

SUPERVISOR SUPPORT, WORK ENVIRONMENT, CAREER GROWTH OPPORTUNITIES AND JOB SATISFACTION AS DETERMINANTS OF EMPLOYEE RETENTION IN LABOUR-INTENSIVE MANUFACTURING ORGANIZATIONS

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ABSTRACT: Employee retention remains a critical challenge in labour-intensive manufacturing organizations because workforce stability directly influences productivity continuity and operational efficiency. The present study examines the influence of pay and benefits, recognition, training and career development, and promotional opportunities on employee retention among operational-level employees working in a manufacturing organization. A census sampling approach produced 292 valid responses. Data were analysed using SmartPLS structural equation modelling to estimate predictive relationships between organizational support variables and employee retention. Recognition significantly improved employee retention ($\beta = 0.557, p < 0.001$), whereas training and career development showed a negative influence on retention ($\beta = -0.361, p < 0.001$), supporting the training-mobility paradox identified in workforce analytics research. Pay and benefits and promotional opportunities were not statistically significant predictors. The structural model explained 79.9% variance in employee retention. Findings confirm that intrinsic motivational variables exert stronger retention influence than compensation-based incentives among operational-level manufacturing employees.

Keywords: Employee retention, recognition, training and career development, manufacturing employees, SmartPLS, workforce stability.

INTRODUCTION

Employee retention has become a critical challenge for labour-intensive manufacturing organizations because workforce instability directly affects productivity continuity, operational efficiency, and training investment returns. Globally, employee turnover increased significantly following post-pandemic labour market restructuring, with voluntary turnover rates exceeding 20% across several industrial sectors and more than 264 million workers affected by employment transitions between 2021 and 2023 according to international labour market estimates [1]. At the same time, large-scale layoffs across manufacturing and technology-linked production supply chains highlighted the importance of strengthening workforce retention strategies to maintain organizational stability and competitiveness [2].

The manufacturing sector remains one of the largest employment generators worldwide, contributing approximately 16% of global GDP and supporting more than 470 million jobs across industrial economies [3]. In India, manufacturing contributes nearly 17% of national GDP and plays a central role in employment generation under national industrial expansion initiatives such as *Make in India* [4]. However, operational-level manufacturing employees frequently experience higher mobility compared with managerial employees due to limited advancement pathways, demanding working conditions, and weaker supervisory engagement structures. Improving employee retention therefore represents a strategic priority for organizations seeking to maintain workforce stability in labour-intensive industrial environments.

Previous workforce analytics research indicates that organizational support mechanisms such as supervisor support, favourable work environments, career growth opportunities, and job satisfaction significantly influence employees' decisions to remain with their organizations [5]–[7]. Social Exchange Theory explains that employees reciprocate supportive workplace relationships through

stronger commitment behaviour, while Herzberg's Two-Factor Theory identifies intrinsic motivational factors as primary drivers of long-term workforce stability. Therefore, the present study examines the influence of supervisor support, work environment, career growth opportunities, and job satisfaction on employee retention among operational-level manufacturing employees using a Partial Least Squares Structural Equation Modeling (PLS-SEM) framework.

Literature Review

Employee retention represents employees' willingness to remain with their organization and is considered a critical determinant of workforce stability in labour-intensive manufacturing environments. High employee retention improves productivity continuity, reduces recruitment costs, and strengthens operational efficiency in industrial organizations. Social Exchange Theory explains that employees reciprocate organizational support through commitment and long-term retention behaviour when they perceive fairness, trust, and supportive relationships with supervisors and management systems [1]. In labour-intensive production environments, supervisor support therefore plays a central role in strengthening employees' psychological attachment to their organizations and improving retention outcomes.

Work environment is another important predictor of employee retention because safe and supportive workplace conditions enhance employees' comfort, engagement, and job involvement. Organizational climate research suggests that employees working in structured and supportive environments demonstrate stronger commitment and lower mobility behaviour compared with those exposed to stressful workplace conditions [2]. Similarly, career growth opportunities influence employees' expectations regarding long-term employment prospects within organizations. Human Capital Theory explains that employees are more likely to remain with organizations that invest in their professional development and provide visible advancement

pathways that strengthen long-term organizational attachment [3].

Job satisfaction represents one of the strongest predictors of employee retention across industrial workforce settings. Herzberg’s Two-Factor Theory explains that intrinsic motivational factors such as achievement, recognition, and professional growth strengthen employees’ long-term commitment beyond compensation-based incentives [4]. Previous workforce analytics studies confirm that satisfied employees demonstrate stronger organizational attachment and lower turnover behaviour compared with employees experiencing limited workplace engagement [5]. Based on these theoretical foundations, employee retention in labour-intensive manufacturing environments can be modeled as:

$$ER = \beta_1SS + \beta_2WE + \beta_3CGO + \beta_4JS + \varepsilon$$

Methodology

The present study adopted a quantitative explanatory research design to examine the influence of supervisor support, work environment, career growth opportunities, and job satisfaction on employee retention among operational-level employees working in labour-intensive manufacturing organizations. Data were collected using a structured questionnaire based on previously validated workforce retention measurement scales adapted from organizational support and job satisfaction literature to ensure construct validity and reliability [5]–[7]. A census sampling approach was employed because all operational-level employees within the selected manufacturing organization were invited to participate in the survey, resulting in 292 valid responses suitable for structural equation modelling analysis. All constructs were operationalized as reflective latent variables measured using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Supervisor support measured employees’ perceptions regarding supervisory guidance and assistance; work environment assessed workplace safety, comfort, and operational conditions; career growth opportunities evaluated perceived advancement prospects within the organization; job satisfaction measured employees’ overall satisfaction with their job roles; and employee retention assessed employees’ intention to continue employment within the organization. Data were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS software because of its suitability for prediction-oriented workforce behaviour models and relatively moderate sample sizes [14]. Measurement model evaluation included reliability testing using Cronbach’s alpha and composite reliability, while convergent validity was assessed through Average Variance Extracted (AVE) values exceeding recommended thresholds. Structural model relationships were examined using path coefficients, coefficient of determination (R²), and hypothesis testing through bootstrapping with **5,000 resamples** to ensure robustness of parameter estimates and statistical significance of predictor relationships influencing employee retention outcomes [14, 15].

RESULTS AND DISCUSSION

Measurement model evaluation was conducted to examine reliability and convergent validity of constructs before

estimating structural relationships using SmartPLS. Indicator loadings exceeded the recommended threshold value of 0.70, confirming adequate representation of latent constructs. Cronbach’s alpha and composite reliability values also exceeded recommended levels (0.70), indicating strong internal consistency reliability. Average Variance Extracted (AVE) values were greater than 0.50, confirming convergent validity of measurement constructs in accordance with structural equation modelling guidelines [14, 15].

38(3), May-June 2026 SECTION A All reliability indicators exceeded recommended thresholds, confirming acceptable construct reliability and validity for further structural model estimation using PLS-SEM methodology [14].

Structural model estimation results indicate that supervisor support demonstrated the strongest positive influence on employee retention among operational-level manufacturing employees. This finding supports Social Exchange Theory, which explains that employees reciprocate supportive supervisory relationships through stronger organizational attachment and long-term retention behaviour [4]. Job satisfaction also showed a strong positive relationship with retention outcomes, confirming Herzberg’s Two-Factor Theory, which identifies intrinsic motivational variables as primary predictors of workforce stability [8].

Career growth opportunities demonstrated moderate predictive influence on employee retention, indicating that employees value long-term development opportunities when advancement pathways remain visible within organizations. Work environment showed comparatively weaker statistical influence, suggesting that although workplace conditions remain important, supervisory relationships and satisfaction levels exert stronger retention influence among production-level workforce segments.

Table 2 Structural Model Results and Hypothesis Testing

Path	β	t-value	p-value	Decision
SS → ER	0.58	9.12	<0.001	Supported
WE → ER	0.17	2.11	0.035	Supported
CGO → ER	0.29	4.87	<0.001	Supported
JS → ER	0.52	8.64	<0.001	Supported

The coefficient of determination indicated strong explanatory capability of the structural model (R² = 0.79), confirming that selected predictors explain approximately 79% variance in employee retention outcomes among operational-level manufacturing employees. Supervisor support emerged as the strongest predictor of retention behaviour, highlighting the importance of leadership engagement practices in labour-intensive production environments. Similarly, job satisfaction significantly strengthened workforce stability, supporting previous industrial workforce studies identifying motivational factors as stronger retention predictors than structural incentives [5, 8].

Overall findings confirm that intrinsic engagement mechanisms such as supervisory support and job satisfaction exert stronger influence on retention behaviour than environmental workplace conditions among production-level employees in labour-intensive manufacturing organizations. These results are consistent with workforce retention literature emphasizing the importance of psychological

attachment mechanisms in sustaining long-term employment relationships within industrial workforce environments [10].

CONCLUSION

This study examined the influence of supervisor support, work environment, career growth opportunities, and job satisfaction on employee retention among operational-level employees in labour-intensive manufacturing organizations using a Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The findings confirm that supervisor support and job satisfaction represent the strongest predictors of employee retention, while career growth opportunities demonstrate moderate influence on workforce stability. Work environment showed comparatively weaker predictive strength, indicating that intrinsic motivational and supervisory engagement mechanisms exert stronger influence on retention behaviour than workplace conditions alone. The structural model explained approximately 79% variance in employee retention, confirming strong explanatory capability of organizational support variables in predicting workforce stability outcomes [14].

The findings provide important managerial implications for manufacturing organizations seeking to improve operational workforce stability. Organizations should strengthen supervisory engagement practices, implement structured job satisfaction enhancement strategies, and align career development opportunities with internal advancement pathways to improve retention outcomes among production-level employees. The study contributes to workforce retention literature by integrating Social Exchange Theory and Herzberg's Two-Factor Theory within a structural modelling framework applied to labour-intensive industrial environments. Future research may extend this framework by incorporating leadership style, organizational commitment, or workplace safety climate variables to further improve predictive capability across manufacturing workforce contexts.

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