Factors Affecting Women Employment in Information Technology Industry: A Study in Global Context

M. Ranasinghe*, S.G. Ashokkumar, S. Vishara, S. De Silva, N. Karunarathna and N. Kalansuriya

*SLIIT Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka,
bm21519390@my.sliit.lk

Abstract - *The global education sector is witnessing a surge in women pursuing Science, Technology, Engineering, and Mathematics (STEM) degrees, but the gender gap in employment of the information technology (IT) industry remains significant. This difference stems from several sociocultural elements, such as gender roles, norms, beliefs, and attitudes. This study aims to analyse the factors that affect women's career opportunities in IT sector by presenting its findings in an international setting. This study thoroughly examines the barriers that prevent women from entering and rising through the ranks of the IT sector. Due to the above-mentioned gender inequality, the underrepresentation of women in the IT sector also declines the industry access to tremendous talent and a variety of viewpoints. This research aims to assist the growth of a more equitable and inclusive IT sector by addressing the obstacles experienced by women in IT professions and creating an atmosphere that empowers women's involvement and leadership. Following chapters would comprehensively discuss over the globally identified factors that are affecting women employment in the IT sector and social aspects on it. Policymakers, business executives, academic institutions, and respective organizations may all benefit greatly from the findings of this study, which can support to develop programs and policies focused at removing obstacles to women's employment and their career progression in the IT industry. The ultimate goal of this study is to addresses the factors that are affecting women employment in the IT sector with findings from global studies and encourage to build a more inclusive and varied workforce, which can stimulate economic development, productivity, and creativity in IT sector.*

Keywords: Global, IT Industry, Women Employment

I. INTRODUCTION

Numerous variables influence employment in the IT sector, from personal incentives to more general technical and economic trends. One of the main factors influencing employment in the IT sector is globalization (Ossai, 2012). The rapid expansion of the software industry and the rising need for IT solutions in a variety of industries have both boosted work prospects. In addition, the demand for qualified IT specialists has been further stimulated by cutting-edge technologies like blockchain, artificial intelligence, and the Internet of Things (IoT). An innovative and risk-taking start-up culture has been fostered by the IT industry. People who want to develop new goods or services have been drawn to this entrepreneurial atmosphere, especially younger people (Gonzalez, 2023). The sector has become a desirable location for individuals looking to make a lasting impression due to its emphasis on innovation and potential for disruption.

In addition, the IT industry has embraced remote work and international cooperation, eradicated geographical constraints, and increased job prospects. But as businesses look for more affordable options, globalization has also resulted in outsourcing and offshore development work, which has an impact on employment trends. The ability to collaborate and communicate effectively has become crucial for overcoming these geographic barriers. One of the most important factors influencing employment in the IT business is technical literacy (Masero, 2023). High levels of technical competence are

required in this field, including excellent problem-solving, coding, and programming abilities. Those who can adjust to new tools, languages, and methods are more likely to succeed in this fast-moving field, where keeping up with technological developments is critical. Obtaining a formal education in computer science, software engineering, or similar subjects can provide a strong basis for entering the IT sector. In industries where males predominate, women confront tremendous obstacles in achieving their goals of becoming leaders.

Organizations have implemented regulations and procedures that should help women advance but continue to encounter persistent barriers due to severely gendered customs and traditions (O'Brien et al., 2023). As the basic example that highlight the gender gap in the industry would be, women comprise 25.1% of the 329,559 software engineers in the United States, while women still only hold around a quarter of software engineering occupations, despite an increase in the overall proportion of women in these roles (Hubbert, 2023). A diverse workforce, that is, made up of people from all genders and ethnic backgrounds can bring new ideas and views to the sector. As awareness of the gender disparity intensifies, opportunities emerge to bridge this gap and unlock the full potential of a diverse workforce (Rastogi et al. 2020). Gender and cultural diversity can impact employment. A more diverse industry is likely to benefit from a wider range of perspectives and ideas. Therefore, considering the global IT industry, various studies have been carried out to identify the different factors affecting female employment in the IT sector that causes gender gap. Current study focusses on all the existing literature that have written on the subjected area. The study aimed to recognize the variations of the findings from different countries, considering the social norms of each country as well. Current study provides a comprehensive systematic literature review on factors affecting women employment in IT sector, presenting as separate findings based on countries. The study objected a present as a single source document that provides all the aspects of the identified gender gap in the industry.

II. METHODOLOGY

This systematic review of literature is based on the content inquiry as the approach to gather the state of understanding in the selected areas of women workforce, IT sector, influencing factors of women employment and the employment of IT sector. Current study provides a structured approach to gathering and analysing information, ensuring that the review is objective, unbiased, and representative of the available literature. The initial step of this analysis was to search for the articles relevant to the study. Web search allowed accessing many research articles in the said study area from different academic databases, such as Science Direct, Emerald insight, Sage Journals and Academia. At first, 67 articles were retrieved based on their title, abstract and keywords which includes Women workforce, IT sector and Employment. Each paper was inspected in- depth to stamp out the duplicate and irrelevant articles to the study, resulting 32 articles for further screening. The unevenness caused in comparing the articles were discussed by the researcher's considering appropriateness to the women workforce, IT sector, influencing factors of women employment and the employment of IT sector were considered for the analysis. The references section of this paper clearly states the articles reviewed in this analysis. Even though each article was dissected in-depth, the researchers assume that this analysis would deliver the actual gap of the knowledge areas uncovered by the previous research related to this study without lassitude. Data extraction was done selected studies based on their objectives, methods, findings, and conclusions. A comprehensive literature

review was conducted related to the study area with the aim of emphasizing the gap of knowledge uncovered. The selected articles of this analysis belong to the period from 2008 to 2024 considering the knowledge updates across the globe and relevancy. Reviews were done based on the countries as the current study seeks on identifying the patterns of the collected articles based on the country.

III. MAIN RESULTS OF THE REVIEWED STUDIES

All the articles taken into reflect the analysis are briefly discussed under the following sections (Region wise).

A. Studies Conducted in India

To identify the critical elements influencing women's workforce participation, the corpus of research on women's employment in the worldwide IT sector has used both qualitative and quantitative methodologies. These studies, especially the ones carried out in the Indian setting, have highlighted the potential and problems encountered by women in this fast-paced industry while also shedding light on the need of inclusive practices and supporting work environments.

One of the primary determinants of women's representation in the Indian IT industry, according to the study by Bhattacharjee and Dwivedi (2023) is the availability of work-life balance. People can successfully handle tasks from both domains without sacrificing either when personal commitments or domestic responsibilities do not conflict with the demands of professional jobs. Conversely, the absence of work-life balance, known as work-life conflict, tends to disproportionately affect women due to their greater commitments and responsibilities related to domestic activities, leading to vertical segregation within the workplace.

Another key factor influencing female employment in the IT sector, as revealed by Mishra et al. (2022) is workplace culture. The results of the study show that the percentage of women working in the IT sector is significantly influenced by workplace culture. Even though women are acknowledged as being just as competent as men, the research indicates that promoting a work environment that supports positive gender policies and promotes a complementary work ethic between the sexes can help increase the number of women entering the workforce and advancing their careers in the IT sector. These kinds of regulations would make it easier for women to take on leadership roles, manage teams, and participate in networking events all essential for their professional growth.

Samineni and Reddy (2013) did a multivariate analysis of survey data indicates that organizations can benefit from the development and promotion of women in leadership positions. The report goes on to imply that programs for training and development might strengthen and improve the leadership qualities and proactive participation of female workers. According to Mehta (2016) study explores the various socioeconomic determinants that influence women's employment in India's Information and Communications Technology (ICT) industry. The report highlights that women's engagement in this business is mostly driven by healthy workplace cultures and work-life balance. The report also notes that, at the time it was conducted, women's working circumstances in the ICT sector were still not optimal. This thorough study offers a nuanced view of the difficulties and potential solutions facing female employees in India's ICT sector by utilizing both qualitative and quantitative data.

The study done by Aiswarya and Ramasundaram (2012) utilized the Structural Equation Modelling (SEM), demonstrates that the work-life conflict experienced by women employees in the IT industry is significantly influenced by the organizational environment. In particular, the research shows that the organizational environment has a significant impact on the behaviours and strain factors associated with work-life conflict. These findings highlight how important company culture is in influencing how women in the IT industry manage their personal and professional obligations. The study's findings offer insightful direction to companies looking to help female workers' work-life balance and create a positive work environment.

In Ravindran and Baral (2014) study, the author highlights the common phenomenon of Indian women taking career breaks and subsequently attempting to re-enter the workforce, often facing interrupted career paths. According to the research, this is a result of the expectations and societal conventions that women must deal with in their cultural setting. Interestingly, the study highlights how important work-family balance, organizational justice, inclusive and varied environments, and organizational policies are in shaping the experiences of women returning to the IT industry. This extensive study offers vital insights into the difficulties and roadblocks women have while attempting to reintegrate into the IT field a subject that has not gotten enough attention in the larger body of research. The results of the study can help design focused interventions and initiatives that encourage more diversity and gender equality in the IT sector by making the workplace more welcoming and encouraging for women employees.

Thangavel and Lavanya (2012) underscore the importance of overcoming the barriers that women encounter for companies to successfully develop and retain female talent within their workforce. The study's survey component highlights how important it is for managers to actively support women's advancement into leadership positions in the IT sector, as well as male coworkers' engagement. The report also emphasizes how important it is to put in place work-life policies that are successful in creating a culture that appreciates gender diversity and inclusion. Companies may provide a more conducive atmosphere for women professionals to grow and develop by recognizing and addressing the obstacles they confront.

B. Studies Conducted in United States

The underrepresentation of women in the IT industry in the United States (US) has prompted several study endeavours. These studies have used both quantitative and qualitative methodologies to illustrate the obstacles facing women seeking work in this quickly changing field.

For instance, Shen (2024) examines the connection between married women's persistence in STEM or STEM-related careers and the professional and educational backgrounds of their spouses. The study's conclusions show that having kids has an impact on how women and their spouses engage in STEM or related industries, and that there is a favourable relationship between women who continue to work in STEM fields and their spouses' career similarity. However, the study's conclusions about the significance of shared goals and spousal support in keeping women in STEM fields provide insightful direction for future investigations and the design of focused interventions to foster an environment that is more accepting and encouraging for women in these traditionally male-dominated fields.

Similarly, Adya (2008) investigated the effects of work alienation on IT professionals' intentions to quit and their career trajectories, comparing the incidence of

job alienation between Asian and American women employed in the IT sector. Subsequent investigations may build upon these results by integrating qualitative techniques, such case studies, or in-depth interviews, to get a more thorough comprehension of the interaction of elements causing job alienation among women in the IT sector. Extending the range to encompass a wider range of demographic attributes may moreover augment the applicability and efficaciousness of the research findings.

In addition, Schultz and Adams (2022) study examines the levels of inclusion and work satisfaction among male and female IT professionals, exploring issues such as prejudice, loneliness, and lack of support that differentially impact individuals based on gender. The study's emphasis to gender differences in job satisfaction and inclusion, along with its multifaceted analysis, are noteworthy qualities. Furthermore, the study's omission to look at the interactions between gender and other factors like ethnicity, age, or sexual orientation may have limited our comprehension of the range of experiences that people have in the IT sector. However, the study sheds light on the difficulties encountered by women working in the IT industry and emphasizes the necessity of concerted efforts from businesses and academic institutions to resolve these problems and advance more diversity and inclusion in the field.

Moreover, the study conducted by Singh (2019) delves into the obstacles encountered by women in Open-Source Software (OSS) communities and the characteristics of successful women in this field. The results indicate that to encourage more women to join in and contribute to OSS efforts, networking opportunities, mentorship, and a friendly community environment are essential. The study done by Zhu et al. (2023) provides a novel understanding of how American women enter the field of computer science by describing the types and characteristics of alternative career trajectories they choose. The researchers gathered information on women's career trajectories in computing by text analysis on openly available employment profiles. This provided insights into the several non-traditional paths that women pursue, including master's degree programs, boot camps, and online self-study tools.

Although the study's only dependence on publicly accessible job profiles could compromise the comprehensiveness and precision of the information, its focus on the significance of other routes in fostering inclusion and diversity within the IT sector has significant ramifications. To obtain a more thorough picture of women's career transitions in computing, future study should expand on these findings by combining additional data sources, such as surveys or interviews. The study's conclusions can direct the creation of laws and initiatives that give women more equitable and accessible access to computer-related careers, therefore fostering a more varied and representative workforce in the IT sector.

C. *Studies Conducted in Australia*

The underrepresentation of women in Australia's IT sector has led to studies that use both quantitative and qualitative techniques to pinpoint the obstacles that prevent women from pursuing careers in this important field.

Specifically, Timms et al. (2008) examines the factors that affect women's comfort or discomfort in Australia's ICT industry. Using a combination of principal component analysis, K-means cluster analysis, and replies from Likert-scale surveys, the researchers used a mixed-methods technique to identify four separate groups of respondents. The study draws attention to the many work cultures that exist in the ICT industry and how these cultures may be detrimental to the mental health of women. In

contrast to the optimistic goals of women in the ICT sector who want to fulfil and socially significant jobs, the poll also shows that different groups of women had varying degrees of agreement and satisfaction with industry stereotypes.

According to Byrne and Staehr (2005) study, on the other hand, utilizes census data from 1996 and 2001 to compare gender differences in participation rates, pay equity, and representation in senior management positions, thereby examining the status of women in Australia's IT industry. Additionally, the study provides a more nuanced view on the difficulties and variances faced by women in a variety of IT occupations by concentrating on certain minor IT occupational categories using the Australian Standard Classification of Occupations (ASCO). The study's findings highlight the critical need for continuous efforts to address the enduring problems that Australian women in the IT sector face, such as uneven pay and a dearth of representation in senior management roles. These issues underscore the necessity of taking proactive steps to close the industry's pay gap and boost the number of women in higher-level positions.

D. Studies Conducted in United Arab Emirates

The United Arab Emirates (UAE) has a rapidly growing IT sector. Still, there are not enough women in this fascinating field. To understand this disparity and promote greater female engagement, researchers in the UAE have conducted several studies looking at the crucial factors affecting women's decisions to pursue and stay working in IT sectors. These studies blend qualitative and quantitative methods to offer a comprehensive understanding of the issue.

A study conducted by Marzouqi and Forster (2011) examines the challenges experienced by Emirati women in the IT profession. The results align with previous studies, emphasizing the substantial obstacles that social, familial, and cultural issues provide to women aspiring to pursue careers in information technology. Furthermore, examining the interactions between gender and other factors like sexual orientation, class, and race may be able to provide light on the complicated and different realities that women in the IT sector must deal with.

In a complementary study, Walsh et al. (2020) examine the factors influencing Emirati women's employment choices in the technology industry using in-depth interviews and the Interpretative Phenomenological Analysis (IPA) technique. The findings show that a variety of variables influence Emirati women's decisions to pursue IT jobs, including the national backdrop, the importance of family, the need to be seen as role models, the reputation of the organization, and governmental laws. A longer-term perspective may provide a deeper comprehension of these variables' dynamic character. Additionally, the study's emphasis on certain contextual factors emphasizes how critical it is to promote female role models and give Emirati women chances in STEM fields to inspire the next generation of Emirati women to seek jobs in technology.

E. Studies conducted in Finland

Finland is a trailblazer in gender equality, yet it still struggles to attract and retain women in the IT sector. To understand these challenges, researchers in Finland have conducted a few studies utilizing both qualitative and quantitative methods. These studies investigate the factors influencing women's participation in Finland's IT industry.

One such study by Vainionpaa et al. (2020) combines a narrative literature review with an exploratory interview technique, engaging ten female students and six guidance counsellors from senior high schools in Finland. Using the nexus analysis theoretical

framework, the study offers a thorough method for looking at this complicated problem from several angles. The results imply that women's marginalization in the IT industry is caused by a variety of issues, such as cultural norms, presumptions and biases, a lack of good role models and media representation, and unintentional exclusion by others. The study deftly demonstrates how the underrepresentation of women in IT is sustained by discriminatory practices in curriculum, study guidance, and online resources, in addition to a lack of industry expertise and training.

Complementing this study, Kovaleva et al. (2023) explored the barriers that women encounter in the technology sector and the factors that influence their decisions to start their own businesses in this field. The researchers polled and spoke with women who were interested in technology and female entrepreneurs using a mixed-methods approach. The study found that, in addition to universal interests and difficulties, women also encounter obstacles unique to their gender, such as the influence of stereotypes and a dearth of role models. The report emphasizes the value of inclusive workplaces and role models in boosting the engagement of women in technology entrepreneurship. However, this study adds to our knowledge of the underrepresentation of women in digital entrepreneurship and offers useful information that policymakers and corporations may use to develop programs that inspire more women to launch their own companies in this exciting sector.

F. Studies conducted in South Africa

In South Africa, women's underrepresentation in the IT sector is a persistent issue. Using both qualitative and quantitative methods, research has examined several factors influencing female employment in this field to understand the landscape.

Pretorius and Villiers (2010) investigated the variables that attract South African women to the IT sector, as well as the barriers that prevent them from entering or staying in this profession. An anonymous online survey with both closed- and open-ended questions was used by the research to collect qualitative information from 48 women who are currently working in the South African IT sector. Using a critical interpretive approach, the research analysed the data and identified a few socially constructed themes that offered a framework for understanding the obstacles faced by women in the IT industry, specifically in the setting of South Africa. This study bridges a substantial information gap about women's involvement in the IT sector. The study adds to the body of knowledge on luring and keeping women in the quickly growing field of information technology by highlighting the significance of comprehending how gender differences are socially constructed and how work and home environments affect women's participation in the IT industry.

Calitz et al. (2020) examined the ways in which culture influences South African women's decisions to pursue careers in the IT sector. The study's exploratory character paves the way for other research initiatives, such digging further into the influence of culture on women's career choices in IT and contrasting the findings with those from other nations. This would give a more thorough knowledge of how cultural factors affect women's work decisions. Further research endeavours might broaden the focus by exploring the impact of culture on women's career decisions in many industries and countries, providing a more comprehensive worldwide outlook on the subject and augmenting our comprehension of the ways in which cultural elements influence women's professional decisions.

The study by Munyeka & Maharaj (2023) investigated the challenges encountered by South African women employed in the ICT industry, with a focus on work-life balance concerns. Semi-structured interviews were conducted with sixty participants as part of the study's qualitative approach, and themes and patterns were found via thematic analysis of the data collected. The findings show the tremendous obstacles these women had to overcome to reconcile their responsibilities to their families and their jobs, including extended workdays and excessive workloads that had a detrimental effect on both their personal and professional lives. The study recommended that further research be done on the challenges women in diverse STEM fields experience in finding a work-life balance to obtain a more thorough grasp of the problem.

Overall, by highlighting the difficulties faced by women in industries with a high concentration of males and highlighting the need for more parity to support women in balancing their commitments at home and at work, this study adds to the body of knowledge.

G. Studies conducted in United Kingdom

United Kingdom (UK) have examined the ongoing issue of the gender gap in the UK's IT industry. By using both qualitative and quantitative research methods, researchers have attempted to explore the barriers that prevent women from entering this field of work and have illuminated the experiences of women employed in the UK's IT sector.

Kirton and Robertson (2018) employed a qualitative research method, utilizing focus groups and interviews to explore the perspectives of women working in the IT industry. The survey found that discrimination based on gender, uneven compensation, and limited career growth prospects are some of the major obstacles that women face in IT professions. It was discovered that there are several prejudices and preconceptions against women working in IT, such as the idea that they lack the technical know-how of their male colleagues or that they are assigned tasks that are not within the purview of their employment. These attitudes create a hostile work atmosphere and hinder women's advancement in the industry. The poll also showed that women find it difficult to grow in their jobs since they frequently get less money than males in IT roles with comparable training and experience. Moreover, a dearth of networking opportunities, mentorship programs, or senior female role models inside firms can imprison women in IT careers in their existing roles with little chance of advancement. The research underscores the imperative nature of tackling these concerns and advancing gender parity and inclusivity in the workplace. It stresses the need of organizations adopting proactive measures to cultivate an inclusive culture that fosters and supports women employed in the IT sector.

The research conducted by Panteli et al. (2017) examined the position of women in the UK IT industry, analysing the obstacles faced by women in this field and the gender occupational segregation prevalent in this sector. Using a mixed-methods approach, the study combined case study research with national surveys to yield insightful data on topics including income gaps, few possibilities for career promotion, and the effect of part-time work on women's advancement in the IT sector. The study's validity and trustworthiness are strengthened by its comprehensive methodology, and its conclusions have relevance for organizations that support gender equality and inclusion. A more comprehensive knowledge of gender disparities and organizational practices throughout the sector would have been possible with a bigger and more varied sample. However, the research provides insightful analysis and useful suggestions for improving gender parity

in the UK IT sector, highlighting the need for additional efforts to overcome gender gaps and provide women fair chances in this quickly developing field.

H. Studies conducted in Sri Lanka

Sri Lanka's IT industry, like many others throughout the globe, has a gender disparity in its workforce. To address this discrepancy, researchers have turned inward and are conducting studies to identify the factors preventing women from participating in Sri Lanka's IT industry. In this study, the challenges faced by women in this field are investigated via a combination of qualitative and quantitative research methods.

A study by Adikaram and Wijayawardena (2015) provided a thorough examination of the challenges faced by female IT professionals working in predominantly male project teams. In line with Kanter's Theory of Group Proportions, the research emphasized concerns such gender-role stereotyping, role entrapment, and the necessity for women to exhibit their technical and leadership skills. The study highlights the need of fostering diverse and inclusive work cultures as well as the necessity for more investigation into the larger socioeconomic and cultural reasons that lead to women's marginalization in the IT industry.

Semasinghe (2017) study for instance, identified and investigated the local barriers that prevent Sri Lankan women from entering the workforce and examined whether these barriers differ across industries. Using a multivariate regression model, a U-hypothesis, and a mixed-methods approach, the study discovered that women's labour force participation is influenced by a few variables, including education level, fertility rate, urbanization, Gross Domestic Product (GDP) growth rate, female unemployment rate, and male labour force participation rate. While the study offered insightful information, it missed crucial components that might seriously impede women's entry into the profession, such as childcare facilities, cultural and societal standards, and family duties. Furthermore, it is possible that the dependence on survey data obscured the subtleties and complexity of the variables influencing women's involvement in the labour force. To provide policymakers and stakeholders with a more comprehensive understanding of the issues and to facilitate the development of effective strategies to empower and encourage women's involvement in the workforce.

De Alwis and Bombuwela (2013) investigated the impact of the glass ceiling effect on women's advancement in the workforce within Sri Lanka's private sector companies. The findings showed that the glass ceiling effect, which results in women making up a tiny portion of the workforce and being underrepresented in leadership roles, severely impedes women's ability to advance professionally. The survey found that the primary obstacles to women's job progression are individual, organizational, and cultural issues. However, the results have significant ramifications for businesses and policymakers in Sri Lanka. They underscore the necessity of policies and initiatives that promote diversity and gender equality in the workplace to counteract the "glass ceiling" effect. Examples of these initiatives include enacting anti-discrimination laws, providing networking and mentorship opportunities, and confronting gender-based prejudices.

The study of Wijayawardena et al. (2017) sought to bridge the gap in the literature on women in the IT sector in developing countries by examining the gendered practices employed by female engineers in gender-atypical IT firms in Sri Lanka. By utilizing the work embeddedness theoretical framework, the qualitative investigation yielded significant insights into the obstacles encountered by female employees in work settings that challenge conventional gender roles. The results highlight the challenges faced by

women in situations where their gender is not the norm by illuminating how female engineers in Sri Lanka's IT sector view their career as masculine and compromise their gender identities to fit in. The findings emphasize the necessity of doing further study in this field and the significance of putting policies and initiatives in place that aid in the retention of women in the IT sector.

IV. DISCUSSION

Gender gap in employment changes from region to region. Developed economies tend to have a smaller gap compared to developing economies. The gender gap in IT sector employment is a complex issue with small regional variations. While progress has been made globally, there's still a long way to go to achieve true gender equality in the workplace, especially IT industry. Below mentioned are the identified highlighting factors that are affecting for the women employment in IT sector. After conducting a thorough literature review and analysing data from several reputable sources, this study has determined eight key element factors that significantly influence women's employment in the IT sector. Which include work-life balance, flexible work policies, workplace culture, hiring biases, women in leadership, access to mentors networking opportunities, women's empowerment. Therefore policymakers, business executives, and other stakeholders can design intensive programs and strategies to advance gender equality, give women more power, and foster an environment that is welcoming and encouraging for them to succeed in the IT workforce, by having a thorough understanding of the complex interactions between cultural, social, and economic factors.

Even though most studies offers both qualitative and quantitative insightful information about these women's lived experiences, the study's shortcomings such as its small sample size and narrow scope can be recognized. To further understanding of women's experiences in the IT industry, future research endeavours should expand upon these findings by utilizing a wider range of comprehensive and multifaceted research methodologies, such as greater sample sizes and more expansive scopes. Also, future research can improve the comprehension of the diverse possibilities and problems encountered by women in this quickly developing profession by taking a more thorough and intersectional approach to the study of women in this field. Also, there is an absence of raw data for cross-tabulations and a comprehensive analysis of the findings can be identified as well, limits the research's potential scope of discoveries. Furthermore, certain restrictions on sample size and case study component representation may make the findings less generalizable to the larger IT industry. Table 1 provides a summary of findings of the reviewed articles for the current study.

Table 1. Findings based on each Country

Country	Time period	Findings	Referred studies
India	2012-2024	- Work-life balance - Welcoming workplace environment - Supportive corporate guidelines	Bhattacharjee & Dwivedi, (2023), Mishra et al. (2022), Samineni & Reddy (2013), Mehta (2016), Aiswarya & Ramasundaram (2012), Ravindran & Baral (2014) and Thangavel & Lavanya (2012)
United States of America	2008-2024	- Work-life balance - Inclusive workplaces - Flexible career paths - Spousal support	Shen (2024), Adya (2008), Schultz & Adams (2022), Singh (2019) and Zhu et al. (2023)
Australia	2005-2008	- Workplace culture - Industry biases about gender suitability - Persistent gender gaps in participation - Leadership roles	Timms et al. (2008) and Byrne & Staehr (2005)
United Arab Emirates	2011-2020	- Cultural expectations - Family commitments - Lack of visible female leaders - Educational - Networking opportunities	Marzouqi & Forster (2011) and Walsh et al. (2020)
Finland	2020-2022	- Deep-rooted cultural norms - Positive role models - Fostering inclusive workplaces - Networking opportunities	Vainionpaa et al. (2020) and Kovaleva et al. (2023)
South Africa and the United Kingdom	2017-2023	- Human behaviours - Organization cultures - Societal factors	Pretorius & Villiers (2010), Calitz et al. (2020), Munyeka & Maharaj (2023), Kirton & Robertson (2018) and Panteli et al. (2017)
Sri Lanka	2013-2017	- Personal factors - Institutional factors - Cultural factors	Adikaram & Wijayawardena (2015), Semasinghe (2017), De

Country	Time period	Findings	Referred studies
			Alwis & Bombuwela, (2013) and Wijayawardena et al. (2017).

Source: Authors' compilation.

IV. DISCUSSION

The underrepresentation of women in the field of IT is a widespread issue that has been thoroughly researched in many different places. The specific goal of this research is to examine all variables that affect women's employment in IT industry in global context. This study holds significant value because it addresses a critical gap in existing research on women's employment within the IT sector. Many previous literature reviews haven't comprehensively examined all the various factors influencing women's participation in IT on a global scale. This current study stands out by taking a thorough approach, meticulously investigating every relevant aspect of the variables that impact women's career paths in IT across different countries and contexts. By doing so, this research has the potential to provide a more nuanced and complete understanding of the challenges and opportunities women face in the global IT workforce. This newfound knowledge can then be used to develop targeted strategies and initiatives to promote greater gender equality in the IT field. Inconclusion, women's underrepresentation in the IT sector remains a serious issue that goes beyond different geographical locations, cultural norms, and economic systems. While global efforts to promote gender equality have progressed and women's contributions to fields related to STEM have received increased recognition, women continue to make up a small proportion of the IT profession, particularly in the most senior roles. This study sheds some insight into the various issues that influence women's employment in IT, such as cultural norms, gender biases, a lack of mentorship, limited networking opportunities, and unfriendly workplace conditions. These limitations not only hinder women's career progress but also deny the IT industry different ideas that may promote greater innovation and problem-solving.

The findings emphasize the need to take thoughtful, evidence-based actions. Industry executives and policymakers must actively work to remove the hurdles that prevent women from advancing in IT. This entails implementing gender-neutral recruiting processes, fostering work-life balance efforts, and establishing mentorship programs suited to women's professional advancement. These methods are not simply about achieving equality; they are also critical to realizing the industry's innovation potential, as diverse teams typically outperform similar ones in terms of creativity and decision-making.

Furthermore, encouraging women to enter and stay in IT fields is critical to the sector's continued rapid growth. The demand for skilled professionals is increasing, and excluding half the talent pool is a squandered opportunity. The IT industry can set a global example of diversity and inclusion by cultivating an inclusive culture that promotes women's advancement to leadership positions and provides them with the necessary tools that they need to succeed.

The study also underlines the significance of future studies into the complex relationships between the numerous factors influencing women in IT. For instance, the relationship between workplace culture and mentorship availability, as well as the impact of flexible work regulations on long-term career success, call for further investigation.

Larger, more diverse sample sizes and mixed-method techniques may provide more detailed insights into the global gender gap in IT.

Finally, bridging the gender gap in the IT business is not simply a social justice problem, but also an economic need. A diverse and inclusive workforce promotes creativity, increases productivity, and promotes long-term economic growth. By addressing women's challenges and implementing strategic changes, stakeholders could assist the IT sector achieve its full potential and recruit a diverse talent pool. While collective action is required, the benefits to the industry and society are significant.

This study does have limitations, and acknowledging these is crucial for a well-rounded understanding of the research and its implications. Since the study consider about the all the global studies for the sector, generalization is difficult with regional and cultural variations. Since referred studies used a small a sample size representativeness of the study population can limit the generalizability of findings. Methodologies that used in the referred studies have its' own limitations in data collection and analysis. For instance, a survey might not capture the full complexity of a phenomenon. Therefore, that gap can also reflected in this study as well. Even although this study identifies the all the factors that are affecting women employment in IT sector; in global context, it does not mention the inter dependence of the factors. Researchers have not come across as such study that reflect on the inter dependence of the identified. Therefore, this study does not give insight about the identified factors are depended on each other or not. Future studies on a larger or more diverse samples, alternative methodologies or mixed methods approaches, and specially the dependence between the affecting factors of women employment in IT sector can improve this study furthermore.

REFERENCES

Adikaram, A., & Wijayawardena, K. (2015). What happens to female employees in skewed IT project teams in Sri Lanka? Revisiting Kanter. *South Asian Journal of Human Resources Management, 2*(1), 21. https://doi.org/10.1177/2322093715569293

Adya, M. (2008). Work alienation among IT workers: A cross-cultural gender comparison. In *SIGMIS CPR '08: Proceedings of the 2008 ACM SIGMIS Conference on Computers and People Research* (pp. 66–69). Association for Computing Machinery. https://doi.org/10.1145/1355238.1355264

Aiswarya, & Ramasundaram. (2012). A study on interference of work–life conflict between organisational climate and job satisfaction of women employees in the information technology sector. *Journal of Contemporary Research in Management, 7*(2), 351–360.

Bhattacharjee, S., & Dwivedi, P. (2023). Women's rights in India's IT sector: Does equality work across continents? *SAGE Publications, 314*, 229–297. https://doi.org/10.1177/2322093722110320

Byrne, G., & Staehr, L. (2005). Women in the Australian IT industry: Where are we now? *Australasian Journal of Information Systems, 13*(1), 8–18. https://doi.org/10.3127/ajis.v13i1.37

Calitz, A., Cullen, M., & Fani, D. (2020). The influence of culture on women's IT career choices. In *Responsible Design, Implementation and Use of Information and Communication Technology: Conference on e-Business, e-Services, and e-*

Society, IFIP Advances in Information and Communication Technology (Vol. 554, pp. 345–357). Springer Nature. https://doi.org/10.1007/978-3-030-45002-1_30

De Alwis, C., & Bombuwela, P. (2013). Effects of glass ceiling on women career development in private sector organizations – Case of Sri Lanka. *Journal of Competitiveness, 5*(2), 3–19. https://doi.org/10.7441/joc.2013.02.01

Gonzalez, G. (2023). Establishing a culture of innovation and risk-taking. In *SpringerBriefs in Business* (pp. 47–56). Springer Link. https://doi.org/10.1007/978-3-030-80544-9_5

Hubbert, J. (2023). 70+ Women in technology statistics (2024). *eLearning Industry*. Retrieved from https://elearningindustry.com/

Kirton, G., & Robertson, M. (2018). Sustaining and advancing IT careers: Women's experiences in a UK-based IT company. *The Journal of Strategic Information Systems, 27*(2), 157–169. https://doi.org/10.1016/j.jsis.2018.04.002

Kovaleva, Y., Hyrynsalmi, S., Saltan, A., Happonen, A., & Kasurinen, J. (2023). Becoming an entrepreneur: A study of factors with women from the tech sector. *Journal of Enterprising Culture, 31*(2), 155–174. https://doi.org/10.1142/S0218495823500067

Marzouqi, A., & Forster, N. (2011). An exploratory study of the under-representation of Emirate women in the United Arab Emirates' information technology sector. *Gender in Management: An International Journal, 26*(4), 322–343. https://doi.org/10.1108/17542411111144287

Masero, R. (2023). The vital role of digital literacy in the workforce. *eLearning Industry*. Retrieved from https://elearningindustry.com/

Mehta, B. (2016). A decent work framework: Women in the ICT sector in India. *Journal of Labor Studies, 32*(5), 1718–1729.

Mishra, D., Mishra, S., & Ostrovska, S. (2022). Women's professional career and culture: Software organizations in India. *SAGE Publications, 121*, 1–12. https://doi.org/10.1177/2322093722110574

Munyeka, W., & Maharaj, A. (2023). Female information and communication technology professionals' perceptive description of work and home intricacies. *Journal of Computer Science, 102*, 1–21. https://doi.org/10.1016/j.jocs.2023.103779

Ossai, L. (2012). The impact of globalisation on the 'new' employment relationship. *Rethinking Business Communications Blog*. Retrieved from https://www.rethinkingbusinesscommunications.com/

Panteli, N., Stack, J., Atkinson, M., & Ramsay, H. (2017). The status of women in the UK IT industry: An empirical study. *European Journal of Information Systems, 26*(3), 170–182. https://doi.org/10.1057/s41303-017-0035-y

Pretorius, H., & Villiers, C. (2010). A South African perspective of the international discourse about women in information technology. In *SAICSIT '10: Proceedings of the 2010 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists* (pp. 265–274). https://doi.org/10.1145/1839479.1839516

O'Brien, W., Hanlon, C., & Apostolopoulos, V. (2023). Women as leaders in male-dominated sectors: A bifocal analysis of gendered organizational practices. *Leadership Quarterly, 34*(2), 1867–1884. https://doi.org/10.1016/j.leaqua.2022.101757

Rastogi, V., Meyer, M., Tan, M., & Tasiaux, J. (2020). Boosting women in technology in Southeast Asia. *Infocomm Media Development Authority (IMDA)*. Retrieved from https://www.imda.gov.sg/

Ravindran, B., & Baral, R. (2014). Factors affecting the work attitudes of Indian re-entry women in the IT sector. *Journal of Career Development, 41*(2), 31–42. https://doi.org/10.1177/0894845313486357

Samineni, S., & Reddy, B. (2013). Leadership competencies analysis: A study with reference to women managers in software industry. *Journal of Human Resource and Leadership, 144*, 77–81.

Schultz, L., & Adams, M. (2022). Comparison of information technology professionals' perception of job satisfaction and inclusion by gender: Insights for recruitment and retention of female students. *Information Systems Education Journal (ISEDJ), 20*(4), 32–44.

Semasinghe, W. (2017). Women's labor force participation in Sri Lanka: An inquiry into the factors influencing women's participation in the labor market. *International Journal of Social Science and Humanity, 7*(3), 184–187. https://doi.org/10.18178/ijssh.2017.V7.811

Shen, A. (2024). Associations between women's retention in STEM or STEM-related fields and their spouses' occupations and majors. *Humanities and Social Sciences Communications, 10*, 178. https://doi.org/10.1057/s41599-024-01631-2

Singh, V. (2019). Women participation in open-source software communities. In *ECSA '19: Proceedings of the 13th European Conference on Software Architecture* (pp. 94–99). https://doi.org/10.1145/3344948.3344983

Thangavel, G., & Lavanya, R. (2012). Women and work-life balance practices: An exploratory study. *SRM Journal of Management Research, 2*(1), 12–23.

Timms, C., Lankshear, C., Anderson, N., & Courtney, L. (2008). Riding a hydra: Women ICT professionals' perceptions of working in the Australian ICT industry. *Gender in Management: An International Journal, 23*(3), 155–177. https://doi.org/10.1108/17542410810866999

Vainionpää, F., Kinnula, M., Iivari, N., & Juustila, T. (2020). Girls in IT: Intentionally self-excluded or products of high school as a site of exclusion? *Emerald Publishing Limited, 31*(3), 846–870. https://doi.org/10.1108/ijed-09-2019-0213

Walsh, L., Turnbull, S., Khan, S., & Pereira, V. (2020). Exploring career choices of Emirati women in the technology sector. *Emerald Publishing Limited, 7*(1), 96–114. https://doi.org/10.1108/9781839825549-012

Wijayawardena, K., Wijewardena, N., & Samaratunge, R. (2017). Compromising gender identities: Stay strategies of women in gender-atypical information technology firms in Sri Lanka. *Gender, Work & Organization, 24*(3), 246–264. https://doi.org/10.1111/gwao.12164

Zhu, J., Lunn, S., & Ross, M. (2023). Characterizing women's alternative pathways to a computing career using content analysis. In *SIGCSE 2023: Proceedings of the 54th ACM Technical Symposium on Computer Science Education* (pp. 158–164). https://doi.org/10.1145/3545947.3545948