28. Safe and suitable yet unequal for women: understanding the inequalities in the hiring process in the Indian software industry

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INTRODUCTION

Gender inequality manifests in multiple forms, one being segregation in specific occupations (horizontal or essentialist) and the other being where women are concentrated in the lower levels of hierarchy (vertical) (Charles & Grusky, 2004). One such segregated industry that has emerged in recent decades is the software industry. It is male-dominated in the western developed economies, especially in the United States (Chang, 2019), where women constitute roughly 25% of the population compared to the overall labour force participation rate of 47% (Beckhusen, 2016). Interestingly, India has been one of the frontrunners of the software industry's revolution and witnesses the presence of women employees constituting 35% of the workforce (NASSCOM, 2020), despite a dismal labor force participation rate of 19% in 2021.[1] Arguably, the Indian software industry does not show signs of horizontal segregation; however, the limited representation of women in C-suite or top-level positions (less than 1%; Raghuram et al., 2017) could indicate vertical segregation or a masculinised profession.

The prior literature (Levanon & Grusky, 2016; Rider & Tan, 2015) argues the possibility of supply and demand-related challenges regarding horizontal or vertical segregation of women employees. Such segregation results in women occupying low-status or low-paying jobs in the economy (Reskin & Roos, 1990). The possibility of vertical segregation in the Indian software industry becomes confounding considering the profession's appeal amongst young female technical graduates and their family members, as the profession is considered safe and suitable for women (Parikh & Sukhatme, 2004). The attraction of the profession reflects in the proportion of women (51%) in entry-level jobs in the industry (Raghuram et al., 2017). The National Association of Software and Service Companies (NASSCOM) has been instrumental in enhancing diversity and inclusion in the Indian software industry for more than a decade and confers excellence awards to organisations for their efforts. According to the industry association report (NASSCOM, 2018), more than 50% of the companies that participated had 4% women in senior management positions in 2012 and 2017. Balanced proportions at the entry level and highly skewed proportions at the top-level hierarchies reinforce the belief that demand-side mechanisms create conditions for either exit or stagnation in women's careers. Recruitment and selection processes are the first encounters where demand-side mechanisms are at play and could create hurdles for women applicants. It is necessary to understand the employee hiring and selection practices in the Indian software industry that both men and women applicants go through.

Organisational practices or processes like employee selection, performance evaluation, and promotions (Castilla, 2008) are inflicted by bias against women and have been documented

for both male-dominated and gender-neutral professions. Scholars (Eagly & Carli, 2007; Ely et al., 2011) suggest second-generation gender biases are invisible and difficult to identify and eliminate because they tend to be unconscious in nature and exist when criteria for evaluation are highly subjective. The understanding of the employee selection processes in the simultaneous presence of biases (both first- and second-generation), stereotypes, and prejudices would enhance our understanding of the causes of gender inequality, especially vertical segregation, inside the Indian software industry.

LITERATURE REVIEW

Acker (1990) in her seminal work posits that organisations are gendered and suggests managerial decisions initiate certain divisions (based on gender) with respect to jobs, appropriate behaviours, workspaces, etc., and organisational practices are instrumental in maintaining such divisions. For instance, selection practices contribute to sex-based discrimination (Neumark, 2018) and result in gender-based disparities. Acker also illustrates how application of organisational logic, rules, or directives for running organisations with a gender-neutral concept of a 'job' brings alive a disembodied worker who exists only for that particular work and has negligible obligations beyond the boundaries of the job. Such attributes of a worker have the potential to impact the decision-making processes of managers in HR processes and practices like selection, performance appraisal, compensation, etc.

The HR processes and practices are instrumental in ensuring equal opportunity for women employees and enhance the possibilities of achieving gender equality. Women continue to experience segregation, harassment, work–life challenges, and glass ceilings in most of the Asian countries (Tatli et al., 2017). Despite the presence of equal opportunity laws and increasing proportions of female students opting for higher education, the presence of women in managerial jobs (Community Business, 2014), including the Indian software industry, is minimal. Employers limit their policies or programs to maternity leave policy, prevention of sexual harassment, and work–life initiatives (Cooke & Saini, 2010). A recent study (Singh & Pandey, 2019) conducted on the top 83 listed companies in India showed that they voluntarily disclosed on average 3.5 women-friendly policies pertaining to prevention of sexual harassment, maternity leave, recruitment and selection, and leadership development programs. The first two are mandated by Indian laws whereas leadership development has become an imperative due to the requirement for women board members in the publicly listed companies. Only 15 out of the participating 83 companies voluntarily disclosed their women-friendly recruitment and selection policies or programs.

Employee selection, a process where hiring managers and recruiters attempt to collect information and evaluate it against job specifications (Gatewood & Field, 2001) is fraught with information asymmetry. Decision-makers use a variety of signals to evaluate the future productivity or capability of the candidate. Sometimes the capability is inferred from membership in social categories like race or gender (Correll & Benard, 2006; Fryer et al., 2013), resulting in statistical discrimination (Fang & Moro, 2011). As decision-makers use group membership as a proxy to predict capability, they resort to stereotypes acquired either directly or indirectly. The dominance of one sex over the other in the occupation could activate the status characteristic and influence the hiring decision (Ridgeway, 2009).

Employers tend to adopt selection approaches that are subjective and rely on intuition (Lodato et al., 2011). Decision-makers favour the gender of those applicants that fits the decision-maker's mental model of the job-holder in question and has been shown to be successful on the job, as suggested by role congruity theory (Eagly & Karau, 2002). Men are assumed to possess more agentic qualities and higher levels of commitment, aspiration, and ambition. On the other hand, women are considered to be relationship-oriented and are perceived to be less committed and less ambitious. Interestingly. empirical evidence indicates the contrary (Dunn-Jensen & Stroh, 2007). The highest level of gender role congruity bias has been reported for hiring decisions for male-dominated roles (Koch et al., 2015). Cultural beliefs also inform subjective decisions about what women or men should do. For example, according to social role theory (Eagly & Karau, 2002), a 'good mother' should focus on the child's well-being and her primary responsibility lies in the family. Such prescriptive stereo-types contradict the 'ideal worker' image, who is only focused on the assigned organisational tasks and responsibilities. Such prescriptive stereotypes work against working mothers (González et al., 2019), creating hiring inequalities.

Most studies studying selection or hiring practices in different occupations are correspond-ence audit studies, wherein fake resumes are sent to real businesses, and interview invitations are considered favourable outcomes. Such studies consistently indicate discrimination against women (Ayres, 2003; Moss-Racusin et al., 2012). However, such audit studies focus on the initial phases of the hiring process, where the resume is either rejected or shortlisted depending on the applicant's gender or qualifications. On the other hand, laboratory studies manipulate the gender or qualifications of the applicant or the characteristics of the decision-maker and indicate the presence of biases and prejudices in decision-making. The applicability of the laboratory findings in real-life situations could be a cause of concern. Such studies fail to give voice to the real-life experiences and challenges of the candidates and employers. Undurraga (2019) has attempted to document the discriminatory practices hiring managers and recruiters adopt to explain the inequalities in the Chilean labour market. My study also attempts to bring forth the lived experiences of the different stakeholders in the hiring process and understand how they reproduce or reduce gender-based inequalities inside the Indian software industry.

METHODOLOGY

I conducted 49 semi-structured interviews with individuals who had different roles in the employee hiring process – namely, hiring managers (those who initiate the hiring process and conduct the interviews), recruiters, headhunters, and consultants (those who source the applicants and sometimes conduct the initial interviews) – and employees/candidates who had gone through the selection process. Interviews with three different categories of respondents were utilised for data triangulation. It was also helpful getting knowledge about selection pro-cesses in multiple firms. All the participants were working professionals and belonged to the software industry, working in private or public limited companies. The sample had 27 women and 22 men with experience ranging from 5 to 25 years of experience. Confidentiality and the anonymity of participants and their company were assured. Informed consent was obtained from them before the interview was conducted. A unique identifier ID number was assigned for each participant.

I used my connections to get access to my research participants. I also used the snowballing technique to get access to further participants through my first level of connections. One of my executive students, a working professional, enhanced my reach to multiple participants. Employees were asked about their experiences of the last selection process. Hiring managers or HR recruiters were asked about the selection process they undertook or conducted in the last hiring they did. The interviews were conducted from August to October 2021. All the interviews were conducted online through Zoom and were recorded with the necessary permission. The interviews were conducted on Zoom because of the limited options for travel owing to the pandemic restrictions. The duration of interviews ranged from twenty-five minutes to one and a half hours. The interviews were transcribed verbatim and analysed manually by entering the answers in Microsoft Excel.

FINDINGS

The analysis suggests that employees and decision-makers have to go through various stages during the complete hiring process to ensure the acquisition and performance of the right person in the right place and at the right time. The multiple stages in the hiring process create occasions where discrimination could either happen through the practices adopted or in the decision-making process, creating inequalities in the outcomes for the women candidates. Each stage of the hiring process is discussed, presenting evidence of the discriminatory practices. The findings also illustrate the adoption of gendered stereotypes by the hiring managers in their decision-making processes.

Sourcing of Applicants

The hiring process in the Indian software industry begins with a recruitment process wherein applications are sought from eligible applicants. Companies mostly adopt a centralised approach where talent acquisition experts administer and coordinate the process with the active support of the hiring managers. Most of the companies hire both fresh graduates from engineering campuses or universities and experienced professionals with relevant skills. Software companies are the biggest recruiters from the engineering colleges, accounting for 70 to 80% of the offers.[2] Female students comprise 42–43% of the STEM graduates in India and a sizable portion of the applicants.

> The ratios are good when we hire people through campus – we get a good and even ratio without efforts. (H7, male, 15 years' experience)

> I always prefer to hire a best. So, when I go for a hiring, my selection would be I keep the cut-off of 80% throughout their academic qualifications. Then there was a test. I got 30 female candidates who cleared the test and had clearing the screening criteria. There were only 9 male candidates who cleared the steps. So definitely my selection will be obviously more female. (R4, male, 12 years' experience)

Female applicants perform better or are at the same level on the aptitude or cognitive ability tests vis-à-vis the male students. However, companies struggle in sourcing experienced female applicants. It was a consistent experience across all the recruiters and hiring managers, who had worked in numerous software companies or profiles across India. To overcome the chal-

lenge, companies either partner with vendors that specialise in sourcing female candidates, provide more incentives (or payoffs) to vendors for placing a successful female candidate, organise women-specific recruitment drives, or advertise positions or roles for only female applicants. However, such initiatives and programs are limited to multinational companies headquartered either in Europe or the US.

> Not anything specific but that was more of initiatives to increase diverse pool like extra percentage to vendor partners, more referral bonuses, diversity-specific hiring drives. (R11, female, 14 years' experience)

> Advertisement clearly mentions hiring is for women candidates, there are referral programs for women candidates. We also talk about returnship programs, support policies, and flexibility provided to women candidates in the print or digital ad. (R16, female, 10 years' experience)

Companies provide more referral bonuses to their employees if they refer successful female candidates. Referrals are one of the common ways to enter the applicant pool and could constitute 30 to 50% of the applicant pool (Petersen et al., 2000; Leicht & Marx, 1997). As the number of male employees in the technology space is higher, there is a possibility that the mental model of the role fits with a male candidate (Hogg, 2001). Technical skills in the software engineering domain have been associated with masculine attributes (Cech, 2013) and that could increase the chances of more male applicants getting referred into the candidate pool in comparison to female applicants.

> Yes. There are more and more male counterparts in technology space for the same skill than females. Overall, the number of available female candidates available in technology as compared to male counterparts is lower in number. Though there are more and more females pursuing technical education, but numbers are significantly low in number overall. (F3, female, 12 years' experience)

It is encouraging to witness that the number of female applicants for the entry-level jobs in the industry is on the rise. In spite of the common perception that information technology (IT) or software jobs are suitable or preferable (Gupta, 2020) compared to employment in other industries in India, the availability of female candidates for experienced profiles is limited. A study (Community Business, 2014) reports that women comprise 16.4% of middle-level and 10.6% of senior-level jobs in corporate India.

Shortlisting of the Applicants

The Indian software industry employs more than four million workers and every year nearly 200,000 new jobs are created. The attrition rate of the industry hovers around 10%, which has significantly jumped to 20% post-pandemic. Hence, the hiring process and the HR recruiters get overwhelmed with processing of numerous applicants and selecting suitable profiles. To facilitate such time-consuming, tedious tasks, companies have started using artificial intelligence and machine learning algorithms that provide a matching score for each candidate corresponding to the job specification. Most employers consider a gap in employment or education as undesirable (Pedulla, 2016) and make negative inferences about candidates' capability or commitment based on such gaps. Such details are collected through the application forms and the algorithm (trained through previous data) calculates a match score such that an individual with an educational or experience gap gets low match scores.

> The technology doesn't read that as what happened in that gap, it only reads it as a gap and rejects the profile. Now, if that was a case, a candidate actually upgraded his skill, though he is taking a break and should give a value add to the profile, alright. But what happens with this Applicant Tracking Systems (ATS) will not consider that profile. (R3, male, 16 years' experience)

Women are likely to take career breaks owing to managing the domestic responsibilities of caring for children and the elderly (Fahle & McGarry, 2016), especially when organisation support is limited or non-existent. The AI technology limits the possibility of shortlisting such a profile (even if all eligibility requirements are fulfilled) as it eliminates the profile from the pool, rather than suggesting a human intervention. Although female candidates with breaks in their career could get rejected, targeting returning mothers and conducting a completely separate selection process could attenuate such rejections.

> There is no process where at least a flag is raised there, where the ATS comes back and tells you that there's a flag here. This guy has a one or two years kind of a gap, okay, this needs to be checked, otherwise, the profile is a match. Okay, which would happen with a human touch. (R3, male, 16 years' experience)

The parameters or the attributes that have been deduced or derived from job specifications may not explicitly work against the selection of female employees. However, the machine algorithm developed for shortlisting applicants is based on previous historical successful profiles, which could have a significant number of male employees. The higher availability of male candidates for experienced profiles accentuates the biased shortlisting of applicants conducted through technology.

Interviewing the Candidates

Hiring managers use objective, subjective, formal, or informal tests or interviews to gather information to assess the performance potential of the shortlisted candidates. In the case of experienced professionals, all the participants in the study indicated that they have three to four rounds of interviews where two to three rounds are with technical experts and one round is with the hiring manager or HR. All the rounds happen in succession and are elimination rounds. The interviews are competency-based; however, interviewers don't follow a structured format in most of the scenarios. Amongst the 33 hiring managers and recruiters that I interacted with only 2 mentioned a structured interview substantiated with a hiring consultant.

> Because more often than not, it's very unstructured and goes extemporary. It depends on candidate profile, they will start with, candidate talking about himself. And then the questions related to the work that the person has been doing, on the technologies that the person's worked on. so there's a split there. Structured would be preferred… But unfortunately, it doesn't happen, in at least 60% of cases. Okay, it happens in 40%, yes, some of the major organizations do use them. One of the major issues, why this doesn't work is you can get somebody at maybe a manager level, to fill in your sheets. But somebody who's a little more senior, would put more trust on his judgment, rather than any of those sheets. (R3, male, 16 years' experience)

> But I did face discrimination previously in another organisation's hiring process. It happened in the first round. I felt like the interviewer was having the impression that women are not good in technology and the sole purpose was to grill, humiliate, and demean me. I was constantly made feel that I am being considered only because of the referral. The interviewee cleared my first round and told me clearly that I am being sent to the second round to be grilled more. (F7, 8 years' experience)

The initial rounds of interviews are technical in nature. In the absence of a structured format, the interviewer or the panel members could be under the influence of mental schemas, stereotypes, or biases and are not able to extract job-relevant individual information. The panel members consider the group membership as a proxy to inform their questions and evaluations of their potential, and statistical discrimination becomes evident.

One of the recommendations provided by scholars consistently over the last few decades to reduce gender-based selection biases during interviews is administering structured interviews (Schmidt & Hunter, 1998; McCarthy et al., 2010). Another recommendation is conducting panel-based interviews where individuals from different social groups or functional departments are present, reducing the possibilities of gender-based stereotypes or prejudices creeping into the decision-making process. Amongst the 16 participants I interacted with, 14 mentioned that they had one-to-one interviews or were administered single-member panels. A limited number of hiring managers (3/16) and recruiters (4/17) mentioned that they try to bring female panel members or HR personnel during the interviews. However, it is not mandatory and gets restricted owing to the availability of eligible female interview panelists.

> There is no pre-identified panel composition, and it is based on panel availability in the team. We are not specifically focussed on women panels. (R8, female, 15 years' experience)

> For roles beyond a specific grade, we do encourage having a diverse interview panel at least one female panelist. If no female panelist is present, we encourage diversity in different forms for example…. from a different age group. (R12, female, 4.5 years' experience)

Interestingly, all the hiring managers barring 2 out of 16 in my sample were male employees and that indicates a dearth of female panel members and a limited number of women in managerial or leadership positions. There is a possibility of finding interviewers specialised in different skills who are available on an hourly payment basis and only one recruiter mentioned this. Beyond hiring external interviewers, technology has opened new opportunities for interviewing. Interview panel members could join in a video or audio call from anywhere across India or other countries during the pandemic, making it more efficient and quicker, which was not the case before the pandemic.

> Alright, panel interviews also can happen now, now more than ever. I am hiring and sitting in Bangalore, my director is in Bombay… and we can all join the call together. When we're taking interviews for senior candidates, we do a panel, easier one shot and it's much more easier. (R3, male, 16 years' experience)

Although technology could enable multiple panel interviews where panel members and candidates are spread across different geographies and time zones, there is a possibility of adopting unfair means (e.g., using notes, prompting of answers by a third party, accessing the Internet, etc.) to excel during the interviews that would not be possible during a face-to-face interview. Prevalence of faking or using unethical means would not support the possibility of online interviews.

Interviews are an opportunity to gather information both relevant and irrelevant to the jobs in question. Absence of female panel members or HR personnel during the interviews could provide freedom to panel members to ask about personal information regarding marital status or number of children without any accountability. Managers need to acquire job-relevant information but the absence of regulations and policies preventing panel members from

seeking personal information sends a signal to panel members that such questions can be asked. All the female candidates that I interacted with were asked such questions.

> I did face such questions for one of the job interviews that I took. I had just gotten married at that time and the interviewer checked with me twice if I was planning to start a family anytime soon as he was hiring for a critical project and did not want the candidate to join and then leave for maternity. (F8, 6 years' experience)

> During the hiring process, these are very common instances where hiring manager would check for personal details like family members and marital status. It is a general scenario where they would like to check if I will be able to work without any disconnect. For ex. this job requires person to stretch on frequent basis to catch up with US stakeholders, will you be able to catch up? Or do you have any commitments that would stop you from providing extended hour support if required? Most of the times, the focus was to identify if I can stretch or will I have issues with that. Some also wanted to understand my spouse work/job as well. (F3, 12 years' experience)

Although the personal questions could provide job-relevant information regarding the candidate's capacity to extend efforts beyond office hours, it could seem as intentional discrimination if such personal questions are not asked to male candidates. If women candidates appear to be of a marriageable age, masked questions pertaining to family background or family members are asked. In the absence of opportunities for asking direct questions regarding marriage, children, or planning a family, panel members search for other cues, especially forms of jewellery and adornment (bangles, mangalsutras, vermilion) that Indian married women (especially Hindu married women) wear on a regular basis.

> Indirectly we ask sometimes when we meet candidate… So, you have completed your engineering so how many family members are there… like siblings. Then they say like one or two. We check like older or younger then a thought comes, okay, if she's elder she should get married first. Who are in the family, what is the family background? (R4, male, 11 years' experience)

The absence of a structured interviewing format and the unavailability of multiple panel members in an interview reduce the reliability and validity of the assessment tool (McCarthy et al., 2010). The juxtaposition of unstructured interviewing with questionable reliability and validity and the asking of personal and job-irrelevant questions to female employees could not only lead to flawed decision-making, creating unequal outcomes for female employees vis-à-vis male employees, but also cause hiring errors that could negatively impact organisational performance.

Decision-making

The family-related personal questions asked to female candidates originate from the gendered social roles or prescriptive stereotypes panel members ascribe to female employees, wherein women have to take on the domestic responsibilities and take care of the children and elderly parents. Employers sometimes ask about the marital status of candidates and candidates also voluntarily disclose their marital status in their resumes.

> I think one of the common misconceptions, especially for female employees in India, is that if a role requires either long and/or flexible hours, we tend to generalize that this role cannot be done by women employees, simply for the fact that our social ecosystem does not encourage that. But, in my opinion, women employees are as vulnerable as their male counterparts when it comes to working

long hours for a sustained period of time. I don't think one gender is better than the other in this case. (H1, male, 11 years' experience)

The requirement to work for longer hours or work in different shifts, especially late at nights catering to US-based clients, is in contradiction with the gendered expectations and highlights the inability to fill the shoes of the 'ideal worker' (Acker, 1990). Such contradictions manifest as biases or stereotypes when they are applied to all female candidates. Levanon and Grusky (2016) suggest that women could be perceived as less committed or competent software engineers.

> At the start of the process when we list down the criteria for a role, till technology no stereotype would come in factor. As soon as we move to some of the softer aspects of the job, then we tend to get little gender stereotype. For example – shift timings in particular can really get in the way of hiring a women candidate mostly due to multiple responsibilities they have. As hiring manager, we tend to lose confidence at this level and check several times to confirm. (H9, male, 5 years' experience)

> It is highly perceived that women will not take up jobs with long hours or late shifts. Which is not true all the time. There is an unconscious bias against female applicants when someone is considering a tough job. (R12, female, 4.5 years' experience)

The hiring managers and the recruiters acknowledge the presence of stereotypes and biases against the candidature of female employees for profiles requiring late-night work shifts, extended work hours, or working during weekends that entail multiple responsibilities. The overemphasis on the ability to work for extended hours or in different shifts was also supported by the comments of hiring managers and recruiters when they were asked about work–life balance.

> Candidates seeking work–life balance in technology jobs are perceived negatively. In few cases, managers do ask to drop their candidature due to nature of the job wherein incumbent has to work for late hours and sometimes over the weekend as well. (R11, female, 14 years' experience)

The assumptions and apprehensions of recruiters and hiring managers regarding women employees, especially married women with or without children, are reinforced by the breaks in the career of experienced women employees. All the hiring managers and recruiters indicated that women go on breaks owing to the responsibilities of childcare or care for the elderly. Such breaks signal that the priorities of women lie in catering to their family responsibilities rather than their work, which requires long stretched hours and working in shifts. As women fulfil their prescriptive stereotype, they send signals about their commitment towards the job that accentuate the activation of status characteristics; in this case, it is married women.

> In technology world, the quality of education is more or less similar… But as we grow in experience ranges, clearly there are gaps observed in three out of five resumes where a women has taken a gap to plan for personal engagements. (R7, female, 7 years' experience)

> It is well-known norm that women candidates even if they start at same levels as their male counterparts, they will be lagging in the race of 10–15 years down the line. Reason is pretty simple – they are managing home and families along with their work. They will take break in between for family reasons and end of the journey they are lagging and their male counterparts have progressed both in terms of level of the role as well as the salary part. (R5, male,14 years' experience)

The highly patriarchal society in the Indian scenario creates an environment where the decision to continue to participate in the workforce or take a career break is a household decision rather than the individual's own decision (Sudarshan & Bhattacharya, 2009). The gendered expectation that the woman will be the primary caregiver is not disputed and reflects in the assumptions of recruiters and hiring managers that the female employee is highly likely to take a break.

Apart from the assumptions regarding the commitment of women towards roles or profiles that require extended hours and night shifts, another stereotype that emerged from the interviews was that women are either not good at coding (the essential skill in the industry) or they do not prefer it.

> It is general perception that coding and development is an interest area for male candidates than the female candidates. Though I have not faced a situation where I have been told that a male can do a better coding than a female, but since automatically more number of applicants tend to be boys it remains to appear a masculine job. There are good number of females who are interested in coding and can do so. (F3, 12 years' experience)

> Quality of education was better in female candidates, but their real-time experience is very limited in technology space like coding. Their orientation tends to be less technical than their male counterparts. (R15, female, 4 years' experience)

The presence of limited women in coding or technical jobs creates chances for statistical discrimination. With fewer opportunities, female employees are not able to gain relevant experience in coding and cannot display enough of the technical orientation that is essential for technical roles, reinforcing the stereotype. Women seem to be more interested in jobs like testing or business analyst or techno-functional roles that are not seen as technical enough. Another profile that presents higher representation of women in IT companies is that of human resources, a support function. Segregation within the software industry in quality assurance or testing-related jobs has been recently observed in the US too (Campero, 2021).

> I have heard a lot of females talking about how the male team doesn't prefer female co-workers because they might not be technical enough. (F5, 7 years' experience)

> On the record or formally no one will accept this. But offline, there are many stereotypes called out unconsciously. For example, female students would take up less coding jobs or show more interest towards less technical jobs, so there is better female ratio available in jobs like testing, business analyst, etc.… They tend to take up more jobs with customer facing. (R12, female, 4.5 years' experience)

The quality assurance jobs or profiles are lower in status with respect to pay in the US. The study also showed that once individuals have such quality assurance experiences in their resumes, it becomes a deterrent for them to explore or gain entry into more technical profiles. Lower valuation and barriers to movement could also be prevalent in the Indian software industry, which could explain the fewer growth opportunities and the segregation of women in the Indian software industry, substantiating the propositions of previous scholars (Bielby & Baron, 1986; Reskin & Roos, 1990). The profile of a business analyst requires interaction with the clients and the development team. Qualities like relationship orientation, good communications skills, and stakeholder management are important for the profile and resonate with feminine qualities. However, previous research (Chakraborty, 2019) indicates such

profiles could limit the career progression of female employees as they limit the opportunities available.

> As a role, business analyst is neutral role where both male and female have good expertise since it requires strong communication and stakeholder management experience. Females are good orators and capable of good project management skills. (F4, 9 years' experience)

The decision-making process is dependent on an assessment tool that is likely to have low reliability and validity scores. Beyond the tool, the information that is being acted upon is a cause of concern as stereotypes against women employees abound with respect to their commitment in highly demanding profiles, as well as their competencies in technical roles.

Interestingly, decision-makers strive to bring representation of women employees in their teams and organisations. However, the representation is not necessarily sought to encourage gender equality.

> There are times when diversity is favoured only to create a balance in the team where there has been higher presence of male candidates already. (R6, female, 5 years' experience)

> I would like to also keep in mind the gender ratio in the team, if its required. Like virtually, it does not matter much but in physical setups, it can be very tricky. (H9, male, 5 years' experience)

Depending on the ratio that decision-makers have decided to achieve, efforts to increase representation of women employees get stalled as that target ratio is achieved. Most recruiters and hiring managers indicated a preference that one third of the team or department be women. The industry also has roughly one third female employees.

> Managers see whether they have 30% women in their teams. If it is less, they will try hard and try to think less about the urgency of the business. If they have achieved it, they will say that business is suffering. (R17, female, 20 years' experience)

Although the entry-level jobs indicate balanced proportions, hiring managers and recruiters adjust their targets for diversity hiring ratios to one third. There is a possibility that target gender ratios are reconsidered regularly after looking at supply statistics and industry averages. The industry statistics could also be the consequence of preferred target ratios in the minds of decision-makers.

DISCUSSION AND CONCLUSION

The Indian software industry has a higher number of women employees compared to western developed economies, with a greater number of fresh female graduates entering the industry every year. Yet the industry is masculinised in nature, with the expectation of long hours and late-night shifts personifying the 'ideal worker' (Acker, 1990) that contradict the gendered roles and expectations of a woman. The contradictions manifest in the career breaks of experienced women professionals, who lose out in experience, pay, and skills. The exit generally happens in the first five years of employment (Gupta, 2020) and employers struggle to find women candidates with experience, which could also result in vertical segregation.

Although the organisations in the Indian software industry are aware of the limited avail-ability of experienced female professionals, their focus tends to be more on getting a higher number of female applicants rather than ensuring that their selection tools or decision-making processes are bias-free. Sex bias is a persistent cause for gender inequality and manifests in various organisational processes like selection, evaluation, and performance management. Most employers in my study neither adopted structured interviewing techniques nor ensured the presence of diverse panels in the interviewing process. HR recruiters in the MNCs imple-ment diversity management policies, which were originally designed in developed economies like the US and the UK. However, the translation of such policies could be ineffective if the contextual understanding of the geographic location is missing (Haq et al., 2020; Öztürk et al., 2015). For example, interviews are a standard assessment tool for most employers in most countries; however, the cultural norms in India permit interviewers or hiring managers to ask personal or family-related questions to employees during the interviews.

In a similar vein, the practice of viewing career breaks in a negative light in India worsens the gender bias against experienced female professionals who may have taken career breaks, especially in the shortlisting stage. As the findings suggest, the application of artificial intel-ligence in shortlisting resumes or profiles indicates the possibility of gender bias. A recent meta-analysis (Hardy et al., 2020) indicates that a sub-group bias causing 1% variance in assessment scores could lead to an impact ratio of 0.59–0.61 when the selection ratio is 0.01. The reluctance in adopting more valid assessment tools, mainly structured interviewing and diverse interview panels, indicates indirect or institutionalised discrimination owing to convenience and efficiency. Such inaction unveils the rhetoric–practice gap in the Indian software industry's context, which is also mentioned by researchers in other countries (Australia (Kramar, 2012) and the UK (Hoque & Noon; 2004)). It is noteworthy that man-agers and recruiters strive for a ratio between male and female employees within their teams or within the candidate pool that is not necessarily balanced or equal and hence not a factor in decision-making. Representation of women among teams and candidates is the objective that restricts investment of resources or changing of hiring processes that could contribute to gender equality.

The masculine nature of the profession creates stereotypes that work against women as they have to fulfil their gendered roles and responsibilities of caregiving and nurturing, which obviate the commitment towards the profession. Prior research (Carless & Wintle, 2007) indicates work–life balance arrangements increase the organisational attractiveness for both young and older employees (Hall, 2004). However, most of the hiring managers in my sample indicated a dislike towards candidates who sought work–life balance. Owing to women's social roles, it is evident that female candidates would not be preferred for such profiles. The presence of more men in technical roles like coding also creates a mental model in the minds of decision-makers that resonates with a male employee more and could create hostile environments during the interviews that would hinder the display of optimal performance by the candidate. Such mental models and biases against female candidates result in horizontal segregation within the industry wherein women with testing and business analyst profiles are predominant, which are not as highly sought when compared to the technical coding profiles.

Limited studies delineate the segregation within a specific industry and my study presents evidence of both horizontal segregation and vertical segregation within the software industry. My study also provides evidence that gender inequality in the software industry is an outcome of the interplay of both institutional and individual discrimination. My study also presents evi-

dence of stereotypes pertaining to gendered roles and expectations and gender biases emerging from role incongruence wherein the lower number of women in technical or coding jobs creates a gender bias that women either are not good at such jobs or are not interested in them.

Indian software organisations need to reassess and incorporate selections tools that are procedurally fair. Although there is evidence of second-generation biases, HR personnel could design and administer structured interviews for different roles or profiles. Structured interviews limit the opportunities to ask job-irrelevant personal questions. Panel members from diverse groups need to be trained and selected for interviewing purposes to ensure gender bias is reduced in the decision-making process. The trainings designed and administered for interview panel members should integrate the context-specific knowledge of what diversity entails and the norms and practices prevalent in the region or the country. The integration of such context-specific knowledge not only enhances the acceptance of global diversity management by different stakeholders but also improves the likelihood of achieving equality and social justice in the workplaces. The presence of female panel members sends a positive signal to female applicants that the organisation values diversity and inclusion and opportunities exist for women to grow inside the organisation.

As Indian software organisations increasingly resort to using artificial intelligence for shortlisting resumes, they need to conduct regular audits to assess what kind of applicants are getting rejected and the likely reasons for those rejections. The algorithm could be designed to not inadvertently reject female applicants who have taken a break. HR personnel could thoroughly discuss with hiring managers to understand the extent of long hours or late-night shifts required for different roles. This would ensure that job descriptions do not emphasise masculine attributes and allow applicants to self-select themselves into such jobs. However, in the wake of the pandemic and with overall well-being becoming an essential concern of employers, attempts could be made to redesign work so that extended durations of peak workload could be reduced.[3]

NOTES

1. See: https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS.
2. See: https:// www .moneycontrol .com/ news/ business/ covid -19 -campus -hiring -in -engineering -colleges-by-it-firms-might-see-5-10-drop-5661091.html.
3. The author is grateful to Ms Barkha Kataria for her efforts in supporting the data collection.

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