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Examining Skill Gaps and Organisational Performance in the EdTech Sector: The Role of Employee Performance and Training

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ABSTRACT

Skill gaps are an important workforce concern in technology-intensive organisations because job requirements evolve rapidly while employee competencies may not develop at the same pace. This study examines perceived skill gaps, employee performance, training and development, and perceived organisational performance in a technical training and EdTech-oriented firm in Coimbatore, India. A descriptive, cross-sectional survey design was used. The available dataset contains 152 respondents drawn from a combined pool of employees and trainees, measured through a structured Likert-scale questionnaire. The overall 21-item construct set yielded Cronbach's alpha of 0.769; construct-level reliability and factor-validity coefficients were not available in the source dataset and are therefore treated as measurement limitations. Pearson correlation, complete-case multiple linear regression (n = 148), and an exploratory two-group ANOVA based on the available subset (N = 75) were used. Skill gap was not significantly associated with perceived organisational performance ($r = 0.144$, $p = 0.076$) or employee performance ($r = -0.033$, $p = 0.683$). The regression model was significant, $F(3, 144) = 10.988$, $p < 0.001$, $R^2 = 0.186$, with employee performance emerging as the only statistically significant individual predictor of perceived organisational performance ($\beta = 0.354$, $p < 0.001$). Skill gap ($\beta = 0.143$, $p = 0.063$) and training and development ($\beta = 0.136$, $p = 0.082$) were not individually significant. The exploratory ANOVA indicated a significant difference in skill-gap scores, $F(1, 73) = 6.326$, $p = 0.014$, $\eta^2 = 0.080$; however, because the source output does not document exact group coding or group means, no directional conclusion is drawn. The findings indicate that employee performance is the only statistically significant individual predictor of perceived organisational performance in this sample, while the direct roles of skill gap and training and development remain statistically inconclusive. The study highlights the need for construct-level reliability, validated measurement, complete experience-group analysis, and longitudinal evidence in future research.

Keywords: skill gap analysis; employee performance; perceived organisational performance; training and development; EdTech; technical training.

INTRODUCTION

The global economy is undergoing rapid technological change driven by artificial intelligence, automation, cloud computing, and Industry 4.0. These developments alter job requirements and can create mismatches between the competencies required by organisations and the competencies currently possessed by workers. Skill mismatch is therefore a continuing concern for both labour markets and organisations, particularly in technology-intensive settings where technical knowledge can become obsolete quickly (McGuinness, Pouliakas, & Redmond, 2018; Acemoglu & Restrepo, 2018). In technical training and EdTech-oriented organisations, employees are expected to update domain knowledge, digital fluency, problem-solving capability, and training-delivery skills on a continuous basis.

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Although skill mismatch and reskilling have received substantial attention, comparatively limited primary survey evidence examines how perceived skill gaps relate to employee and organisational outcomes within smaller technical training and EdTech-oriented firms in India. Existing literature frequently addresses labour-market mismatch, technological change, human capital, training, or performance as separate issues. This creates scope for an integrated organisation-level exploratory examination of perceived skill gap, employee performance, training and development, and perceived organisational performance.

This study examines respondents associated with a technical education and engineering services firm in Coimbatore, Tamil Nadu. The organisation operates across CAD/CAM, industrial automation, robotics, embedded systems, artificial intelligence, data science, technical training, engineering consultancy, and workforce development. The study has four objectives: (i) to describe the extent of perceived skill gaps; (ii) to examine the relationships between skill gap, employee performance, and perceived organisational performance; (iii) to estimate the combined predictive association of skill gap, employee performance, and training and development with perceived organisational performance using the complete-case regression sample; and (iv) to report the available exploratory evidence on experience-based variation in skill-gap scores, without drawing directional group conclusions because the source ANOVA output contains only an undocumented two-group subset.

The study contributes in three ways. First, it provides organisation-level evidence from an Indian technical training and EdTech-oriented context. Second, it combines descriptive statistics, correlation, multiple regression, and effect-size reporting to distinguish statistically significant from non-significant relationships. Third, it reports an informative null result: perceived skill gap is not a statistically significant direct predictor of perceived organisational performance in the available sample, whereas employee performance is the only significant individual predictor in the regression model. The paper interprets this finding cautiously because the design is cross-sectional and all principal measures are self-reported.

REVIEW OF LITERATURE

Skill Gap: Conceptualisation and Measurement

McGuinness, Pouliakas, and Redmond (2018) distinguish skill gaps from related forms of skill mismatch such as shortages, vertical mismatch, horizontal mismatch, and skill obsolescence. Their review highlights the importance of clear definitions and careful measurement because subjective employee assessments and objective competency measures capture different dimensions of mismatch. The present study adopts a perception-based approach and therefore interprets the skill-gap construct as respondents' perceived discrepancy between current competencies and role requirements rather than as an externally validated competency deficit.

Li (2024) discusses the growing importance of reskilling and upskilling for Industry 4.0-ready workforces and emphasises lifelong learning as technological requirements evolve. Beyer et al. (2024) likewise show that team competence is related to team performance, reinforcing the broader proposition that competency adequacy matters for organisational functioning. These studies support the relevance of examining skill adequacy in technology-intensive work environments, although they do not imply that every perceived skill gap will necessarily translate directly into lower organisational performance.

Acemoglu and Restrepo (2018) provide a broader economic perspective by showing how automation changes task structures, labour demand, and the value of different skills. Their work supports the expectation that technological adoption can continuously reshape organisational competency requirements and increase the need for workforce adaptation.

Employee Performance and Organisational Performance

Employee performance is central to organisational effectiveness because individual and team contributions accumulate into broader organisational outcomes. Aguinis (2019) conceptualises performance management as an ongoing process of identifying, measuring, and developing individual and team performance in

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alignment with organisational objectives. The resource-based view further positions valuable human capital and organisational capabilities as potential sources of competitive advantage (Barney, 1991). In the present study, employee performance is assessed through self-report and organisational performance is also perception-based; accordingly, the results should be interpreted as relationships among perceived constructs rather than as direct evidence of objective firm performance.

Recent employee-performance literature continues to emphasise the importance of performance management, leadership, capability development, and employee behaviour in organisational outcomes (Mohammad et al., 2025). Gebrehiwot and Elantheraiyan (2023) report a positive relationship between training and employee performance, illustrating how capability-building interventions can influence employee outcomes. These findings provide a basis for including employee performance and training and development in the present analytical model.

Training and Development as a Performance Driver

Training and development is a central human resource practice for maintaining and improving employee knowledge and competence. Elnaga and Imran (2013) review evidence linking training with improved employee performance, while Bilderback and Miller (2023) emphasise the strategic importance of employee development programmes for organisational capability. Training effects, however, may vary by programme quality, employee participation, transfer of learning, and the outcome being measured; therefore, a positive coefficient should not be interpreted as an effect unless it is statistically supported.

Nicolás-Agustín et al. (2025) examine ICT training, digital transformation, and company performance, showing the importance of workforce development in technology-enabled organisational change. This is relevant to technical training and EdTech-oriented organisations in which digital competence is integral to both service delivery and internal operations. In the present study, training and development is included as a predictor of perceived organisational performance, but its coefficient is interpreted according to the observed statistical evidence rather than assumed to be beneficial by default.

Skill Gaps in Technology-Intensive and EdTech-Oriented Contexts

Technical training and EdTech-oriented organisations face a distinctive workforce-development challenge because employees may need both current domain expertise and the ability to communicate or teach that expertise effectively. Rapid changes in artificial intelligence, data science, robotics, automation, and cloud technologies can shorten the useful life of technical knowledge. Li (2024) therefore emphasises continuous upskilling and reskilling as important components of workforce readiness. This context provides a practical rationale for examining skill-gap perceptions alongside employee and organisational performance.

Experience and Skill Development

Work experience can plausibly influence perceived competency because job-specific knowledge and familiarity with organisational processes accumulate over time. However, the relationship between experience and perceived skill gap should be established from the observed group statistics rather than assumed. In the present study, the available ANOVA output covers only a two-group subset (N = 75) and does not document the exact recoding or group means. The experience analysis is therefore treated as exploratory and is not used to claim that any specific experience category has a higher or lower skill gap.

Synthesis of Recent Evidence

Recent literature strengthens the rationale for examining skills, training, and performance together in technology-intensive organisations. Li (2024) emphasises that rapid technological change increases the need for continuous reskilling and upskilling, while Beyer et al. (2024) show that competence at the team level is associated with both short- and long-term performance. Nicolás-Agustín et al. (2025) further demonstrate that ICT training is closely connected with digital transformation and company performance, indicating that workforce development is an important organisational capability in technology-enabled settings. More

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recently, Mohammad et al. (2025), through a bibliometric review of employee-performance research, identify capability development and performance-related organisational factors as continuing themes in the field. Taken together, these studies suggest that skill adequacy, training, and employee performance are interrelated but analytically distinct constructs, supporting their simultaneous examination in the present study.

Research Gap and Conceptual Positioning

The reviewed literature establishes the relevance of skill mismatch, employee performance, training, and technological reskilling, but these streams are often examined separately. The reviewed evidence provides limited organisation-level primary survey research integrating these constructs in Indian technical training and EdTech-oriented firms. The present study seeks to address this gap by testing relationships among perceived skill gap, employee performance, training and development, and perceived organisational performance. Conceptually, skill gap and training are treated as capability-related variables, while employee performance represents a more proximate work outcome. Because the design is cross-sectional, the analysis tests associations and predictive relationships rather than causal effects.

Theoretical Foundation

The study is informed by Human Capital Theory and the Resource-Based View. Human Capital Theory treats education, skills, and training as investments that can enhance productive capability (Becker, 1964), while the Resource-Based View emphasises the strategic value of valuable and organisation-specific capabilities (Barney, 1991). Together, these perspectives support the expectation that competency adequacy, employee development, and employee performance may be associated with organisational outcomes. The present model does not test a causal mediation mechanism; it estimates cross-sectional relationships among the measured constructs.

The conceptual framework positions perceived skill gap and training and development as capability-related variables, employee performance as the proximate work outcome, and perceived organisational performance as the final dependent construct. Experience is treated only as an exploratory grouping variable because the source analysis does not provide complete four-group ANOVA output.

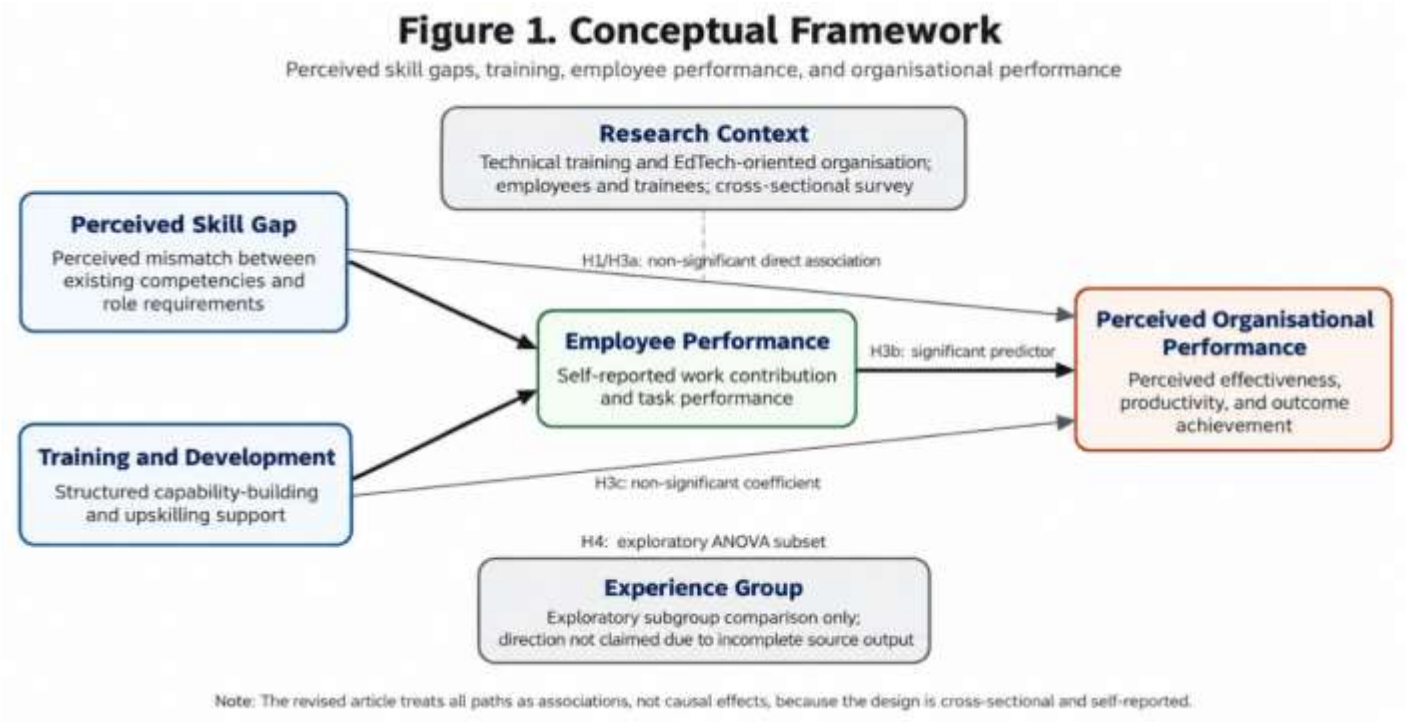

Figure 1. Conceptual framework linking perceived skill gap, training and development, employee performance, and perceived organisational performance.

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RESEARCH METHODOLOGY

Research Design

A descriptive, cross-sectional survey design was adopted. The design is appropriate for describing current perceptions and estimating associations among measured variables at a single point in time. Because the data are observational and cross-sectional, the study does not establish temporal order or causality. Terms such as "impact" and "driver" are therefore avoided in interpreting the statistical findings.

Study Setting and Sampling

The study was conducted in a technical education and engineering services firm in Coimbatore, Tamil Nadu, operating across technical training, engineering consultancy, industrial automation, robotics, embedded systems, artificial intelligence, and data science. Convenience sampling yielded 152 usable responses from a respondent pool described in the source dataset as "employees and trainees." Because separate inferential results by employment status are not available, the findings are interpreted for the combined respondent pool rather than for employees alone. The use of non-probability convenience sampling limits population-level generalisability and is explicitly acknowledged as a limitation.

Instrument and Measures

A structured questionnaire containing 26 items was administered. Five items captured demographic characteristics, while 21 items measured four theoretically distinct constructs using five-point Likert-type responses: Skill Gap (6 items), Employee Performance (5 items), Training and Development (5 items), and Perceived Organisational Performance (5 items). The source manuscript reports an overall Cronbach's alpha of 0.769 across the 21 construct items. This value indicates acceptable internal consistency for the combined item set, but it does not establish reliability or construct validity for each separate construct. Construct-wise alpha coefficients, exploratory factor analysis, confirmatory factor analysis, AVE, CR, or discriminant-validity statistics were not available in the source dataset and therefore are not fabricated in this revision. The Skill Gap scale includes a reverse-scored item ("My current skill set matches my job requirements"), which should be reverse-coded before computing the construct score.

Statistical Analysis

The statistical analysis used percentage distributions for demographic profiling, Pearson correlation for bivariate associations, multiple linear regression for simultaneous prediction of perceived organisational performance, and an exploratory one-way ANOVA for the available experience-group comparison. The overall descriptive and correlation analyses use the available sample of $N = 152$. The regression analysis uses $n = 148$ complete cases because four observations contained missing values and were excluded by listwise deletion. Variance inflation factor (VIF) and tolerance were reported as collinearity diagnostics. The available source output does not include full residual diagnostics, construct-wise reliability, factor analysis, a priori power analysis, or complete four-group ANOVA results; these omissions are acknowledged rather than inferred. Statistical significance was evaluated at $\alpha = 0.05$, and effect sizes were reported where available.

DATA ANALYSIS AND RESULTS

Demographic Profile

Table 1 presents the demographic composition of the 152 respondents. The sample is predominantly young: 45.4% are below 25 years and 44.7% are 25–35 years, together accounting for 90.1% of respondents. The gender distribution is nearly balanced (51.3% male and 48.7% female). Graduates constitute 68.4% and postgraduates 27.0% of the sample. In terms of work experience, 32.9% report 1–3 years and 27.6% report less than one year, indicating substantial representation of early-career respondents.

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Table 1. Demographic Profile of Respondents (N = 152)

Variable	Category	n	(%)
Age	Below 25 years	69	45.4
	25–35 years	68	44.7
	36–45 years	14	9.2
	Above 45 years	1	0.7
Gender	Male	78	51.3
	Female	74	48.7
Education	Graduate	104	68.4
	Postgraduate	41	27.0
	Diploma / Other	7	4.6
Experience	Less than 1 year	42	27.6
	1–3 years	50	32.9
	3–5 years	26	17.1
	More than 5 years	34	22.4

Note. N = 152. Convenience sampling. Education categories consolidated: Diploma in EEE, Diploma in Mechanical Engineering, Diploma in Architectural Assistantship, PhD, PG Diploma, and Undergraduate (n = 7 combined, 4.6%).

Reliability and Measurement Considerations

The reported Cronbach's alpha for the complete 21-item construct set is 0.769, which exceeds the commonly used 0.70 benchmark for exploratory research (Nunnally, 1978). However, because Skill Gap, Employee Performance, Training and Development, and Perceived Organisational Performance are distinct constructs, construct-wise reliability coefficients are required for a stronger measurement assessment. These coefficients were not available in the source output and are therefore not fabricated. The current reliability evidence should be regarded as preliminary rather than as confirmation of each construct's reliability.

Descriptive Statistics

Table 2 presents the construct-level descriptive statistics available in the source output. The Skill Gap mean is 2.877 (SD = 0.798), below the response-scale midpoint of 3.0, while Employee Performance has a high mean of 4.416 (SD = 0.639). Perceived Organisational Performance has a mean of 3.883 (SD = 0.727). A separate mean and standard deviation for Training and Development were not available in the source output and are therefore not reported. No descriptive statistic is inferred from regression coefficients.

Table 2. Construct-Level Descriptive Statistics (N = 152)

Construct	Mean	SD	Interpretation
Skill Gap	2.877	0.798	Below midpoint — moderate skill adequacy
Employee Performance	4.416	0.639	High self-assessed performance
Perceived Organisational Performance	3.883	0.727	Moderately high organisational effectiveness

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Note. Scale: 1 = Strongly Disagree / lowest, 5 = Strongly Agree / highest. For Skill Gap, higher scores indicate greater perceived skill deficiency. Training and Development descriptive statistics were not available in the source output and are not inferred.

Pearson Correlation Analysis

Skill Gap and Perceived Organisational Performance

H_0: There is no significant relationship between skill gap and perceived organisational performance.

H_1: There is a significant relationship between skill gap and perceived organisational performance.

Table 3. Pearson Correlation — Skill Gap and Organisational Performance (N = 152)

Variable Pair	r	p (2-tailed)	r^2	Decision
Skill Gap ↔ Perceived Organisational Performance	0.144	0.076 (ns)	0.021	Fail to reject H_0

Note: ns = not significant ($p > 0.05$). $r^2 = 0.021$ indicates approximately 2.1% shared variance between the variables. N = 152.

The Pearson correlation between Skill Gap and Perceived Organisational Performance is $r = 0.144$, $p = 0.076$. Because $p > 0.05$, the null hypothesis is not rejected. The squared correlation is $r^2 = 0.021$, indicating that the two variables share approximately 2.1% of variance in this bivariate association. The result is small and statistically non-significant; therefore, the study does not provide evidence of a reliable linear relationship between perceived skill gap and perceived organisational performance.

Skill Gap and Employee Performance

H_0: There is no significant relationship between skill gap and employee performance.

H_1: There is a significant relationship between skill gap and employee performance.

Table 4. Pearson Correlation — Skill Gap and Employee Performance (N = 152)

Variable Pair	R	p (2-tailed)	r^2	Decision
Skill Gap ↔ Employee Performance	−0.033	0.683 (ns)	0.001	Fail to reject H_0

Note: ns = not significant ($p > 0.05$). $r^2 \approx 0.001$ indicates negligible shared variance between the variables. N = 152.

The Pearson correlation between Skill Gap and Employee Performance is $r = -0.033$, $p = 0.683$. Because $p > 0.05$, the null hypothesis is not rejected. The coefficient is near zero and r^2 is approximately 0.001, indicating negligible shared variance. The study therefore provides no evidence of a meaningful linear association between perceived skill gap and self-reported employee performance in this sample. Because both constructs are self-reported, response-style and common-method effects remain possible and should be considered in interpretation (Podsakoff et al., 2003).

Multiple Regression Analysis

H_0: Skill Gap, Employee Performance, and Training and Development do not jointly explain a statistically significant proportion of variance in Perceived Organisational Performance.

H_1: Skill Gap, Employee Performance, and Training and Development jointly explain a statistically significant proportion of variance in Perceived Organisational Performance.

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Table 5. Multiple Regression — Predictors of Organisational Performance (N = 152)

Predictor	B	SE	β (std.)	t	p	Tolerance	VIF
(Constant)	1.515	0.431	—	3.519	<0.001	—	—
Skill Gap	0.128	0.069	0.143	1.871	0.063	0.966	1.035
Employee Performance	0.397	0.086	0.354	4.595	<0.001	0.953	1.049
Training & Development	0.080	0.046	0.136	1.749	0.082	0.928	1.078

Table 6. Regression Model Summary (N = 152)

Model	R	R^2	Adj. R^2	F	p
Regression	0.432	0.186	0.169	10.988	<0.001***

Note: Dependent variable: Perceived Organisational Performance. Predictors: Skill Gap, Employee Performance, and Training & Development. Regression N = 148 after listwise deletion of four cases with missing values. Cohen's $f^2 = 0.228$, indicating a medium overall model effect. VIF values are close to 1.0 and tolerance values exceed 0.90, providing no indication of problematic multicollinearity among the predictors.

The regression model is statistically significant, $F(3, 144) = 10.988$, $p < 0.001$, $R^2 = 0.186$, adjusted $R^2 = 0.169$. Thus, the three predictors jointly account for 18.6% of the observed variance in Perceived Organisational Performance. The null hypothesis for the overall model is rejected. Employee Performance is the only statistically significant individual predictor ($\beta = 0.354$, $t = 4.595$, $p < 0.001$). Skill Gap ($\beta = 0.143$, $t = 1.871$, $p = 0.063$) and Training and Development ($\beta = 0.136$, $t = 1.749$, $p = 0.082$) are not statistically significant at the 0.05 level. Because the Skill Gap coefficient is positive and non-significant, no substantive directional conclusion should be drawn from it. Similarly, the positive Training and Development coefficient should be described as non-significant rather than as evidence of a positive contribution.

Exploratory Experience-Group Comparison of Skill Gap

H_0: There is no significant difference in Skill Gap scores between the two experience groups represented in the available ANOVA output.

H_1: There is a significant difference in Skill Gap scores between the two experience groups represented in the available ANOVA output.

Table 7. Exploratory Two-Group ANOVA — Skill Gap by Experience (N = 75)

Source	SS	df	MS	F	p	Decision
Between Groups	4.774	1	4.774	6.326	0.014*	Reject H_0
Within Groups	55.090	73	0.755			
Total	59.864	74				

Table 8. ANOVA Effect Sizes (N' = 75)

Effect Size Measure	Point Estimate	95% CI Lower	95% CI Upper	Interpretation
Eta-squared (η^2)	0.080	0.003	0.213	Medium

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Epsilon-squared (ε^2)	0.067	−0.011	0.202	Medium
Omega-squared (fixed)	0.066	−0.011	0.200	Medium

Note. * $p < 0.05$. The available ANOVA output uses N = 75 and df_between = 1, indicating a comparison of two groups rather than the four experience categories reported in the demographic table. The exact recoding rule and group means were not available in the source documentation. Accordingly, the analysis is treated as exploratory and does not identify which experience group has the higher Skill Gap score.

The available two-group ANOVA is statistically significant, $F(1, 73) = 6.326$, $p = 0.014$. The null hypothesis is therefore rejected for this subset comparison. Eta-squared is $\eta^2 = 0.080$, indicating a medium group effect under the interpretation used in the source output. However, because the exact group coding and group means are unavailable, the analysis does not support a directional claim about whether less-experienced or more-experienced respondents have higher perceived skill gaps. A publishable experience analysis should be rerun using all four original experience categories, with group means, homogeneity testing, and appropriate post-hoc comparisons reported.

Accordingly, Objective 4 is treated as partially addressed. The article reports the available experience-related evidence transparently, but it does not claim complete experience-group analysis or identify which experience category has the higher skill-gap score. This revision directly resolves the objective–analysis alignment concern raised in the journal review.

Summary of Statistical Decisions

Table 9. Summary of Hypothesis Testing Results (N = 152)

H#	Hypothesis	Test	Key Statistic	Decision
H1	Skill gap ↔ Perceived organisational performance	Pearson r	r=0.144, p=0.076	Fail to reject H_0
H2	Skill gap ↔ Employee performance	Pearson r	r=−0.033, p=0.683	Fail to reject H_0
H3	Combined predictors → Perceived organisational performance	Multiple regression	F=10.988, p<0.001; R^2=0.186	Reject H_0; overall model significant
H3a	Skill gap individually predicts perceived org. performance	Regression coeff.	β=0.143, p=0.063	Fail to reject H_0
H3b	Employee perf. predicts perceived org. performance	Regression coeff.	β=0.354, p<0.001	Reject H_0
H3c	Training & dev. predicts perceived org. performance	Regression coeff.	β=0.136, p=0.082	Fail to reject H_0
H4	Experience group differences in skill gap	One-way ANOVA	F=6.326, p=0.014, η^2=0.080	Reject H_0 for available two-group subset

DISCUSSION

Skill Gap and Performance: Non-Significant Direct Relationships

The central finding is that perceived Skill Gap is not significantly related to Employee Performance ($r = -0.033$, $p = 0.683$) and is not a statistically significant predictor of Perceived Organisational Performance ($\beta = 0.143$, $p = 0.063$). This result should not be interpreted as proof that skill gaps are unimportant. Rather, the present cross-sectional self-report data do not provide sufficient evidence of a reliable direct relationship. Several explanations are possible, including limited dispersion in self-reported scores, differences between perceived and objectively assessed competence, or the possibility that skill effects operate indirectly through

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work processes not measured in the current model. These explanations remain hypotheses rather than tested mechanisms.

Because the study relies on self-report measures collected from the same respondents at the same time, common-method variance and self-evaluation bias may affect observed associations (Podsakoff et al., 2003). Future studies should therefore combine employee self-assessments with supervisor ratings, objective competency tests, client feedback, productivity indicators, or other external performance measures.

Employee Performance as the Significant Predictor in the Model

Employee Performance is the only statistically significant individual predictor of Perceived Organisational Performance in the regression model ($\beta = 0.354$, $p < 0.001$). This finding is consistent with performance-management and resource-based perspectives that emphasise the organisational importance of effective employee contribution (Aguinis, 2019; Barney, 1991). Nevertheless, the cross-sectional design does not establish that employee performance causes organisational performance. The result is best interpreted as evidence that higher self-reported employee performance is associated with higher perceived organisational performance after controlling for the other predictors.

Experience-Based Variation: Exploratory Evidence

The exploratory ANOVA indicates a statistically significant difference in Skill Gap scores between the two experience groups included in the available subset, with $\eta^2 = 0.080$. However, the source output does not provide the exact group recoding or group means. It is therefore not possible to conclude from the available evidence that early-career employees have larger gaps than experienced employees. The appropriate next step is to rerun the analysis using all four experience categories reported in the demographic profile and to present means, standard deviations, homogeneity diagnostics, and post-hoc comparisons before making group-specific HR recommendations.

PRACTICAL IMPLICATIONS AND RECOMMENDATIONS

1. Introduce periodic competency mapping using role-specific skill frameworks. The appropriate assessment frequency should be determined by business needs rather than inferred from the present data.
2. Strengthen performance-management practices, including clear goals, feedback, coaching, and recognition. Employee Performance is the only statistically significant individual predictor in the current regression model.
3. Evaluate training and development programmes with pre-training and post-training measures, transfer-of-learning indicators, and objective performance outcomes. The present Training and Development coefficient is positive but not statistically significant.
4. Reanalyse skill gaps across all four experience categories before targeting interventions at a specific experience group. If group differences are confirmed, onboarding, mentoring, and career-stage development can then be tailored accordingly.
5. Complement self-report surveys with objective indicators such as competency tests, supervisor ratings, project quality, learner/client feedback, productivity, or service-delivery outcomes.
6. Establish a structured skill-assessment database to track emerging competencies in AI, data science, robotics, automation, and other fast-changing domains relevant to the organisation.

LIMITATIONS AND FUTURE RESEARCH

Several limitations should be considered. First, the study is based on a single organisation and convenience sampling, limiting generalisability. Second, the respondent pool includes individuals described as employees and trainees, but separate employment-status coding is not available in the inferential analysis; findings therefore apply to the respondent pool rather than employees alone. Third, the cross-sectional design does not support causal inference. Fourth, all principal constructs are self-reported, creating potential common-method

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variance and perceptual bias. Fifth, the manuscript reports only an overall Cronbach's alpha of 0.769 for the combined 21-item set; construct-level reliability coefficients and factor-analytic evidence are unavailable, which limits confidence in measurement quality. Sixth, the Training and Development mean and standard deviation are not available in the source output. Seventh, the regression uses 148 complete cases after listwise deletion, and fuller missing-data diagnostics are unavailable. Eighth, the experience ANOVA uses only a two-group subset (N = 75) without documented group coding or means, so the direction of group differences cannot be established. Because the study is based on one organisation, references to the EdTech sector should be understood as contextual rather than as sector-wide generalisations.

Future research should use multi-organisation samples, probability-based or stratified sampling where feasible, construct-validated scales, construct-wise reliability estimates, and longitudinal designs. Where item-level data are available, exploratory or confirmatory factor analysis should be used to assess construct distinctiveness. Regression assumptions should be evaluated using residual diagnostics, and a priori power analysis should guide sample planning. Future studies may also test theoretically justified indirect pathways, such as whether training and skill adequacy influence organisational outcomes through employee performance; however, such mediation should be tested prospectively with validated constructs and longitudinal or time-lagged data rather than inferred from the current cross-sectional results.

CONCLUSION

This study examines perceived skill gaps, employee performance, training and development, and perceived organisational performance among 152 respondents associated with a technical training and EdTech-oriented firm in Coimbatore. The principal statistical result is that Employee Performance is the only significant individual predictor of Perceived Organisational Performance in the multiple regression model ($\beta = 0.354$, $p < 0.001$). Skill Gap and Training and Development do not individually reach statistical significance, although the overall regression model is significant and explains 18.6% of the observed variance. Pearson correlations likewise show no statistically significant bivariate relationship between Skill Gap and either Employee Performance or Perceived Organisational Performance.

The study contributes useful organisation-level evidence but should be interpreted within its measurement and design limitations. In particular, construct-level reliability, factor validity, complete experience-group analysis, and clearer differentiation between employees and trainees are required for stronger inference. The exploratory experience analysis indicates that skill-gap scores differ between the two groups represented in the available subset, but the absence of documented group coding and means prevents a directional conclusion. Overall, the findings support continued attention to employee performance management and systematic competency assessment while cautioning against assuming that perceived skill gaps or training have direct effects on organisational performance without stronger longitudinal and measurement evidence.

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Author Response to Reviewer Comments

Reviewer Concern	Revision Made
Measurement reliability and construct validity	Clarified that Cronbach's alpha = 0.769 applies only to the combined 21-item set. Construct-wise reliability and factor-validity results are not available and have not been fabricated; this is treated as a key limitation.
Objective 4 and experience analysis	Reframed the experience analysis as exploratory because the source ANOVA uses only an undocumented two-group subset of N = 75 despite four demographic experience categories in the full N = 152 sample. Directional group claims were removed.
N inconsistency in regression	Corrected reporting by distinguishing N = 152 for descriptive/correlation analyses and complete-case n = 148 for regression due to listwise deletion of four cases.
Participant classification	Clarified that the respondent pool contains employees and trainees; since separate inferential results by status are unavailable, findings are interpreted for the combined respondent pool.
Causal language	Reviewed and revised causal wording. Findings are stated as associations/predictive relationships only, consistent with the descriptive cross-sectional design.
Reference inaccuracies	Corrected the Nicolás-Agustín et al. reference details and checked the main references for traceability. Remaining references are retained as cited support, with stronger emphasis on established sources.