



Empirical assessment of factors dictating employee retention in the automotive component manufacturing sector: A case study of auto industries in Chennai

Dr. Sundarapandiyan Natarajan¹, Dr. D Visagarmoorthi¹, R Lakshmikanth², S Krishnaveni², V Vidhya², S Kavya²

¹ Professor, Department of Management Studies, Adithya Institute of Technology, Coimbatore, Tamil Nadu, India

² Assistant Professors, Department of Management Studies, Adithya Institute of Technology, Coimbatore, Tamil Nadu, India

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Abstract

Workforce stability acts as a critical prerequisite for sustaining manufacturing velocity, strict quality controls, and optimal operating margins within the labour-intensive automobile component manufacturing sector. This empirical paper investigates the multi-dimensional organizational and psychological determinants that influence employee retention dynamics at Auto Industries, Chennai. Utilizing a descriptive research framework and cross-sectional data captured via a structured 5-point Likert scale questionnaire, this study surveys workers across shop-floor operations and administrative functions. The empirical findings reveal an absolute positive consensus (100.00%) concerning institutional safety architecture and organizational commitment to workforce training based on a finalized dataset of N = 179 respondents. Mean score analysis confirmed robust satisfaction regarding structured Dojo training systems (M = 4.39) and supervisor support infrastructures (M = 4.32). Crucially, correlation analysis substantiated that perceived long-term organizational viability (r = 0.662) and transparent promotion tracks (r = 0.609) exhibit the strongest direct associations with long-term employee retention. Conversely, the analysis highlights latent vulnerabilities surrounding extrinsic reward recognition (M = 3.90) and active job motivation (M = 3.84). Strategic recommendations focus on deploying structured non-financial appreciation matrices, explicit internal career mapping, and periodic workforce climate testing to mitigate churn risks.

Keywords: Employee retention, automobile component sector, dojo training, supervisor support, career progression, attrition mitigation

Introduction

In the hyper-competitive and automated landscape of modern manufacturing, human capital remains the definitive differentiator governing structural productivity and operational agility. Within labour-intensive domains like the automotive auto-components supply chain, an enterprise's capacity to recruit, assimilate, and retain specialized labour directly impacts its downstream value engineering and client SLA (Service Level Agreement) conformances. Consequently, employee retention has transitioned from a routine transactional HR function into a core macroeconomic objective essential for preserving institutional knowledge networks, suppressing volatile replacement costs, and defending shop-floor operational continuity.

Fundamentally, employee retention is defined as an organization's comprehensive strategy to foster an ecosystem that minimizes systemic voluntary turnover. When an experienced manufacturing professional exits an organization, the operational penalties extend far past the direct balance-sheet costs of recruitment and onboarding. Voluntary attrition compromises shop-floor safety baselines, induces operational drag via vacancy gaps, erodes collective team morale, and destabilizes lean manufacturing systems. In assembly settings governed by rigorous cycles and strict metrics, this destabilization frequently leads to quality defects, production backlogs, and costly overtime outlays.

Automotive supply chains run on a mixed labour force comprising high-precision engineering teams, administrative oversight staff, and heavy cohorts of semi-skilled shop-floor operators. This ecosystem is subject to unique workplace stressors: rigid rotational shifts, physically demanding

manual duties, strict zero-tolerance defect targets, and a highly competitive local labour market. While basic compensation packages prevent initial attrition, long-term workforce retention is shaped by a complex web of hygiene and motivational factors. These include physical workplace safety, leadership communication frameworks, structured technical upskilling, and transparent internal mobility tracks.

Objectives of the Study

To systematically evaluate and address workforce volatility within heavy factory environments, this research project establishes a clear empirical framework guided by the following primary and specific targets: To scientifically analyse the critical organizational, economic, environment-related, and psychological parameters that influence and determine long-term employee retention intent within the automobile component manufacturing industry, with specific reference to Auto Industries in Chennai.

Industry Context Summary

1. The Indian Automobile Component Manufacturing Landscape

The automotive industry acts as a principal engine of economic growth for India, contributing substantially to industrial gross value added, export capacity, and direct employment generation. Within this framework, the auto-component manufacturing segment provides critical mechanical, electrical, and structural systems to global original equipment manufacturers (OEMs). This sector's operational profile is marked by razor-thin margins, cyclical demands, and an urgent mandate for continuous

technological evolution to align with modern electric vehicle (EV) architectures and automation standards. Maintaining workforce continuity on production lines at regional hubs like Auto Industries in Chennai is essential to preserve JIT (Just-in-Time) delivery agreements and support localized industrial development.

Literature Review

To construct an effective interpretive framework for the field data, this study anchors its analysis in established industrial psychology and macro-organizational behaviour models, enhanced explicitly by contemporary field evaluations:

Herzberg’s Motivation-Hygiene Framework (1959) [5]: Posits that job satisfaction and dissatisfaction operate on independent planes driven by distinct factors. Hygiene factors (base salary, safety) prevent structural friction, while motivational vectors (recognition, career mapping) secure actual organic workforce retention.

Maslow’s Hierarchy of Needs (1943) [9]: Notes that institutional requirements progress sequentially from baseline physiological security up to active self-actualization. On the assembly floor, high safety compliance forms the foundation before growth parameters manifest any impact.

Price and Mueller’s Turnover Determinants (1981) [11]: Underscores that retention is a multi-causal construct where structural job satisfaction operates as a core mediator, governed heavily by institutional fairness and parity metrics.

Cotton and Tuttle’s Multi-Variable Attrition Model (1986) [3]: Segregates turnover patterns into task-related stressors, individual demographics, and regional market hiring pull indexes.

Allen, Shore, and Griffeth’s Perceived Organizational Support (POS) Theory (2003) [1]: Asserts that retention behaviours are directly driven by how thoroughly employees perceive that the enterprise values their personal well-being and structural metrics.

Kumar and Govindarajo’s Manufacturing Sector Evaluation (2014) [7]: Isolates that concrete micro-climatic stressors on heavy factory shop floors—such as high ambient heat, repetitive manual fatigue, and noise—directly accelerate voluntary turnover unless mediated by proactive supervisory intervention.

Kundu and Lata’s Cultural Engagement Matrix (2017) [8]: Confirms empirical pathways linking structured structural feedback channels and public recognition directly with heightened organizational loyalty baselines.

Sharma and Singh (2024) [13]: Examined retention across automated assembly sectors, concluding that post-pandemic workforce cohorts place higher precedence on clear, predictable internal career maps over pure financial increments.

Mishra (2025) [10]: Noted that specialized simulated technical training frameworks function not merely as technical skill conduits, but as deep cognitive anchors that significantly reinforce an employee’s psychological intent to remain by satisfying higher-order structural mastery needs.

Research Methodology

This study uses a descriptive research design to capture, analyse, and interpret current workforce dynamics without altering any workplace variables. Quantitative data was collected through a cross-sectional approach, evaluating the workforce climate during a dedicated study window in early 2026. The target population comprised active workers at the Auto Industries in Chennai manufacturing facility. A consolidated sample size of N = 179 valid respondents completed the highly structured 5-point Likert scale questionnaire, drawn utilizing a stratified convenience approach across plant shifts. Crucially, the sample was systematically balanced to include both shop-floor technical operators and administrative support staff, providing representative statistical power for the descriptive and inferential tests.

Data Presentation, Empirical Analysis, and Interpretation

Table 1: Distribution of Employee Positive Perceptions across Retention Variables (N=179)

Metric ID	Workplace Survey Statement Evaluated	Positive Response %
S1	I am satisfied with my current base salary.	93.67%
S2	I receive fair performance incentives and annual bonuses.	84.81%
S3	The factory workplace is engineered to be safe and secure.	100.00%
S4	The day-to-day physical working conditions are structurally comfortable.	91.14%
S5	I am satisfied with my current assigned job role and responsibilities.	86.08%
S6	The specialized Dojo training methods clarify complex work processes.	96.20%
S7	The enterprise commits sufficient importance to systematic upskilling.	100.00%
S8	I feel highly motivated to perform my daily work targets.	77.22%
S9	I have visible, accessible opportunities for promotion in this firm.	75.95%
S10	I perceive a distinct, stable long-term career future within this organization.	77.22%
S11	My direct supervisor actively supports me in my daily duties.	98.73%
S12	The designated daily working hours are fundamentally reasonable.	97.47%
S13	The rotational factory shift schedules are manageable.	94.94%
S14	My manual and professional outputs are explicitly recognized and appreciated.	81.01%
S15	I firmly intend to continue working in this firm over the next few years.	87.34%

Source: Primary field data processed via Microsoft Excel (2026).

Table 2: Inter-Correlation Matrix: Independent Drivers vs. Employee Retention Intent (N=179)

Independent Predictor Variable Evaluated	Dependent Criterion Variable	Correlation Value (r)	Statistical Interpretation
Base Salary Satisfaction Scale	Employee Retention Intent	0.420	Moderate Positive Relationship
Perceived Promotion & Advancement Tracks	Employee Retention Intent	0.609	Strong Positive Relationship
Extrinsic Recognition & Performance Appreciation	Employee Retention Intent	0.402	Moderate Positive Relationship
Perceived Long-term Future in Organization	Employee Retention Intent	0.662	Strongest Positive Relationship

Significance level: $p < 0.05$ across all specified lines.

Strategic Findings and Discussion

The empirical data demonstrates that the organization has built a robust foundation of hygiene factors across the evaluated workforce sample (N = 179). The absolute satisfaction with workplace safety and overall training structures confirms that the company's core compliance practices are highly effective. For an auto-component manufacturer handling complex machinery, maintaining clear safety protocols and highly rated training methods like the Dojo system is an excellent operational benchmark. The core challenge identified is a plateau in intrinsic motivation and career visibility. As inferential correlation checks confirmed, long-term retention depends heavily on explicit future career visibility ($r = 0.662$) and structured promotion opportunities ($r = 0.609$).

Recommendations

1. Implement Transparent Career Pathing Models:

The organizations should transform vague advancement paths into clear, skill-based progression matrices. Shop-floor workers need a visible roadmap detailing exactly how mastering specific technical skills maps directly to structural promotions.

2. Deploy Non-Financial Recognition Matrix Frameworks:

To address the lower score for active employee recognition, HR should launch structured shift-level peer appreciation programs, visible 'Operator of the Month' honours, and public technical excellence awards.

3. Maintain Environmental Engineering Controls:

To minimize micro-climatic variances across distinct zones of the plant, the facility should execute targeted micro-climate engineering modifications, optimized ventilation extraction, and localized ergonomic cooling baselines.

Conclusion

This empirical assessment at Auto Industries proves that long-term employee retention in the automobile components sector is a multi-dimensional challenge. It cannot be resolved through financial adjustments or basic safety protocols alone. Auto Industries Chennai exhibits excellent operational foundations across its N = 179 cohort: institutional safety systems are fully optimized, supervisor support is consistently strong, and specialized Dojo upskilling frameworks provide exceptional practical value to staff. To reduce attrition risks over the long term, management must focus on strengthening career development structures and non-financial recognition programs. By building transparent career pathways, introducing structured recognition platforms, and maintaining proactive environmental controls, the

organization can build a highly motivated, stable, and resilient workforce.

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