG and industrial sectors have the lowest representation, with only 5.5% and 4.3% female participation, respectively. (CFA Institute & CFA Society India, 2023).

III. Objectives: -

1. To compare the career trajectories of women and men in IT to identify gender-based differences in opportunities and outcomes.
2. To study the progression patterns of women from early career roles to mid-career and senior positions.
3. To identify the factors influencing women career progression in IT sector across different career stages.
4. To identify the barriers that hinder women's advancement into technical leadership and top management roles.
5. To recommend interventions and strategies that can support women's sustained career growth and leadership development in the IT sector.

IV. Literature review

IT-related jobs are often perceived as "safe" career options for women because they are predominantly white-collar positions, where employees typically engage with an educated and relatively exclusive segment of society (Thakkar et al., 2018). This perception of safety and social acceptability contributes to the attractiveness of IT roles for women and influences their career choices within the broader context of gendered labour patterns. Scholars argue that such occupational preferences are shaped not only by economic considerations but also by societal expectations regarding appropriate professional environments for women.

According to Sharma and Nagaich's (2017) survey, women who enter the IT industry frequently experience initial uncertainties but are mostly motivated by their passion in the area and aspirations for their careers. The majority make their own career decisions, and early work placements are mostly obtained through campus recruitment or recommendations, with entry paths determined by qualifications. Women depend more on job advertisements than recommendations as their careers advance. Moderate upward mobility is revealed by promotion patterns: more than half

get one or two promotions, but few go on, suggesting a glass ceiling. Nevertheless, promotions happen fast—usually within a year or two—reflecting both continuous structural hurdles and performance-driven development.

Accelerated progression is highly associated with high-visibility or "mission-critical" assignments (Allen & O'Brien, 2006). According to Ibarra (1992) and McDonald (2011), men are more likely to be picked informally for these positions through homophilous selection, in which senior leaders, who are primarily men, choose protégés who look like them. Women, on the other hand, report being assigned to regular, less prestigious technical work more frequently, which has a lesser correlation with the chance of promotion (Cech, 2013).

Gender-based stereotypes, discrimination, the gendered division of work within the home, and self-silencing within organizations are all found to be impeding women's career advancement, according to another study conducted among female software engineers in the Indian IT sector. (Maji & Dixit, 2020).

The 2008 study Climbing the Technical Ladder by the Clayman Institute describes how women advance through four career stages: apprentice, mid-level, senior, and executive. It demonstrates that structural and cultural hurdles continue to exist at each stage. Mid-career attrition and the "leaky pipeline" are caused by problems such uneven promotion pathways, insufficient visibility in high-impact jobs, and limited sponsorship.

According to a 2024 study on mid-career women in IT, structural, interpersonal, and personal barriers overlap during this career stage. Gender stereotypes regarding technical aptitude, career breaks, caregiving duties, and unsupportive organizational cultures all contribute to women's blocked advancement, role stagnation, and increased work-life conflict. The "leaky pipeline" in the IT industry is exacerbated by a lack of role models and increasing demands at home and at work. The study's particular focus on mid-career emphasizes that issues with retention and advancement continue well after entry-level. Its cross-sectional, India-specific focus, however, indicates that more extensive and long-term study is required.

Although the gender wage gap in the tech industry is said to be narrower than in other areas, it still exists. Although they are paid less for doing the same amount of work, women in IT businesses often feel that they must constantly demonstrate their value to their supervisors and coworkers. Women quit their IT occupations more frequently than men, which is a cause of frustration. (Roshan, 2024).

Industry evidence also shows persistent pay inequities in India's tech sector. A TeamLease Digital study reported by *ETGovernment.com* (2025), based on 13,000 contractual tech associates, finds a 16.10% gender pay gap in GCCs, rising to 16.4% at senior levels and reaching 22.2% in high-demand technical roles. These results reinforce broader findings of structural gender disparities in IT compensation.

Within the IT services sector (non-contractual, services firms), the gender pay gap is lower but still visible — small overall (~ 3.55%), but widening with seniority: ≈ 6.12% at mid-level, ≈ 8.34% at senior level.

A *Business Standard* (2025) report shows that although women's representation in some GCCs rose from about 31.4% in 2020 to 38.3% in 2024, significant pay gaps persist, reinforcing evidence that higher participation alone does not ensure equity in the tech sector.

When an organization performs poorly, they favor female leadership (Bruckmüller et al., 2010; Ryan et al., 2011). According to studies, a leader needs feminine qualities like empathy, relationship-orientedness, service-orientedness, and compassion to function well in such circumstances.

Tretiakov, Jurado, and Bensemann (2024) demonstrate how a broader professional ecosystem influences women's IT careers in addition to specific organizations. The study, which is based on interviews with 46 women in New Zealand, concludes that careers are frequently flexible and non-linear, with women alternating between technical, managerial, and consulting roles to balance personal needs and professional development. Women use networks and career flexibility to overcome obstacles despite the persistence of gender biases. The study makes the case that sector-wide support, such as networks, mentoring, and flexible pathways, is more important for increasing women's involvement in IT than discrete organizational initiatives.

Workplace re-entry and re-integration policies are reported to be weak after the maternity leave and women experience being assigned less challenging and fulfilling tasks to women after the break (Thakkar et al., 2018).

We cannot conclude that the industry is gender unbiased because an analysis shows that over 51% of entry-level hires are women; over 25% of women hold managerial roles, but less than 1% are in the highest level or C-Suite (Raghuram et al., 2017).

V. Research Methodology

This study adopts a descriptive and analytical research design based entirely on secondary data. The purpose is to analyse existing literature, published statistics, and prior research findings to understand the career trajectories and career prospects of women in the IT sector.

VI. Discussions and Analysis

1) Women's careers in IT progress through four stages—apprentice, mid-level, senior, and executive—each marked by increasing gender-based barriers. While entry-level roles show growing diversity, representation drops sharply at mid-level, a critical attrition point. Women face limited access to stretch assignments and leadership opportunities, must continually prove themselves, and encounter opaque promotion processes, leading to slower advancement, burnout, and disengagement. At the executive stage, few women occupy high-level technical roles, with scarce sponsorship and role models reinforcing limited upward mobility.

2) Women in IT start their careers with strong participation and comparable qualifications to men, but face increasing barriers at mid- and senior-career stages. Early disparities in visibility, networking, and high-impact assignments create cumulative disadvantages. Mid-career bottlenecks—limited sponsorship, exclusion from informal networks, fewer stretch opportunities, and subjective evaluations—slow advancement and contribute to the "leaky pipeline." By senior levels, these compounded barriers result in significant underrepresentation of women in high-level technical and leadership roles.

3) Men have faster access to high-visibility projects, networks, and sponsorship, which accelerates their advancement, even though women begin early-career IT employment with comparable skills. Women have fewer role models, less access to networks, and less exposure in their projects, all of which impede advancement. These differences worsen in mid-career, when women face discriminatory assessments, sponsorship gaps, and work-life restrictions, while men are more likely to pursue leadership paths. There are long-lasting gender disparities in technical and leadership professions as men easily rise to high positions whereas women either plateau or quit.

4) Organizational, cultural, and structural impediments prevent women from advancing in IT. Progress is slowed by a lack of sponsorship, uneven project assignments, unclear promotions, unconscious bias, gender stereotypes, and work-life conflicts. Despite having similar qualifications and competence, women are underrepresented in senior technical and executive posts due to practices including undervaluing collaborative contributions and the "prove-it-again" phenomena.

5)IT-related jobs are often perceived as "safe" for women because they are white-collar positions that involve interaction with a predominantly educated and professional segment of society (Thakkar et al., 2018). This perception can contribute to higher female participation in entry-level IT roles, as these jobs are associated with prestige, social acceptance, and lower exposure to overt workplace risks compared to other sectors.

6. Research suggests that organizational preferences for female leadership often emerge in contexts of poor organizational performance, where traditional masculine leadership traits are perceived as insufficient to address crises or turnaround situations (Bruckmüller et al., 2010; Ryan et al., 2011). Studies indicate that in such scenarios, leaders with **feminine attributes**—including empathy, relationship orientation, service-mindedness, and a caring approach—are considered more effective for restoring team cohesion, employee morale, and collaborative problem-solving. This phenomenon highlights a gendered expectation in leadership, where women are valued not solely for their technical or strategic capabilities but for socially-oriented skills associated with traditional femininity.

7.Raghuram et al. (2017) reveal a significant gender imbalance in IT careers: although women make up over 51% of entry-level recruits and 25% of managers, fewer than 1% reach executive or C-suite positions. This attrition reflects systemic barriers—limited sponsorship, exclusion from high-visibility projects, and biased evaluations—that reinforce a "glass ceiling," showing that apparent gender-balanced recruitment does not translate into leadership parity.

VII. Limitations of the Methodology

- The study relies solely on existing literature; therefore, gaps in available research may limit conclusions.
- Lack of primary data may restrict deeper personalization or context-specific insights.
- Variability in the quality and methodologies of secondary sources may influence findings.

VIII. Conclusion

The career trajectories of women in the IT sector reveal a complex interplay between opportunities, organizational structures, and cultural norms. While women increasingly enter IT at entry-level positions and are represented in mid-level managerial roles, their progression to senior leadership and executive positions remains severely limited. Systemic barriers—such as restricted access to sponsorship, gender-biased evaluation and promotion practices, exclusion from high-visibility projects, and organizational cultures that favor masculine norms—create a cumulative disadvantage over time. Even in roles perceived as "safe" or socially acceptable for women, these structural challenges hinder long-term career advancement. Addressing these disparities requires targeted interventions, including mentorship and sponsorship programs, transparent promotion processes, equitable allocation of strategic assignments, and organizational cultures that actively support diversity and inclusion. Without such measures, the IT sector risks underutilizing a substantial portion of its talent pool and perpetuating gender inequities at senior levels.

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