Glass Ceiling- A Sociological Study of Women in Information Technology Sector in Gurugram

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Abstract:
The glass ceiling effect refers to the unseen, yet unbreachable barrier that keeps minorities and women from rising to the upper rungs of the corporate ladder, regardless of their qualifications or achievements. This study aims to quantify the existence and impact of the glass ceiling with a particular focus on the Information Technology sector. Using a sample of 225 women professionals from diverse industries in Gurugram, this research employs schedule interview method to analyse the extent of glass ceiling, the factors contributing to the glass ceiling and its implications on career progression. The findings reveal the extent to which women face glass ceiling effect, significant disparities in promotion rates, salary increments, and leadership opportunities between male and female employees, underscoring the need for policy interventions to foster gender equality in the workplace.

Keywords: Glass Ceiling, Gender Disparity, Career Progression, Information Technology Sector, Leadership Opportunities.

Introduction-
The Information Technology (IT) sector, a driving force of global innovation, has long been seen as a meritocratic environment where talent and hard work are the primary determinants of success. The sector's influence extends beyond its direct economic contributions, as IT plays a crucial role in advancing technological solutions to societal challenges, from healthcare to education to environmental sustainability. Despite its reputation as a meritocratic and progressive field, the IT sector is not immune to the pervasive issue of gender inequality. One of the most significant manifestations of this inequality is the "glass ceiling" effect, an invisible yet powerful barrier that prevents women from advancing to the highest levels of leadership within organizations.

The term "glass ceiling" was first coined in the 1980s to describe the unseen obstacles that hinder the career progression of women and minorities, particularly in corporate environments (Hymowitz & Schellhardt, 1986). The metaphor highlights the transparency of the barrier—women can see the top echelons of power, but they are systematically kept from reaching them. Despite decades of advocacy, policy interventions, and corporate diversity initiatives, the glass ceiling remains a persistent issue, particularly in male-dominated industries like IT. This paper seeks to explore the glass ceiling effect within the IT sector, examining the factors that contribute to its persistence and the impact it has on women's career trajectories.

The underrepresentation of women in leadership roles within the IT sector is well-documented. According to the National Centre for Women & Information Technology (NCWIT), women make up approximately 29% of the overall IT workforce, a figure that has remained relatively stagnant over the past decade (NCWIT, 2022). However, when it comes to leadership positions, the numbers are even more dismal. Women hold only 16% of C-level executive roles, 20% of vice president positions, and 23% of senior management roles (NCWIT, 2022). These statistics are not merely reflective of the challenges faced by individual women but are indicative of broader systemic issues within the industry.

Several factors contribute to the persistence of the glass ceiling in the IT sector. One significant factor is the deeply ingrained gender biases that pervade workplace cultures. These biases manifest in various forms, from subtle microaggressions to overt discrimination. For example, research shows that women in IT are often subject to stereotype threat, where they feel pressure to conform to gendered expectations, which can undermine their performance and career aspirations (Spencer et al., 1999). Additionally, the prevalence of "bro culture" in many tech companies creates environments that are unwelcoming or even hostile to women, further reinforcing the barriers to their advancement (Reagle, 2013).

Another critical factor is the lack of mentorship and sponsorship opportunities for women in IT. Studies have shown that mentorship is crucial for career advancement, providing guidance, support, and opportunities for professional growth (Ragins & Kram, 2007). However, women in IT are less likely to have access to mentors, particularly those in leadership positions who can advocate for them and help navigate the complexities of career progression. This lack of mentorship is often compounded by the limited representation of women in leadership roles, creating a cyclical problem where the scarcity of women leaders perpetuates the barriers to advancement for other women (Ibarra et al., 2010).

The gender pay gap also plays a significant role in perpetuating the glass ceiling. Despite performing similar roles, women in IT earn significantly less than their male counterparts. The NCWIT (2022) reports that women in leadership positions within the IT sector earn approximately 20% less than men in similar roles. This pay disparity not only reflects but also reinforces the systemic undervaluation of women's contributions in the workplace. The economic impact of this gap is substantial, as it

affects women's long-term financial security, including their ability to accumulate wealth and retirement savings (Blau & Kahn, 2017).

Societal norms and expectations also contribute to the underrepresentation of women in IT leadership. From an early age, girls are often discouraged from pursuing careers in STEM (Science, Technology, Engineering, and Mathematics) fields, leading to a smaller pool of women entering the IT workforce (Eccles, 2011). This issue is further exacerbated by the "leaky pipeline" phenomenon, where women who do enter the field are more likely to leave due to the hostile work environments, lack of advancement opportunities, and work-life balance challenges (Blickenstaff, 2005). The combination of these factors results in a significantly smaller number of women who are both qualified and willing to pursue leadership roles in IT.

The implications of the glass ceiling in the IT sector extend beyond the individual experiences of women. The underrepresentation of women in leadership roles limits the diversity of perspectives at the top levels of organizations, which can negatively impact decision-making and innovation. Research has consistently shown that diverse teams are more innovative and perform better than homogeneous teams (Page, 2007). In the rapidly evolving IT industry, where innovation is key to maintaining a competitive edge, the lack of gender diversity in leadership can hinder a company's ability to adapt and thrive in a global market.

Furthermore, the glass ceiling in IT contributes to broader societal inequalities. The IT sector is one of the most lucrative and influential industries in the world, and the exclusion of women from leadership roles exacerbates gender inequality in income, wealth, and power. As technology continues to shape the future of work, the underrepresentation of women in leadership positions also means that women's voices and perspectives are underrepresented in the development of the technologies that will define our future (Wajcman, 2004). This lack of representation can result in technology that fails to address, or even exacerbates, gender inequalities in society.

Breaking the glass ceiling in the IT sector requires a multifaceted approach. While diversity and inclusion initiatives are a step in the right direction, they must be accompanied by systemic changes that address the root causes of gender inequality. This includes implementing policies that promote work-life balance, such as flexible work arrangements and parental leave, which can help retain women in the workforce. Companies must also commit to creating inclusive workplace cultures where diversity is not only valued but actively promoted. This can be achieved through unconscious bias training, diversity audits, and the establishment of clear pathways for career advancement for women.

Mentorship and sponsorship programs are also essential for breaking the glass ceiling. Organizations should prioritize the development of mentorship programs that connect women with leaders who can provide guidance and advocate for their advancement. Additionally, addressing the gender pay gap through transparent pay practices and regular audits can help ensure that women are compensated fairly for their contributions, which is critical for their economic security and career satisfaction.

In conclusion, the glass ceiling and the persistence of gender disparities in leadership roles, remains a significant barrier to women's advancement in the IT sector. Despite various initiatives aimed at promoting diversity and inclusion, progress in breaking through the glass ceiling has been slow, particularly in the IT sector (Anita Borg Institute, 2019). Addressing these issues requires a comprehensive approach that tackles the cultural, structural, and societal factors that contribute to the glass ceiling. By doing so, the IT sector can not only promote gender equality but also enhance its capacity for innovation and global competitiveness.

Theoretical Foundation
This section provides an overview of the theoretical frameworks and how they relate to the persistence of the glass ceiling in IT.

Social Role Theory
Social Role Theory, developed by Eagly and Wood (2012), posits that gender differences in behaviour are a result of the societal roles that men and women are expected to fulfill. These roles are deeply ingrained in cultural norms and influence how individuals perceive themselves and others. In the workplace, these societal expectations contribute to the perception that men are more suited for leadership roles, while women are expected to occupy supportive or nurturing positions (Eagly & Wood, 2012). This theory helps explain why women in IT are often overlooked for leadership positions, as their behavior may be unconsciously evaluated against these gendered expectations.

The IT sector, which has traditionally been male-dominated, tends to reinforce these gendered roles through its organizational culture and practices. Women who do not conform to these expectations may face backlash or be perceived as less competent, further hindering their advancement (Koenig & Eagly, 2014). Social Role Theory suggests that breaking the glass ceiling requires a shift in these cultural norms, both within organizations and in society at large, to redefine the roles that men and women can occupy.

Tokenism Theory
Kanter's (1977) Tokenism Theory offers another perspective on the glass ceiling effect, particularly in environments where women are significantly underrepresented, such as in the IT sector. Tokenism occurs when a small number of individuals from a minority group, such as women in leadership roles, are included in a workplace. These "tokens" are highly visible and often subject to heightened scrutiny, which can lead to increased pressure and performance anxiety (Kanter, 1977). Additionally, tokens are often stereotyped, and their successes or failures are disproportionately attributed to their gender rather than their individual capabilities.

In the context of the glass ceiling in IT, Tokenism Theory suggests that the underrepresentation of women in leadership positions exacerbates the barriers they face. As tokens, women may be isolated and lack the support networks that are critical for career advancement. Moreover, their visibility means that any mistakes they make are more likely to be noticed and

criticized, reinforcing the stereotype that women are less capable leaders (Torchia, Calabrò, & Huse, 2011). To address the glass ceiling, organizations need to go beyond tokenism and ensure that women are represented in sufficient numbers at all levels, reducing the pressures associated with being a minority in the workplace.

Intersectionality Theory

Intersectionality Theory, first articulated by Crenshaw (1989), provides a framework for understanding how various forms of social stratification, such as race, gender, and class, intersect to create unique experiences of discrimination and disadvantage. This theory is particularly relevant to the study of the glass ceiling in IT, as it highlights how women's experiences in the workplace are shaped by multiple, overlapping identities.

For instance, women of color in the IT sector may face a "double bind" where they experience both gender and racial discrimination, making it even more difficult for them to break through the glass ceiling (Wingfield, 2013). Intersectionality Theory argues that efforts to address the glass ceiling must take into account these intersecting forms of discrimination and develop strategies that address the unique challenges faced by different groups of women (Cho, Crenshaw, & McCall, 2013). This approach calls for a more nuanced understanding of the glass ceiling, recognizing that not all women face the same barriers and that some may experience compounded disadvantages.

Human Capital Theory

Human Capital Theory suggests that individuals' economic value is determined by their education, skills, and experiences, which they can invest in to improve their productivity and career outcomes (Becker, 1993). In the context of the glass ceiling, this theory has been used to explain gender disparities in leadership roles by suggesting that women may lack the necessary human capital to advance to higher positions. However, this perspective has been criticized for failing to account for the structural and cultural barriers that prevent women from utilizing their human capital effectively.

Recent research has shown that even when women possess similar or superior qualifications compared to their male counterparts, they are still less likely to be promoted to leadership positions in the IT sector (Barbulescu & Bidwell, 2013). This indicates that the glass ceiling is not simply a result of differences in human capital but is also influenced by gender biases and organizational practices that undervalue women's contributions. Human Capital Theory, therefore, must be integrated with other theories, such as those addressing social and cultural factors, to provide a more comprehensive understanding of the glass ceiling effect.

Gendered Organization Theory

Acker's (1990) Gendered Organization Theory argues that organizations are inherently gendered, meaning that they are structured in ways that perpetuate gender inequalities. This theory suggests that the glass ceiling is not just a result of individual biases or behaviors but is embedded in the very design of organizational processes, policies, and practices. In the IT sector, this could manifest in various ways, such as recruitment practices that favor men, promotion criteria that are biased towards traditionally masculine traits, or work environments that are not conducive to work-life balance, which disproportionately affects women.

Gendered Organization Theory emphasizes the need for structural changes within organizations to dismantle the glass ceiling. This includes revising policies to ensure they are gender-neutral, implementing diversity and inclusion initiatives that address the root causes of inequality, and creating a workplace culture that values diverse perspectives (Britton, 2017). By recognizing and addressing the gendered nature of organizations, this theory provides a pathway for more effective interventions to promote gender equality in the workplace

Quantitative Data Analysis

The quantitative data analysis in this study focuses on the representation of women in IT leadership roles. According to a 2022 industry report, women account for only 16% of C-level executives in the IT sector, 20% of vice presidents, and 23% of senior managers (National Center for Women & Information Technology [NCWIT], 2022). Additionally, the gender pay gap remains a significant issue, with women earning 20% less than their male counterparts in similar roles (NCWIT, 2022).

Literature Review-

The glass ceiling effect in the IT sector has been well-documented, with numerous studies highlighting the systemic barriers faced by women. For instance, a study by the Anita Borg Institute (2019) found that women make up only 29% of the IT workforce, with an even smaller percentage in leadership roles. The study also highlighted the impact of workplace culture, noting that many women in IT face an environment that is unwelcoming or even hostile. Similarly, Smith (2015) argued that societal norms and gender stereotypes play a significant role in steering women away from STEM fields, thereby reducing their representation in IT leadership. Moreover, research by Carter and Silva (2010) emphasized the lack of mentorship opportunities as a critical barrier to women's advancement in the IT industry.

The concept of the glass ceiling has been extensively studied in recent years, particularly in the context of the Information Technology (IT) sector, where gender disparities in leadership are glaring. Despite the industry's rapid growth and reputation for innovation, the advancement of women into leadership roles remains limited, with a multitude of factors contributing to this persistent inequality.

Workplace Culture and Gender Bias

One of the most pervasive factors contributing to the glass ceiling in the IT sector is workplace culture. The IT industry has long been associated with a male-dominated culture that often marginalizes women. A study by Hewlett et al. (2014) found

that women in technology frequently experience "microaggressions," subtle forms of discrimination that undermine their contributions and hinder their career progression. These include being interrupted during meetings, having their ideas dismissed only to be later presented by male colleagues, and being excluded from key networking opportunities. Such experiences contribute to an environment where women are less likely to be recognized and promoted.

Additionally, gender biases are deeply entrenched in many IT workplaces. Research by Williams, Phillips, and Hall (2016) highlighted the impact of unconscious bias in performance evaluations, where women are often judged more harshly than their male counterparts. This bias is particularly evident in the emphasis on "cultural fit" during hiring and promotion decisions, which often favours the men who resemble the existing leadership, further entrenching the glass ceiling.

Lack of Mentorship and Sponsorship

The absence of adequate mentorship and sponsorship for women in IT is another critical factor perpetuating the glass ceiling. Mentorship provides essential guidance, support, and advocacy, which are crucial for career advancement. However, studies have shown that women in IT are less likely to receive mentorship compared to their male colleagues. According to a study by McKeen and Bujaki (2017), women in technology fields report fewer opportunities for mentorship and sponsorship, which limits their ability to navigate organizational hierarchies and advance into leadership roles.

Sponsorship, in particular, is a powerful tool for career advancement. Unlike mentors, who provide advice and guidance, sponsors actively advocate for their protégés, pushing for their promotion and ensuring they are visible in the organization. However, women in IT are significantly less likely to have sponsors, which severely limits their opportunities for advancement (Thomas et al., 2013). The lack of sponsorship is partly due to the scarcity of women in senior leadership positions, creating a cycle where the absence of women leaders perpetuates the glass ceiling for other women.

Structural Barriers and Organizational Practices

Structural barriers within organizations also play a significant role in maintaining the glass ceiling. Many companies in the IT sector lack clear pathways for career advancement, particularly for women. A study by Woolley and Malone (2011) found that women are often concentrated in lower-level positions with limited opportunities for upward mobility. This issue is compounded by organizational practices that do not adequately support work-life balance, such as inflexible work hours and insufficient parental leave policies, which disproportionately affect women who are often primary caregivers (Kossek, Su, & Wu, 2017).

Furthermore, the gender pay gap remains a significant structural barrier. Despite performing similar roles, women in IT earn less than their male counterparts, which not only reflects but also reinforces gender inequality within organizations. The pay disparity reduces the economic incentive for women to remain in the industry and pursue leadership roles, thus perpetuating the glass ceiling (Blau & Kahn, 2017).

Impact of Societal Norms and Stereotypes

Societal norms and stereotypes about gender and leadership continue to influence the underrepresentation of women in IT leadership. Traditional gender roles often dictate that women are less suited for leadership positions, particularly in technical fields like IT. These stereotypes are internalized by both men and women, affecting women's self-perception and their career aspirations (Cheryan et al., 2015). A study by Diekman et al. (2017) found that women are less likely to pursue leadership roles in IT due to societal expectations and the perception that these roles are incompatible with femininity.

Moreover, the "leaky pipeline" phenomenon, where women leave the IT field at higher rates than men, is closely linked to these societal norms and stereotypes. Research by Fouad and Singh (2016) highlighted that women in IT often face a hostile work environment, lack of support, and limited career prospects, leading many to exit the industry altogether. This attrition contributes to the persistent underrepresentation of women in leadership roles and perpetuates the glass ceiling.

OBJECTIVES OF THE STUDY:

These prime objectives of the present study are as follows:
1. To assess the demographic profile of the respondents.
2. To measure the extent of glass ceiling in IT sector with special reference to Gurugram, Haryana (NCR Region).
3. To identify the key factors contributing to the glass ceiling effect in the IT sector.

Research Methodology:

The present study adopts a descriptive research design to explore the impact of the glass ceiling in the information technology (IT) sector, focusing specifically on women employees in Gurugram, Haryana. The target population for this study includes women employees working in MNCs located in Gurugram. The sample is drawn from a diverse range of industries within these MNCs to ensure generalizability of the findings. To ensure a representative sample, a stratified random sampling technique is used. The strata are based on organizational levels (e.g., junior, middle, senior management) and departments (e.g., IT, HR, finance). This approach ensures that the sample reflects the diversity within the organizations and captures variations in experiences across different levels and functions. The study sample was randomly selected, comprising 225 respondents from the broader population of IT sector employees in these areas. Initially, a structured questionnaire was distributed to 310 employees, but complete responses were received from only 225 participants. To ensure the relevance of the data, a judgmental sampling technique was employed, targeting individuals likely to provide insightful responses on the subject. The questionnaire consisted of 24 statements, categorized into two key areas: ten items assessing the extent of the glass ceiling and fourteen items identifying obstacles to women's career advancement in the IT sector. Two primary variables

were examined in this study: the glass ceiling and the obstacles hindering women's career progression. These variables were measured using a five-point Likert scale. The scale ranged from 1 (to no extent) to 5 (to a great extent).

Analysis:
Demographic profile:
Data collection for this study was conducted through a survey questionnaire targeted at employees within the IT sector in Gurugram, Haryana. The final sample size for the study consisted of responses from 225 participants, which were subsequently used for data analysis. The demographic variables considered in the study includes age, the marital status, educational qualifications, level of income, current position, and work experience. Table 1 provides an overview of the respondent's profiles, with "N" denoting the total sample size.

Table 1- Demographic details of the respondents

Age group (in years)	Frequency (%)	Level of income (in rupees)	Frequency (%)
18-20	9 (4)	0 to 5 lakhs	28 (12.44)
21-30	92 (40.88)	5.1-10 lakhs	78 (34.66)
31-40	62 (27.55)	10.1-15 lakhs	65 (28.88)
41-50	54 (24)	15.1-20 lakhs	39 (17.33)
More than 50	8 (3.55)	20.1 and above	15 (6.66)
Marital Status	**Frequency (%)**	**Education qualification**	**Frequency (%)**
Single	105 (46.66)	Graduation	98 (43.55)
Married	88 (39.11)	Post graduation	68 (30.22)
Window	15 (6.66)	Doctorate	12 (5.33)
Divorce	17 (7.55)	Diploma	47 (20.88)

Table 1 represents that majority of the respondents are from the age group of 21-30 years followed by 31-40 years, 41-50 years, 18-20 years and more than 50 years respectively. The marital status data reflects that 46.66% of the respondents are singles followed by 39.11 of the respondents being married and out of the remaining, 7.55% are divorced and 6.66% are widowed. The educational qualification projects that 43.55% of the working women possess graduation degree followed by 30.22% of the respondent have Post graduation degree followed by diploma 20.88% and doctorate with 5.33%. When we analyze the income of the respondents, we found that 34.66% of the respondents have salary 5.1-10 lakhs and only 6.66 of the women have salary above 20.1 lakhs.

Extent of Glass Ceiling
The extent of glass ceiling in IT sector in Gurugram is measured using a five level Likert scale that ranges from to no extent to a great extent. It depends on the respondents that how intensely they felt the extent of glass ceiling in their career and organization.

Table 2- Extent of glass ceiling

Scale	Frequency	Percentage
To no extent	38	16.88
To a little extent	91	40.44
To moderate extent	57	25.33
To a great extent	28	12.44
To a very great extent	11	4.88
Total	225	100

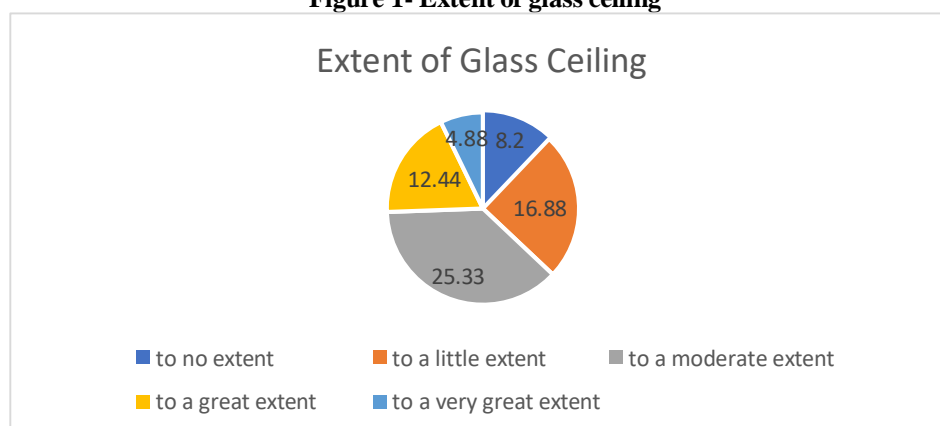**Figure 1- Extent of glass ceiling**

Extent of Glass Ceiling

Table 2 and figure 1 represents the extent of glass ceiling in IT sector. The figure above illustrates the perceived extent of the glass ceiling within organizations using percentage data. According to the respondents, 16.88% believe there is no glass ceiling in their organizations. Meanwhile, 40.44% of respondents feel that there is a slight presence of a glass ceiling, while 25.33% think that the glass ceiling exists to a moderate extent within their organizations. Furthermore, 12.44% of respondents acknowledged a significant presence of the glass ceiling, and only 4.88% stated that it exists to a very great extent in their organizations.

Factors contributing to the Glass Ceiling Effect:

It is interesting to note that even if women will try to break the glass ceiling they will have to deal with the psychological, cultural and structural factors that are also based on three dimensions- gender bias, family support and organizational structure. There are several factors responsible for the glass ceiling in IT sector that includes organization climate, mentorship, gender bias, family support, societal norms and stereotypes. Despite initiatives aimed at increasing diversity and inclusion, the glass ceiling continues to pose a significant challenge in the IT industry. The data is collected with the help of a five-point Likert scale.

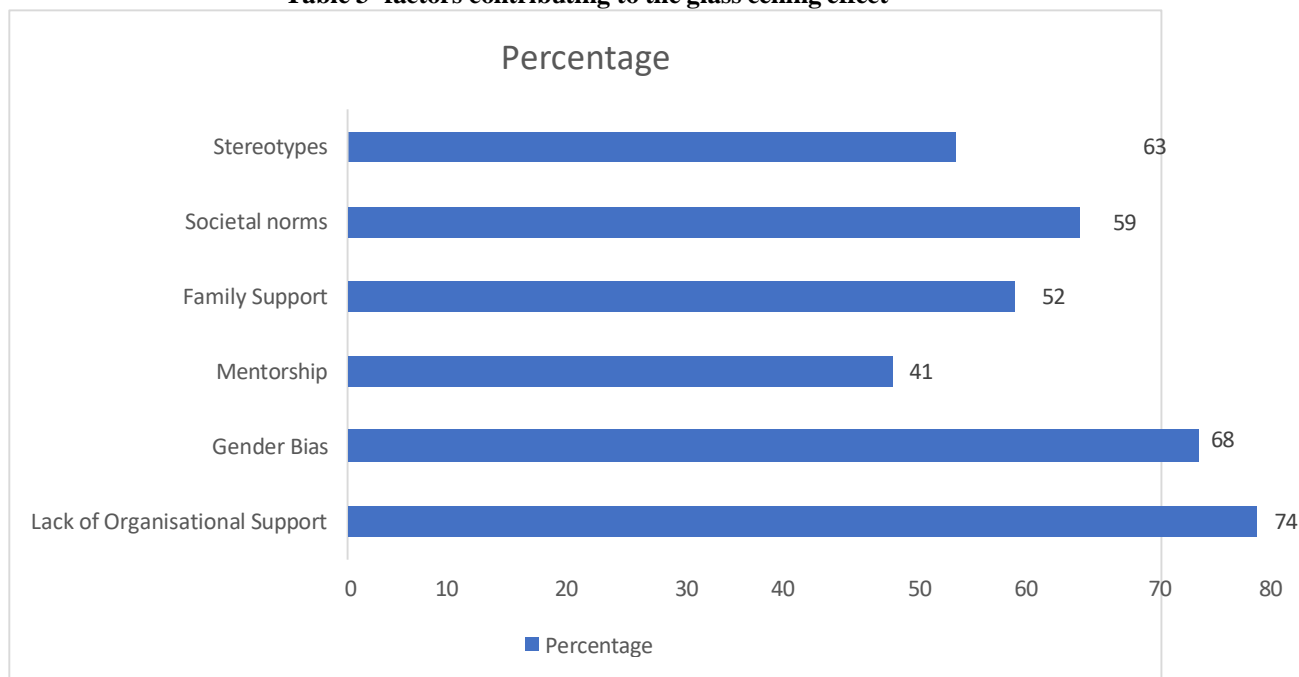**Table 3- factors contributing to the glass ceiling effect**

Table 3 represents that the majority of the respondents (74%) believed that women lack organizational support that leads to hinderance to their career growth, followed by the gender bias (68%) which usually and stereotypes (63%). The societal norms where women are expected to handle family and work leading to extra stress on them also contribute to the glass ceiling. Lack of support from family is another factor where they are expected to be back home on time and manage the household chores. 52% of the respondents considers this as a contributing factor for the same. Other factors also included lack of mentorship for women in IT sector which is also a contributing factor for gender bias in IT sector.

Conclusion-

The glass ceiling remains a significant barrier to women's advancement in the IT sector. Despite the industry's reputation for innovation, the persistence of gender disparities in leadership roles reveals deep-rooted systemic issues. The factors contributing to the glass ceiling include not only organizational biases and a lack of support for women in their career progression but also broader societal norms that discourage women from pursuing careers in STEM. While diversity and inclusion initiatives have made some progress, they have not yet been sufficient to dismantle the glass ceiling. To achieve real change, the IT industry must adopt more comprehensive strategies that address the root causes of these disparities. This includes fostering inclusive workplace cultures, implementing policies that support work-life balance, and ensuring equal opportunities for mentorship and career development. Only through such measures can the glass ceiling in the IT sector be shattered, allowing women to achieve their full potential.

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