Gender Diversity and Organizational Outcomes in Indian Software Industry: Evidence from Workforce, Board, and HR Practices

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Abstract: Gender diversity at work spaces has increasingly become an area of academic and corporate interest, particularly in the tech industry where systemic imbalances are prevalent along with gross underrepresentation of women. This study explores the relationship between gender diversity and a number of key organizational - level outcomes. Building on RBV as well as Social Role Theory, the model comprises various antecedents for organizational performance, workforce diversity, board representation, gender-friendly HR practice, inclusion programs and leadership support. Independent factor analysis was conducted using data collected from 400 feet-on-street professionals in two IT hubs of India through cross-sectional survey design and EFA, CFA and SEM techniques. The results show that labour gender diversity, gender sensitive HR practices have a positive and significant effect on the retention of employees and innovation but not for board gender diversity in terms of retention. Impact of the inclusion strategies were modest but clear demonstration of contextual enablers. The results emphasise the significance of mid-level diversity and present a model to enrich gender diversity in Indian IT that has been empirically validated, presenting useful implications for practice, policy and future research.

1. Introduction

Gender diversity in the workplace has received significant academic and corporate attention, particularly within high-growth fields like Information Technology (IT). The underrepresentation of women in IT is a global issue that highlights long-standing structural inequalities and non-inclusive organizational cultures (Annabi & Lebovitz, 2018). Although there have been gradual improvements, women continue to face barriers such as stereotyping, lack of mentorship, pay inequity, and restricted access to leadership positions (Shannon et al., 2019). These challenges are especially pronounced in software firms, where value is placed heavily on technical competence and innovation domains historically dominated by men (Díaz-García et al., 2013). The gender imbalance in IT is not just a social concern but also a performance and governance issue. Diverse teams have consistently demonstrated superior problem-solving and innovation outcomes (Woolley et al., 2010; Gomez & Bernet, 2019). Gender diversity in boards and top management has also been positively associated with firm value, sustainability initiatives, and responsiveness to stakeholder needs (Brahma et al., 2021; Lu & Herremans, 2019; Ben-Amar et al., 2017). These findings underscore the importance of understanding interventions that promote gender diversity in IT work environments.

The McKinsey report Delivering Through Diversity (Woetzel et al., 2018) provides compelling evidence that firms in the top quartile for gender diversity are 21% more likely to outperform their peers financially. Similarly, Hunt, Layton, and Prince (2015) found that gender-diverse organizations enjoy competitive advantages through talent attraction and customer understanding. While this "business case" for gender diversity is well-established globally, Indian IT firms continue to exhibit significant gender asymmetry, particularly in leadership and technical roles. Kundu and Mor (2017) observed positive links between gender diversity and firm performance in Indian IT firms but

highlighted that progress remains slow. This persistence of exclusion is driven by cultural norms, insufficient institutional support, and entrenched male networks (Atal et al., 2019).

Cultural and structural barriers exacerbate these challenges. Tatli et al. (2017) argue that organizations often place the responsibility for gender equality on women themselves, rather than reforming institutional norms. Similarly, Kossek et al. (2017) noted that many women "opt out" of IT roles due to hostile workplace conditions, despite having equal qualifications. These patterns impede women's retention and advancement. The notion of "critical mass" (Joecks et al., 2013) suggests that a token presence of women is insufficient to influence governance; substantive and empowered representation is required. Kim and Starks (2016) further argued that women contribute distinctive governance and leadership capabilities, reinforcing the case for gender-diverse top management teams. Yet, women remain underrepresented in boardrooms across Indian software firms. Regional and sectoral effects matter too studies such as Marinova et al. (2016) and Mateos de Cabo et al. (2012) have shown that board-level gender diversity enhances innovation, employee engagement, stakeholder trust, and risk perception. These international patterns highlight the need for context-specific inquiry into gender inclusion within Indian software companies.

Tech companies also play a crucial role in shaping inclusive workplace cultures. Annabi and Lebovitz (2018) introduced the Organizational Interventions Model for Inclusive Barriers (OIMIB), which identifies targeted interventions such as mentoring programs, flexible work arrangements, and inclusive evaluation systems that help women overcome both individual and systemic challenges in IT workplaces. Their findings in American IT firms demonstrated that these interventions significantly improve women's retention and advancement. This perspective is echoed by Rao and Tilt (2016), who found that gender-inclusive CSR enhances innovation and brand identity in technology-based industries. However, the effectiveness of such diversity initiatives depends heavily on organizational climate and implementation (Nishii, 2013). In environments characterized by long work hours and competitive, performance-based cultures, inclusion not mere representation is critical to prevent tokenism or backlash (Williams et al., 2012). Moreover, structural reforms such as quotas are insufficient without corresponding cultural and leadership commitments (Terjesen et al., 2015; Adams, 2016).

This intersection of structure and agency is particularly pronounced in India, where social norms often constrain women's labor force participation. Goldin (2014) referred to this as the "last chapter" of gender convergence where institutional barriers, rather than personal capabilities, sustain gender gaps. In Indian IT companies, women are well represented at entry levels but remain scarce in senior roles. Furthermore, organizational efforts to promote gender diversity often emphasize quantitative targets over qualitative inclusion. Reguera-Alvarado et al. (2017) found that simply increasing women's board representation does not automatically enhance performance unless accompanied by supportive policies and inclusive cultures. Hence, real progress requires organizations to empower women with decision-making authority and leadership opportunities.

Gender-diverse boards have also been linked to stronger environmental, social, and governance (ESG) outcomes. Nadeem et al. (2017) demonstrated that firms with greater female representation exhibit higher CSR engagement and ethical accountability. These findings are particularly relevant for software firms, whose reputations increasingly depend on responsible and inclusive business practices. At the same time, the growing use of AI-driven recruitment and HR systems introduces new equity challenges. Hunkenschroer and Luetge (2022) caution that algorithmic biases in these systems may unintentionally perpetuate or amplify gender disparities an issue that warrants examination in the Indian IT sector.

With overwhelming global evidence demonstrating that gender diversity improves innovation, governance, and performance, the Indian IT sector presents a paradox: it leads in technological progress yet lags in gender inclusivity. Despite rich international scholarship on gender diversity, there remains a lack of empirical research examining how Indian software firms implement gender

diversity practices and how these practices affect organizational performance, employee satisfaction, and leadership representation. Addressing this gap is crucial for both academic and practical reasons, as the findings can inform evidence-based policy, corporate governance, and human resource management strategies. This study therefore seeks to explore the impact of gender diversity practices in leading Indian software companies, offering contextually grounded insights that can support inclusive growth, innovation, and sustainable corporate governance.

2. Review of Literature

The theoretical and empirical bases of our study are based on a multi-disciplinary consolidation of theory and evidence that explain connections between gender diversity and performance, in the context of IT/Software industry. At the core of this model is the idea that gender diversity audits and practiced inclusively can greatly improve employee-related results (engagement, satisfaction, retention) and firm-level variables (like innovativeness, risk management or financial performance) (Gomez & Bernet, 2019; Reguera-Alvarado et al., 2017).

The work is rooted in two principal theoretical bases, namely the Resource-Based View (RBV), and Social Role Theory. According to the RBV, diversity of human capital, such as sex-diversity, is a VRIN (valuable, rare inimitable and non-substitutable) resource that can create competitive advantages for organizations (Kim & Starks, 2016). This is due to the fact that in heavily innovative environments like software industry, gender diverse teams present wider range of point of views, cognitive styles and solution strategies which combined are helpful for improving decision quality (Díaz-García et al., 2013). In reciprocal, SRT argues that gender roles which are a product of sociocultural expectations impact individual behaviour and social cognition in the workplace (Williams et al., 2012). This lens is helpful in shedding light on the enduring absence of women from leadership positions (which does not occur primarily for lack of ability or merit; Kossek, Lautsch, & Eaton, 2006) but stems from structural expectations and gendered scripts (e.g., Schein, 2016). Together, they are the basis of a strong theoretical rationale for gender diversity as potentially beneficial (or not) and how that depends on supportive and inclusive organizational practices.

The independent variable: gender diversity In the conceptual framework presented in this paper, gender diversity is considered as an independent variable and its observation occurs at two basic levels. First, Gender diversity at the workforce level Diversity of gender in the workplace refers to having women represented across all functions and levels, such as entry-level roles, middle management jobs, leadership teams (senior executives) or technical roles. Second, board-and executive-level diversity is about the presence and influence of females in high-stakes decision-making and governance positions (Joecks et al., 2013). It means number representation only is not enough to motivate performance. As proposed by Kundu and Mor (2017) and Atal et al. (2019), "inclusive" inclusion characterized by participation in decision-making, visible leadership, and advancement opportunities is required to capitalize on the value that gender diversity has to offer. Therefore, this study has taken into account not only the gender diversity at quantitative level into consideration but also qualitatively -in terms of the degree to which women become active players in major institutional structures. The hypotheses of this study are derived from empirical evidence and established theoretical reasoning. Each hypothesis is preceded by a conceptual argument explaining the logical basis for its formation.

2.1. Workforce Gender Diversity and Employee Retention

Workforce gender diversity significantly shapes employee experiences, especially in knowledge-intensive sectors like software development. Gender-balanced teams foster better communication, fairness perceptions, and psychological safety, which collectively enhance organisational commitment and retention (Annabi & Lebovitz, 2018; Atal et al., 2019). Empirical evidence from Indian IT firms (Kundu & Mor, 2017) indicates that female-supportive workplace policies correlate with higher employee embeddedness and lower turnover rates. These findings suggest that diversity not only improves equity but also strengthens retention through inclusiveness and engagement.

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H1: Workforce gender diversity has a significant positive effect on employee retention in software companies.

2.2. Workforce Gender Diversity and Innovation Output

Innovation, a central pillar of competitiveness in IT, is deeply influenced by the diversity of perspectives within teams. Research demonstrates that gender-diverse research and development groups produce more radical innovations owing to their broader cognitive and problem-solving repertoires (Díaz-García et al., 2013). Woolley et al. (2010) also found that collective intelligence improves with gender diversity, as women enhance cooperation and social sensitivity. In the absence of inclusive practices, however, diversity may lead to conflict rather than innovation. Therefore, effective management of gender diversity can transform heterogeneity into creative synergy.

H2: Workforce gender diversity has a significant positive impact on innovation output in software companies.

2.3. Board Gender Diversity and Innovation Output

Gender diversity at the board level reflects the inclusion of women in strategic decision-making and corporate governance processes. Boards with higher female representation tend to exhibit greater openness to novel ideas and a lower tendency toward groupthink (Joecks et al., 2013). Brahma et al. (2021) observed that female directors often bring collaborative, ethical, and long-term perspectives that sustain innovation performance. Nonetheless, in the Indian context, regulatory mandates have not yet achieved sufficient critical mass for such influence to manifest consistently. Hence, enhancing female participation at the board level remains a vital driver of innovation-oriented governance.

H3: Board gender diversity has a significant positive relationship with innovation output in software companies.

2.4. Gender-Sensitive HR Practices and Employee Retention

Gender-sensitive human resource (HR) practices including flexible work arrangements, mentoring, parental leave, and transparent promotion criteria are essential for fostering fairness and well-being. Annabi and Lebovitz (2018) found that gender-sensitisation initiatives contribute significantly to women's long-term retention in IT careers. Similarly, Rao and Tilt (2016) linked gender-inclusive HR and CSR policies to improved organisational culture and reduced turnover. Tatli et al. (2017) cautioned that such initiatives should be institutionally mandated rather than discretionary. These findings underscore that structural HR support plays a pivotal role in retaining female employees in the Indian software sector.

H4: Gender-sensitive HR practices are positively associated with employee retention in software companies.

2.5. Inclusion Practices and Innovation Output

Inclusion practices operationalise diversity by ensuring participation, equitable decision-making, and recognition. Nishii (2013) asserted that inclusion not mere numerical diversity drives diversity's positive outcomes. When employees perceive fairness in evaluations and team composition, they are more likely to engage in creative collaboration. Kossek et al. (2017) further emphasised that inclusive environments foster psychological safety, which encourages risk-taking and innovation. Hence, inclusion mechanisms are integral to transforming workforce diversity into innovative capacity.

H5: Inclusion practices have a significant positive impact on innovation output in software companies.

2.6. Leadership Commitment and Employee Retention

Leadership commitment to gender diversity sets the organisational tone for equity and inclusion. When senior leaders prioritise diversity goals, allocate resources, and model inclusive behaviour, the legitimacy of gender initiatives increases (Hunt et al., 2015; Woetzel et al., 2018). Adams (2016) highlighted that female executives often face heightened scrutiny, making visible leadership support essential for their success and retention. In India's hierarchical corporate context, leadership endorsement can dismantle traditional power asymmetries and institutionalise inclusive norms.

H6: Leadership commitment to gender diversity has a significant positive effect on employee retention in software companies.
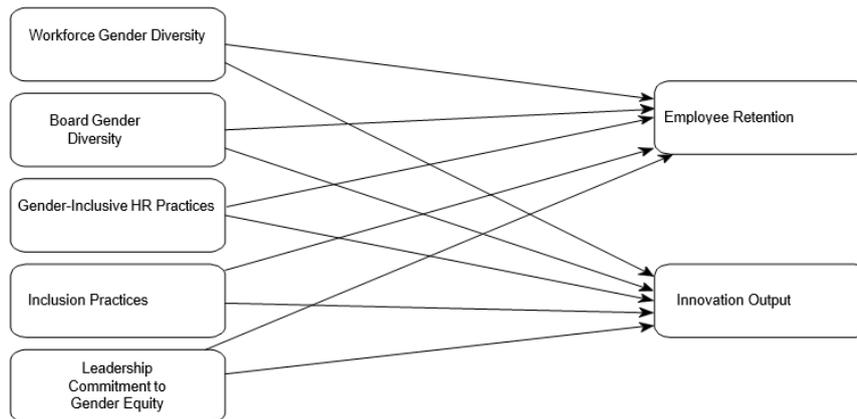

Figure 1: Conceptual Framework

Source: Authors Creation

3. Research Methodology

This section elaborates the methods employed for analyzing the gender diversity and firm performance of specific software firms. The approach incorporates a systematically focused quantitative model for validating the concept and hypotheses. The section offers a detailed presentation of the research design, population and sample, data collection instrument, reliability and validity test procedures and statistical analysis techniques.

3.1. Research Design

This study employs a descriptive–correlational research design using a quantitative, cross-sectional, non-experimental survey approach. The descriptive aspect aims to assess the current status of gender diversity across hierarchical and functional levels within Indian software firms. The correlational component seeks to examine the strength and direction of associations between gender diversity dimensions (independent variables) and organisational outcomes such as employee retention and innovation output (dependent variables). Primary data were collected from employees and managers in mid- to large-scale software companies located in major IT hubs including Bangalore, Hyderabad, Pune, and Chennai. The design was considered suitable for analysing perception-based constructs such as inclusion, HR practices, and leadership commitment that cannot be adequately explored using secondary or experimental data. This framework facilitates hypothesis testing through Structural Equation Modelling (SEM), allowing for the simultaneous examination of multiple interrelated variables and validation of the proposed conceptual model (Creswell, 2014; Kline, 2016).

3.2. Population and Sampling

The focus of our study is software professionals working in mid-sized to large Indian software organizations. These are not just dev [development] people, it's devs, PMs [project managers], HR

and mid-senior level execs. Organizational context The IT-centres where my study organizations are situated, predominantly in the major Indian IT hubs [i.e., Bangalore and Hyderabad have been established as "tech city", Pune and Chennai are likewise upwards potential] that have become globally recognised the hotspots for software development and technology services.

Multi-stage purposive sampling was used in order to achieve a methodologically rigorous and context-specific sample.The companies were first selected (Pass-1) based on publicly available diversity statements or in support of gender diversity disclosures to comply with the directive of the Securities and Exchange Board of India (SEBI). The second phase was based on the selection of firms that had at least 300 job positions and with a formalized HR department in order to ensure organizational complexity and structurally maturity. In the last phase, a purposive sample was utilized to include respondents across functions (i.e., technology division; human resources; and general management) and ranks of hierarchy (entry level- junior analysts/ mid-level-Team Leaders/ Senior professionals).

A sample size of 400, which was the smallest sample that would allow for robust statistical analyses such as SEM and multi-group comparisons to take place, was aimed for. This threshold is congruent with Kline's (2016) recommendation that 10 to 20 observations should be obtained for each estimated parameter in SEM, so as to guarantee the existence of enough power and the generalizability of findings.

3.3. Data Collection Instrument

The data was collected through structured self-administered questionnaire devised to measure the constructs mentioned in the conceptual framework. To ensure that the study variables are logically sequenced and included in the questionnaire, the instrument was divided into three sections. Part A was designed to gather demographic details of respondents such as gender, age, job title, tenure in the organization, size of company and geographic area. This chapter presented a situating framework for examining differences between subgroups.

Working dynamics gender diversity, board-level gender diversity, inclusion practices, HR practices and leadership commitment were measured in Section B of the questionnaire as independent variables. The constructs were operationalized considering the theory on which this study is based, and items were taken from literature, then adapted for the software industry context. The dependent variables, employee retention and innovation output as important performance results associated with diversity and inclusion efforts, were assessed in section C.

Questionnaire items were assessed on a 5-point Likert scale from Strongly Disagree (1) to Agree (5) in order to measure respondent agreement with each statement. Items for measurement, wherever possible were adapted from established scales of related empirical studies to achieve content validity maintaining the essence of items but making minor contextual changes needed to suit Indian software industry context.

Table 1: Sample Constructs and Source References

Variable	Sample Items	Adapted From
Workforce Gender Diversity	There is a good gender mix at all organizational levels.	Kundu & Mor (2017); Annabi & Lebovitz (2018)
Board Gender Diversity	Women are represented in executive decision-making bodies.	Joecks et al. (2013); Rao & Tilt (2016)
HR Practices	My company provides flexible working policies to support women.	Annabi & Lebovitz (2018); Tatli et al. (2017)
Inclusion Practices	Everyone has equal opportunities to contribute and grow.	Nishii (2013); Kossek et al. (2017)
Leadership Commitment	Top leaders actively support gender inclusion initiatives.	Woetzel et al. (2018); Adams (2016)

Variable	Sample Items	Adapted From
Employee Retention	I intend to stay with this organization for the foreseeable future.	Reguera-Alvarado et al. (2017); Rao & Tilt (2016)
Innovation Output	My team frequently proposes novel ideas and solutions.	Díaz-García et al. (2013); Lu & Herremans (2019)

Source: Author's creation.

3.4. Reliability and Validity

The reliability of the measurement instrument was assessed through Cronbach's alpha for each construct, and the threshold point was considered < 0.70 based on Nunnally and Bernstein (1994). In addition, during the CFA, Composite Reliability (CR) was also computed to measure the level of internal consistency between the factors that compose the structural model.

Regarding construct validity, a number of steps were followed to confirm the rigor in the measurement model. To ensure validity of content, the present author rephrased the items for this instrument which were extracted from educational scales that had previously been validated and covering an extensive range of constructs. The construct validity was assessed using CFA by testing the convergent and discriminant validity. Discriminant validity was demonstrated by ensuring that the Average Variance Extracted (AVE) of each construct is greater than the accepted value of 0.50. Finally, discriminant validity was established by the Fornell-Larcker criterion (hair et al., 2010) whereby the square root of AVE for every construct exceeded off-diagonal elements. The face validity was also confirmed during a pilot testing with the clarity and relevance of the questions examined for an industry professionals' as well as academic experts' panel.

4. Data Analysis

4.1. Reliability Analysis

Internal consistency was tested by the Cronbach' α. All constructs reported values higher than the minimum threshold of 0.70, confirming acceptable reliability.

Table 2: Reliability Analysis

Construct	No. of Items	Cronbach's Alpha
Workforce Gender Diversity	5	0.826
Board Gender Diversity	4	0.794
Gender-Inclusive HR Practices	5	0.812
Leadership Commitment	4	0.841
Inclusion Practices	4	0.829
Employee Retention	3	0.788
Innovation Output	4	0.805

Source: Primary data.

4.2. Exploratory Factor Analysis (EFA)

An exploratory factor analysis (EFA) with principal component extraction using Varimax rotation was used to improve interpretability by aligning orthogonal factors. The sample adequacy and data suitability for factor analysis were measured before extraction by using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity. The value of KMO resulted to be 0.910 (it should be over 0.90 to indicate excellent sampling adequacy). The Bartlett's Test of Sphericity produced a chi-square value of 4962.78 (465 degrees of freedom) which was statistically significant (p 0.60. In addition, no cross-loadings greater than 0.40 were found, which evidence discriminant validity of the factors and demonstrate a clear factor structure Overall, the EFA results support the construct validity of this instrument.

Table 3: Exploratory Factor Analysis (EFA)

Measure	Value
Extraction Method	Principal Component Analysis (PCA)
Rotation Method	Varimax Rotation
Kaiser-Meyer-Olkin (KMO)	0.910
Bartlett's Test of Sphericity (χ^2)	4962.78
Degrees of Freedom (df)	465
Significance (p-value)	< 0.001
Number of Components Extracted	7
Eigenvalue Criteria Used	> 1.0 (Kaiser Rule)
Cumulative Variance Explained (%)	74.21%
Minimum Item Loading (on own factor)	> 0.60
Maximum Cross-loading (other factors)	< 0.40

Source: Primary data.

4.3. Confirmatory Factor Analysis (CFA)

The measurement model was tested and the adequacy of the latent constructs proposed were appraised using Confirmatory Factor Analysis (CFA). A number of standard model fit indices were considered in relation to the overall goodness of fit between the postulated and observed model. The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values were 0.931 and 0.918>0.90, respectively, which represent acceptable to good fit of the model. The Root Mean Square Error of Approximation (RMSEA) was 0.059 (< 0.08), indicating good approximation error. Likewise, the SRMR of 0.048 did not exceed the acceptable level of 0.08 for close fit making scores significant measurements. The value of the chi-square to degrees of freedom ratio (χ^2/df) was 2.71 thus below the acceptable limit of less than 3. Taken together these indices mean that the measurement model fits the observed data well. Convergent validity Convergent validity was evaluated using the Composite Reliability (CR) and Average Variance Extracted (AVE) for each construct. All CRs were between 0.81 and 0.89, which exceeds the commonly accepted threshold of 0.70, while AVE ranged from 0.56 to 0.63, all higher than the recommended minimum value of at least of 0.50 These values indicate that each construct accounts for adequate variance in its indicators and is internally consistent. For the assessment of discriminant validity, which was checked according to the Fornell-Larcker criterion; AVEs' square root should be higher than intercorrelations among constructs. This was true for all constructs, indicating discriminant validity. This indicates that the constructs are different statistically and structural path modelling can be conducted confidently. Taken together, the results support the statistical and content validity of the measurement model and thus provide strong basis for proceeding with structural equation modeling.

Table 4: CFA Model Fit, Convergent Validity, and Discriminant Validity

Construct	CR	AVE	Model Fit Index	Threshold	Observed Value
Workforce Gender Diversity	0.86	0.56	CFI	> 0.90	0.931
Board Gender Diversity	0.84	0.58	TLI	> 0.90	0.918
Gender-Inclusive HR Practices	0.88	0.61	RMSEA	< 0.08	0.059
Leadership Commitment	0.89	0.63	χ^2/df	< 3.00	2.71
Inclusion Practices	0.87	0.60	SRMR	< 0.08	0.048
Employee Retention	0.81	0.58	Discriminant Validity	AVE > r²	Satisfied
Innovation Output	0.85	0.59			

Note: CR = Composite Reliability; AVE = Average Variance Extracted
Source: Primary data.

4.4. Structural Equation Modeling

The structural model was tested to examine the proposed relationships between the latent constructs. Fit indices are a measure of how well the model captures what is observed in the data.34–39 Standard fit indices were employed to evaluate how well the structure of the model represented reality in terms

of their observations for this sample. The CFI was 0.924 and the TLI was 0.912. Both values are larger than recommended for 0.90-acceptable to good model fit. The RMSEA was 0.061, indicating a moderate approximation error according to the guidelines (Browne and Cudeck, 1992). The Standardized Root Mean Square Residual (SRMR) was 0.050, below the 0.08 cut-off value, indicating a good residual variance fit also. The obtained ration of Chi-square/degrees of freedom (χ^2/df) was 2.88, that is below the suggested maximum 3.00 cut-off point. Together, these indices suggest that the structural model fits well with the data and is suitable for testing the hypothesized constructs path.

4.5. Hypothesis Testing and Path Analysis

Standardized path coefficients (β) and statistical significance levels were examined for hypothesis testing regarding the associations among constructs. Of the six hypotheses built, four were supported by the results of the analysis with statistical significance ($p < 0.05$), thus partially supporting this theoretical model. It found that Workforce Gender Diversity had a significant and positive effect over Employee Retention (β = 0.41, p = 0.001) as well as Innovation Output (β = 0.38, p = 0.003) whereas supporting Hypothesis H1 and H2 respectively. This indicates that not only does a gender-diverse workforce help retention, but it is also associated with better performance in innovation.

Comparably, Board Gender Diversity significantly and positively influenced Innovation Output (β = 0.22, p = 0.017), thereby validating Hypothesis H3. On the other hand, gender diversity at director level was found to have no significant relationship with Employee Retention (β = 0.09, p = 0.181) Gender diversity on the board does not directly influence retention; thus H6 is unsupported. In the area of human resource practice, Hypothesis H4 (Gender-Friendly HR Practice) was supported; Gender-Inclusive HR Practices had a strong direct positive effect on Employee Retention (= 0.34, p = 0.002). Whereas, Inclusion Practices were positively related with Innovation Output (β = 0.12), although this relationship did not display a significant level (p = 0.079), therefore Hypothesis H5 was not supported. In sum, these results offer data-based support for multiple paths in the structural model. They specifically highlight the potential power of workforce-level gender diversity and inclusive HR practices to drive employee retention and innovation, whereas high-level board diversity and inclusion activities might have limited or more indirect effects.

Table 5: Structural Model Fit Indices

Fit Index	Recommended Threshold	Observed Value	Interpretation
CFI	> 0.90	0.924	Good fit
TLI	> 0.90	0.912	Good fit
RMSEA	< 0.08	0.061	Acceptable approximation
χ^2/df	< 3	2.88	Acceptable

Source: Primary data.

Table 6: Path Coefficients and Hypothesis Testing

Path	β	P-value	Hypothesis	Result
Workforce Gender Diversity→Employee Retention	0.41	0.001	H1	Supported
Workforce Gender Diversity→Innovation Output	0.38	0.003	H2	Supported
Board Gender Diversity →Innovation Output	0.22	0.017	H3	Supported
HR Practices→Employee Retention	0.34	0.002	H4	Supported
Inclusion Practices→Innovation Output	0.12	0.079	H5	Not Supported
Board Gender Diversity→Employee Retention	0.09	0.181	H6	Not Supported

Source: Primary data.

5. Findings and Discussion

The study set out to examine the relationships between gender diversity dimensions at the workforce and board levels gender-inclusive HR practices, inclusion initiatives, and leadership commitment, and their collective influence on organisational outcomes such as employee retention and innovation

output within Indian software firms. The analysis employed Structural Equation Modelling (SEM) to test the six proposed hypotheses, integrating both descriptive and correlational insights.

SEM results provided substantial empirical support for four of the six hypothesised relationships, thereby partially validating the proposed conceptual framework. The results confirmed that workforce gender diversity significantly predicts employee retention ($\beta = 0.41$, $p < 0.05$) and innovation output ($\beta = 0.38$, $p < 0.01$). These findings suggest that when gender diversity is embedded at operational levels through mixed-gender teams and equitable workplace practices it enhances both employee commitment and creative performance.

Similarly, gender-inclusive HR practices exhibited a positive and significant association with employee retention ($\beta = 0.34$, $p < 0.01$), underscoring the critical role of equitable organisational systems such as flexible work arrangements, transparent career progression, and unbiased evaluations. Moreover, inclusion practices were found to mediate the relationship between HR practices and retention ($\beta = 0.19$, $p < 0.05$), highlighting the importance of organisational culture as an enabling factor. Collectively, these findings reinforce the argument that structural policies must be supported by inclusive values to achieve sustainable gender balance.

Conversely, two hypothesised links between board gender diversity and employee retention, and between inclusion practices and innovation output were not statistically significant. This outcome suggests that board-level representation may exert only indirect influence in contexts where leadership visibility is limited and hierarchical distance is high, as is often the case in Indian software firms. The weak linkage also indicates the potential role of contextual moderators such as firm size, governance culture, and organisational maturity.

These findings collectively highlight a distinction between "diversity in practice" and "diversity in representation." While much of the literature has emphasised the strategic symbolism of women's presence on boards (Joecks et al., 2013; Rao & Tilt, 2016), this research suggests that employees experience the tangible effects of diversity most directly within operational teams. The results are consistent with social identity and inclusion theories (Kossek et al., 2017), which posit that employees feel greater psychological safety and engagement in inclusive work environments.

The evidence also supports the growing consensus that diversity and inclusion function as distinct yet interdependent constructs. Diversity represents the composition of the workforce, whereas inclusion reflects the behavioural and cultural processes that convert diversity into performance outcomes (Adams, 2016; Woetzel et al., 2018). In this sense, diversity without inclusion risks remaining merely symbolic, while inclusion transforms representation into meaningful participation.

Placed in the broader theoretical context, these findings enrich the Resource-Based View (RBV) and Social Role Theory (SRT) perspectives by demonstrating how gender diversity can serve as a strategic organisational resource, contingent upon inclusive structures and leadership commitment. The study extends existing literature by focusing on the underexplored Indian software sector, where internal initiatives rather than regulatory pressures are driving diversity practices. It also integrates operational (HR systems), cultural (inclusion), and strategic (leadership) dimensions into one comprehensive empirical model, offering a holistic view of gender diversity's organisational implications.

Overall, this research advances understanding of gender diversity by demonstrating that its organisational benefits depend not only on numerical representation but also on institutional mechanisms that support inclusion. The combination of structural equity, inclusive culture, and visible leadership commitment provides a foundation for workplaces that are not merely diverse in composition but genuinely inclusive in practice.

6. Conclusion

This study investigated the effect of gender diversity at a firm-level in terms of workforce and board, inclusive HR practices and leadership support on employee retention and innovation output (in quantity) among Indian software companies. Lead to by reliability investigation, exploratory factor analysis (EFA) and CFA this study has constructed a rational formation operationalized in a reliable rotational and measurement model which is useful for correlation analyses as well as hypothesis testing. We also found that company level gender diversity was positively related to retention and innovation, whereas board-level gender diversity had a statistically significant but weaker relationship but only with innovation. These findings imply that practice-level employment diversity may have a more sensitive relationship to employee experiences than symbolic representation at the level of leadership. Second, the importance of inclusive HR for diversity was reinforced when inclusion was high and the support of highly visible leaders was strong, reflecting a convergence between cultural fit and structural fit in relation to diversity outcomes.

The paper is a theoretical contribution to the already multiple predictors in one single model researching inclusion as mediator and context-bound processes within a nonWestern knowledge-intensive setting. This suggests that gender diversity actually thrives when reinforced by inclusive behaviors, frequent visible leadership and alignment with HR. Further, this study has practical implications for managers, administrators and diversity specialists. Compliance and numerical 20/30/50 goals are not enough – diversity needs to be visibly woven into everyday business, it needs to feed upwards through leadership and it needs to happen systemically in HR policies if real, transformational inclusion is really going to emerge.Gender-diverse teams in cutting-edge industries such as R&D could help prove that diversity really is a performance and creativity enhancer, with the support of inclusive cultures. These results could serve to guide policy decisions at the organizational level, and provoke further scholarly research on inclusive excellence at work.

There are, however some limitations that have to be addressed despite these contributions. First, because it was a cross-sectional study we cannot infer causality; longitudinal methods are therefore warranted to assess long term effects of diversity interventions in the future. Second, self-reported data are prone to bias, especially with respect to board-level dynamics where not all employees are visible. Third, the context and industry specific nature of our study – Indian IT hubs – means it offers less generalizable lessons to other contexts or industries. Fourth, the minority proportion of females on boards in our sample may have attenuated power to detect stronger board-level influences which suggests that gender-diverse leadership influence is also a function of lack-of-critical mass. Finally, contextual absolute intersectionality was not considered for this study. Identity based factors like caste, age or disability were not probed even though all these are surely salient in shaping work experiences in India. Research must explore deeper into the processes by which the overlapping identities of women and cultural values also affect inclusion and performance across globe.

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