

Gender Bias in Tech: Impact on Women

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

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Spring 2024

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

The persistent effects of gender bias in the tech industry continue despite increased awareness of diversity and inclusion. These disparities impede progress and reflect broader societal challenges in equity and inclusivity. This research paper delves into various aspects of this issue, particularly examining its impact on women compared to men in the tech workplace. Though women comprise nearly half of the workforce (47%), women are underrepresented in computing roles, with only 25% occupying such positions, a relatively stagnant statistic since 2015 (Zhou, 2024). Three critical facets of this issue warrant examination: the gender pay gap, the confidence gap, and the intersection of parenthood often compounded by societal norms in workplace dynamics. Actor-Network Theory (Crawford, 2020) provides a lens through which I will analyze the different aspects of this disparity. By highlighting the diverse range of actors involved, such as people in the workplace, societal norms, workplace structures, and individual choices, it offers valuable insights into the underlying parts of this topic.

By delving into the complexities of this topic and its implications, we can pave the way for a more equitable and inclusive environment for all, irrespective of gender. Addressing how different companies have tried to navigate this disparity will also be discussed alongside recommendations for policies that could help mitigate this issue. For example, Meta launched a program in 2016 called *#SheMeansBusiness*, which provides support and resources for women entrepreneurs. So far, this has equipped over 1 million women in 28 countries with training and mentorship to grow their business on the Meta platform. This analysis will offer valuable insights into practical strategies that can be harnessed to foster gender equity in the tech industry, thereby contributing to a more diverse and thriving workforce. It is of utmost importance for every individual to feel comfortable in the workplace and know they are provided with equal growth

opportunities, free from any limitations imposed by factors beyond their control, such as their gender. The bedrock of productivity, innovation, and overall well-being is an environment where all individuals feel valued, respected, and empowered to pursue their professional aspirations.

Gender Pay Gap

The gender pay gap is the difference in earnings between women and men (Oxfam America, 2024). It remains a pressing issue within the tech industry despite its widespread acknowledgment of its existence. Women continue to encounter significant challenges, such as underrepresentation, unequal pay, and unconscious bias (Acevedo & Lestz, 2023). Women in tech presently are undercompensated 2.8% less than men in similar roles (Acevedo & Lestz, 2023). While tech companies have taken steps such as implementing unconscious bias training and mentorship programs to improve workplace culture, much remains to be done. Google, for instance, has implemented unconscious bias training. Strategies proposed to combat bias include structured evaluation systems, data collection, evaluating workplace messages, and fostering accountability (Schneider, 2017). However, despite these efforts, there is still a long road ahead in addressing the gender pay gap effectively.

A 2020 survey by Women Who Tech delved into the experiences of tech industry startup founders, revealing immense disparities in funding allocation based on gender. For instance, while 52.34% of white men received funding, only 21.65% of white women, 17.59% of women of color, and 21.15% of men of color secured funding. These statistics emphasize the existence of gender biases and vividly demonstrate how they directly translate into the imbalance of opportunities and financial rewards for women and minorities in the tech industry. Despite making up nearly half

the workforce (47%), women continue to be underrepresented in computing roles, with only 25% holding such positions, a relatively stagnant statistic since 2015(Zhou, 2024).

The Actor-Network Theory offers a lens to examine the various actors shaping the current gender pay dynamics in the tech industry, from organizational and governmental structures to individual experiences. While inclusive and diverse hiring practices are important, achieving gender equality at work necessitates concrete steps to foster an empowering environment free from unconscious biases. Collaborative efforts among all the actors involved, including the government, individuals working at various tech companies, and the companies themselves, are crucial for driving meaningful progress toward gender equity. Inclusivity fosters innovation and challenges traditional norms that hinder individuals from advocating for themselves. Openness to change and promotion of diverse ideas are key to establishing an equilibrium where everyone feels valued and rewarded for their contributions.

Confidence Gap

The *Confidence Gap* is a term that explains the notable contrast in job application behaviour between men and women. Research shows that while men often apply to jobs where they meet 60% of the qualifications, women, on the other hand, typically hesitate to use or only submit applications for jobs where they meet 100% of the requirements (Ibrahim, 2019). This confidence gap has implications for career advancements for women as it leads to lots of self-rejection and can potentially limit the career trajectory of women by unintentionally missing out on opportunities for which they could have been a good fit.

Women also tend to suffer more from imposter syndrome than men. The *Confidence Gap* is a psychological phenomenon where "women doubt their abilities and feel like a fraud in the workplace, despite evidence of their competence and accomplishments (Kirkhr, 2023). These feelings of not being good enough are powerful for women in male-dominated fields such as technology. A study conducted by Harvard on the gender gap in its computer science program reported that women with eight years of programming experience are as confident in their skills as their male counterparts with 0-1 year of programming experience (Ibrahim, 2019). This very fact is alarming because women are often subject to workplace stereotypes and are expected to comply with these stereotypes, which can further intensify the feelings of pressure they might already feel. The technology industry also has a history of perpetuating gender stereotypes that undermine women's skills and abilities in STEM. "For instance, women are often seen as lacking the necessary skills and traits to succeed in the field, such as technical expertise, leadership, and problem-solving abilities" (Udoma, 2023). For this very reason, women are also likely to attribute their success to external factors, such as luck or help from others, rather than their abilities. This mindset can perpetuate the feelings of imposter syndrome even more.

In this context, societal expectations and stereotypes are key actors influencing women's confidence in the workplace. Society imposes gender norms and benchmarks, creating pressure for women to adhere to them. This deepens feelings of imposter syndrome, as women feel compelled to meet unrealistic standards set by societal norms. On the other hand, supportive environments can also be actors in this case to combat the feelings of imposter syndrome women may feel. Career mentorship or coaching can be a very effective tool to help women overcome imposter syndrome and achieve their fullest potential in the workplace (Kirkhr, 2023). Being able to verbally identify the different patterns of Imposter syndrome can help combat it as it'll help

with reframing old thought patterns and beliefs so that women can further see themselves in a more positive light.

The effects of imposter syndrome can oftentimes be quite profound as it can affect workplace performance, mental health, and cause for the neglect of the physical health. It may also cause women to push themselves to very long work hours and to take on countless responsibilities just for the sake of proving themselves to be worthy or competent. This can lead to intense burnout which is not good at all. There's a lot of work that must be done to foster an environment where there's a good equilibrium of everyone feeling supported and valued in a manner where they are able to thrive and do their best work. Studies show that having a supportive environment can help an individual to thrive in the work they are pursuing despite any potential doubts they may have at the beginning (Shawe, 2023).

Parenthood

Women in the tech industry face a unique struggle regarding parenthood, often more so than their male counterparts. This struggle can result in career setbacks and even lead women to forgo raising children due to concerns about how it can impact their careers. The observation that men are parents too, and the tendency for "their wives to leave high-powered careers to stay home" highlights women's unique challenges in trying to find a good equilibrium between work and family responsibilities (Shapiro, 2023). There is a burden placed on women by societal expectations concerning childcare that can hinder their career advancements in relation to their male peers (Pino, 2023).

The *Motherhood Penalty* is a term that starkly illustrates the working mothers face regarding pay and perceived competence in the workplace (Sivakumaran, 2022). The pursuit of career aspirations alongside the choice to have children is almost perceived as a punishment for women, reflecting a systemic failure to accommodate the needs of everyone involved. Women raising children face a penalty for underemployment, slow career progression, and lower lifetime earnings (Sivakumaran, 2022). In contrast, there is the *Fatherhood Bonus*, which highlights that men generally have different experiences in the workplace when becoming fathers (Diamond, 2023). Men's earnings generally increase when they become fathers, whereas, for women, each additional child is associated with a decrease in earnings (Budig, 2014). Fatherhood increases men's earnings by over six percent. This increase reflects societal norms of men being the primary breadwinners of their household. The traditional gender roles and societal expectations surrounding parenting can often lead to inequality in the workplace, whether it is intentional or unintentional. There is an expectation for women to primarily handle all the childcare, which clashes with the demands of work and opportunities to advance.

In line with this trend, nearly 43% more women have a career break listed on their LinkedIn profile than men, according to a new analysis from LinkedIn's Economic Graph team, with the most common reason being full-time parenting (Borden, 2024). As a result, most women take a break from their careers to temporarily care for their children, often leading to extended absences from the workforce lasting multiple decades. Alongside this, subtle microaggressions and biases hinder women in their career advancement opportunities upon their return to work due to adequate support systems and policies in place. "In the workplace, 90 percent of women report experiencing microaggressions or subtle forms of discrimination. 66 percent report that they have been treated

differently from men in their workplace, and 62 percent said their ideas have been dismissed and they have been viewed as less capable than men” (Nittle, 2022).

The absence of realistic policies on maternity leave for working mothers is a significant concern. After childbirth, working mothers undergo a profound transformation. It is of utmost importance to establish a workplace culture that is fortified by supportive policies. This could include initiatives such as flexible work environments post-childbirth, provision of on-site facilities for childcare, implementation of flexible parental support programs, and the introduction of generous parental leave policies. These measures not only cater to the immediate needs of new parents but also foster an environment that is conducive to career advancement. Importantly, they would also bring benefits to the workplace, such as increased employee loyalty and productivity. Unfortunately, such comprehensive support systems are not universally implemented, leaving many working mothers to navigate the complexities of parenthood and professional life without adequate assistance.

Intersectionality of the Pay Gap, Confidence Gap, and Parenthood

The intersectionality of the gender pay gap, confidence gap, and parenthood within the tech industry presents a complex network of actors that shape these issues and contribute to the overall problem of gender disparities in the field. At the forefront of this intersectionality are human actors, including those in leadership positions and regular employees. Susan Wojcicki, the former CEO of YouTube, is a compelling case study in this regard. After nearly 25 years at YouTube, Wojcicki made the decision to "step back from her role as head of YouTube and start a new chapter focused on her family, health, and personal projects she's passionate about" (Grant, 2023). Her

choice, a testament to her resilience, highlights the challenges women face in balancing career advancement with parenthood, a struggle mainly caused by societal norms and workplace structures.

In Wojcicki's case, her decision to step back from her role as CEO of YouTube emphasizes the challenges women face, even ones at the highest levels of leadership in the tech industry. Her experience exemplifies the urgent need to address the complex interplay between gender norms, workplace policies, and individual choices in navigating the intersectionality of the gender pay gap, confidence gap, and parenthood. Traditional gender norms often dictate that women bear the primary responsibility for caregiving, both within the family and in the workplace. As a result of this, women face challenges balancing career advancement with parenthood, leading to the perpetuation of the motherhood penalty. One of the primary reasons she took a step back as CEO was to take care of her family, which plays into the societal role women should have. Research indicates that approximately 50% of women leave their computing jobs by age 35, contrasting with their male counterparts, who tend to remain at work until retirement (Carson, 2020).

Another overarching actor relevant to this issue is workplace structures and policies that compound these challenges, as they often fail to accommodate the needs of working parents, particularly mothers. The absence of comprehensive parental leave policies, flexible work arrangements, and supportive childcare resources can intensify the motherhood penalty and limit career advancement opportunities for women.

Individual choices and behaviours also significantly contribute to gender disparities within the tech industry. Many factors, including societal expectations, workplace culture, and personal experiences, influence women's decision-making regarding career advancement, parenthood, and self-perception. The confidence gap reflects how internalized biases and imposter syndrome

impact women's career trajectories, while parenthood decisions are shaped by perceived trade-offs between family and career.

Conclusion

To conclude, it's evident that the overarching theme of gender disparity in the tech industry is a significant and multifaceted issue. Throughout this paper, I've focused on three key aspects: the gender pay gap, the confidence gap, and the impact of parenthood on women in the tech workplace. The gender pay gap remains a pressing challenge, reflecting broader societal inequalities. Despite efforts to address it, women continue to face barriers to equal pay and representation in leadership positions. The confidence gap presents another aspect of gender disparity, where societal expectations and workplace cultures contribute to women's lower levels of confidence and reluctance to pursue career opportunities. Additionally, parenthood disproportionately affects women in the tech industry, leading to career setbacks and the perpetuation of biases and stereotypes. The challenges of balancing work and family responsibilities further intensify gender inequalities.

Recognizing that these issues are interconnected and require comprehensive solutions is crucial. Addressing gender disparity in the tech industry demands collaborative efforts among key stakeholders such as the government, organizations, individuals, and companies. Moving forward, it's important to note that though slow progress has been made to address this issue, it's not something that I can propose a fix for because of how enormous the scope is. It is essential to continue exploring these challenges and slowly but surely identify effective strategies for promoting a balanced equilibrium.

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