

A Study On Employee Turnover And Absenteeism In Precision Fastener Manufacturing

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Abstract- Employee turnover and absenteeism are among the most consequential challenges confronting manufacturing organisations. High turnover elevates recruitment and training expenditures, depletes institutional knowledge, and disrupts operational continuity. Absenteeism simultaneously depresses productivity and burdens present employees. This study investigates the causes and effects of both phenomena within a precision fastener manufacturing plant. Primary data were gathered through a structured questionnaire administered to 146 employees from Operator, Quality, Broaching, Oil Cleaning, and Supervisor departments using simple random sampling. A descriptive research design was employed. Statistical tools comprising percentage analysis, chi-square test, and Pearson's correlation were applied to the collected data. Findings indicate that poor working conditions, low salary, and lack of career growth are the predominant drivers of voluntary turnover, while heavy workload and an unsupportive work environment are the leading causes of absenteeism. Job satisfaction is critically low, with dissatisfaction the most frequently reported level. Both hypothesis tests accepted the null hypotheses, confirming the absence of statistically significant associations at the 5% level between the specific variable pairs examined. The study concludes with practical, data-driven recommendations encompassing competitive compensation, improved working conditions, structured career pathways, employee recognition, supervisor development, and transparent absenteeism management.

Keywords: Employee Turnover, Absenteeism, Job Satisfaction, Employee Engagement, Manufacturing Industry, Human Resource Management

I. INTRODUCTION

1.1 Human Resource Management and Employee Retention

Human Resource Management (HRM) is the strategic approach to the effective management of people within an organisation so that they help the business gain a competitive advantage. HRM policies and systems govern recruitment, training, performance appraisal, compensation, and employee relations. Two of the most persistent challenges

in HRM, particularly within manufacturing organisations, are employee turnover and absenteeism.

Employee turnover refers to the total number of workers who leave an organisation over a specified time period and must be replaced. High turnover rates impose severe financial and operational costs—replacement expenses alone often range between 50% and 200% of an employee's annual salary when recruitment, onboarding, and training expenditures are considered.

Absenteeism, defined as a habitual and unplanned pattern of absence from work without adequate justification, directly affects productivity, team morale, and service continuity. Research consistently demonstrates a positive relationship between absenteeism and eventual voluntary turnover; both phenomena share common root causes such as poor job satisfaction, inadequate compensation, poor working conditions, and weak organisational commitment.

1.2 Industry Context

India's automotive components manufacturing industry is a critical pillar of the country's industrial economy. The sector generated revenues exceeding USD 70 billion in FY 2023-24 and employs over 1.5 million workers. Fastener manufacturing, a specialised sub-segment, supplies high-precision bolts, nuts, studs, and related hardware to leading automobile OEMs.

Despite strong growth, the industry grapples with significant HR challenges. Average absenteeism rates between 7% and 12% have been reported across manufacturing plants, and high voluntary turnover—especially among shop-floor operators—continues to disrupt production schedules and inflate operational costs.

1.3 Objectives of the Study

The present study is guided by the following objectives:

- (i) To analyse the level and primary drivers of employee turnover in a precision fastener manufacturing plant.

- (ii) To examine the pattern and causes of absenteeism among the plant workforce.
- (iii) To assess the impact of job satisfaction on turnover and absenteeism.
- (iv) To study the relationship between employee engagement and turnover intention.
- (v) To offer data-driven recommendations for minimising turnover and absenteeism.

II. REVIEW OF LITERATURE

Kumar & Sharma (2024) examined the key determinants of voluntary employee turnover in the Indian manufacturing sector and found that inadequate compensation, lack of career development opportunities, and poor supervisor-employee relationships are the three most significant predictors of turnover intention.

Rajan & Pillai (2023) established a statistically significant negative relationship between absenteeism rates and production efficiency in automotive component plants in Tamil Nadu, identifying health-related issues and heavy workloads as the primary causes.

Mehta & Verma (2023) found that recognition, training opportunities, and supervisory support are the three pillars of job satisfaction that most strongly predict employee retention; organisations investing in these areas reported 30% lower turnover rates.

Suresh & Anand (2022) tracked 500 employees over two years and demonstrated that low baseline engagement predicted significantly higher absenteeism rates in subsequent periods, recommending structured engagement programmes.

Patel (2022) highlighted the importance of work-life balance in reducing voluntary turnover, particularly among younger workers; flexible shift timing and predictable schedules reduced turnover intention by up to 25%.

Gupta & Iyer (2021) showed that employees who felt under-compensated relative to industry benchmarks were three times more likely to leave, and Nair & Krishnan (2021) reported a strong positive correlation ($r = 0.68$) between perceived workplace stress and absenteeism frequency.

Balasubramanian (2020) found that plants with trained supervisors reported 18% lower absenteeism, while Reddy & Srinivas (2020) demonstrated that structured career development programmes nearly doubled average employee tenure over a five-year period.

Arumugam & Venkatesan (2019) concluded that organisational commitment was the strongest predictor of turnover intention in the fastener manufacturing sub-sector, stronger even than compensation.

III. RESEARCH METHODOLOGY

3.1 Research Design

The study adopts a descriptive research design to systematically characterise the patterns of employee turnover and absenteeism within a precision fastener manufacturing plant. Descriptive design is appropriate because the study aims to quantify and describe phenomena rather than establish causation.

3.2 Data Collection

Primary data were collected using a structured, self-administered questionnaire comprising 20 items across five sections: demographic profile, employee turnover, absenteeism, job satisfaction and engagement, and workplace conditions. The questionnaire was personally distributed to respondents during working hours and collected after completion.

3.3 Sample

The sample comprises 146 employees drawn from Operator, Quality, Broaching, Oil Cleaning, and Supervisor departments using simple random sampling. Simple random sampling ensures that every member of the population has an equal probability of selection, thereby enhancing representativeness.

3.4 Statistical Tools

Three statistical tools were employed: (i) Percentage Analysis to summarise frequency distributions; (ii) Chi-Square Test ($\chi^2 = \sum(O - E)^2 / E$) to assess association between categorical variables at the 5% level of significance; and (iii) Pearson's Correlation Coefficient to measure the strength and direction of relationships between continuous variables.

IV. DATA ANALYSIS AND INTERPRETATION

4.1 Demographic Profile

Table 1: Gender Distribution

Gender	Frequency	Percentage
Male	132	90.4%
Female	14	9.6%
Total	146	100%

The workforce is predominantly male (90.4%), consistent with the demographic profile of precision manufacturing plants in Tamil Nadu.

Table 2: Age Group

Age Group	Frequency	Percentage
Below 20	17	11.6%
21–30 years	82	56.2%
31–40 years	37	25.3%
Above 40	10	6.8%
Total	146	100%

The majority (56.2%) belong to the 21–30 age group, reflecting a young workforce with inherently higher turnover tendencies.

Table 3: Work Experience

Experience	Frequency	Percentage
< 1 year	30	20.5%
1–3 years	60	41.1%
3–5 years	35	24.0%
> 5 years	21	14.4%
Total	146	100%

41.1% of respondents have 1–3 years of experience, indicating that retaining employees beyond the initial years is a key challenge.

4.2 Turnover Analysis

Table 4: Primary Reason for Considering Leaving

Reason	Freq.	%
Poor working conditions	36	24.7%
Low salary	35	24.0%
Lack of job security	28	19.2%
Better job opportunity	25	17.1%
Lack of career growth	22	15.1%
Total	146	100%

Poor working conditions (24.7%) and low salary (24.0%) are the two leading drivers of turnover intention.

Table 5: Job Satisfaction Level

Satisfaction	Freq.	%
Very Satisfied	22	15.1%
Satisfied	30	20.5%
Average	28	19.2%
Poor	26	17.8%
Dissatisfied	40	27.4%
Total	146	100%

27.4% of respondents are dissatisfied—the highest single category—indicating an urgent need for HR intervention.

Table 6: Preferred Measures to Reduce Turnover

Measure	Freq.	%
Better Salary	35	24.0%
Employee Recognition	34	23.3%
Improved Work Conditions	27	18.5%
Promotion Opportunities	25	17.1%
Flexible Shift Timing	25	17.1%
Total	146	100%

Employees prioritise better salary (24.0%) and recognition (23.3%) as the most effective retention measures.

4.3 Absenteeism Analysis

Table 7: Absent Days per Month

Absent Days	Freq.	%
None	25	17.1%
1 Day	30	20.5%
2 Days	18	12.3%
3 Days	44	30.1%
4+ Days	29	19.9%
Total	146	100%

Over 82% of employees report at least one day of unplanned absence per month, with 30.1% absent for three days.

Table 8: Key Factors Causing Absenteeism

Factor	Freq.	%
Heavy workload	34	23.3%
Unsupportive environment	33	22.6%
Lack of flexible hours	29	19.9%
Poor team morale	26	17.8%
Health issues	24	16.4%
Total	146	100%

Heavy workload (23.3%) and an unsupportive work environment (22.6%) are the dominant causes of absenteeism.

4.4 Chi-Square Test

Ho: There is no significant association between job satisfaction and the perception that employee engagement reduces turnover intention.

Table 9: Chi-Square Test Results

Test	Value	df	p-value
Pearson Chi-Square	9.863	16	0.874
Likelihood Ratio	10.215	16	0.857
N of Valid Cases	146	-	-

Since $p = 0.874 > 0.05$, H_0 is accepted. There is no statistically significant association between job satisfaction level and belief in engagement as a turnover-reduction tool.

4.5 Pearson's Correlation

Ho: There is no significant relationship between workplace stress and the perceived impact of employee turnover.

Table 10: Pearson's Correlation

Variable	r	p-value	N
Workplace Stress ↔ Turnover Impact	0.121	0.145	146

$r = 0.121$ indicates a weak positive correlation. Since $p = 0.145 > 0.05$, H_0 is accepted. The relationship is directional but not statistically significant at the 5% level.

V. FINDINGS

- 90.4% of the respondents are male, consistent with manufacturing demographics in Tamil Nadu.
- 56.2% belong to the 21–30 age group, reflecting a young, turnover-prone workforce.
- 41.1% have 1–3 years of tenure, highlighting the difficulty of retaining employees beyond the early years.
- Poor working conditions (24.7%) and low salary (24.0%) are the top reasons for considering leaving.
- 27.4% of respondents are dissatisfied with their current jobs—the largest satisfaction category.
- Over 82% report at least one day of unplanned absence per month; 30.1% are absent for three days.
- Heavy workload (23.3%) and an unsupportive environment (22.6%) are the leading absenteeism drivers.

- Lack of career growth (26.7%) is the most frequently stated reason for actual resignation.
- Recognition (34.9%) is the most influential factor in job satisfaction, followed closely by training (33.6%) and supervisor relationship (31.5%).
- 34.9% of respondents believe management does not effectively reduce turnover; 34.2% are unsure.
- Chi-square test ($p = 0.874$) and Pearson's correlation ($r = 0.121$, $p = 0.145$) both confirm acceptance of the null hypotheses, indicating no statistically significant associations at the 5% level.

VI. SUGGESTIONS

Management should benchmark compensation packages against industry norms and introduce performance-linked increment structures to ensure employees feel fairly rewarded.

Immediate investment in physical working conditions—ergonomic workstations, adequate ventilation, better lighting, and rest areas—is essential, as working conditions ranked as the top turnover driver.

A structured career development framework with clear promotion pathways, skill-based pay grades, and internal mobility opportunities should be introduced to retain mid-tenure employees.

A formal employee recognition programme—covering monetary awards, certificates, and public acknowledgements—should be launched to address the strong demand for recognition identified in the study.

Regular, targeted training programmes for shop-floor employees will not only improve productivity but also enhance commitment and reduce voluntary turnover.

A clearly communicated absenteeism policy applying moderate, fair controls across all departments should replace the inconsistent enforcement observed in the study.

Supervisor training in interpersonal skills and conflict resolution is critical, as supervisor relationships emerged as a key driver of job satisfaction.

Periodic employee engagement surveys, with results shared transparently and acted upon visibly, will help monitor satisfaction and stress levels in real time.

VII. CONCLUSION

The present study investigated employee turnover and absenteeism in a precision fastener manufacturing environment through primary data collected from 146 respondents using a structured questionnaire. Statistical analysis via percentage analysis, chi-square test, and Pearson's correlation has produced several actionable insights.

The workforce is characterised as predominantly young (21–30 years), male, and of relatively short tenure (1–3 years)—a demographic profile known to correlate with elevated turnover risk. Poor working conditions, inadequate compensation, and lack of career growth are the dominant drivers of voluntary turnover, while heavy workload and an unsupportive environment fuel absenteeism. Job satisfaction is critically low, with dissatisfaction the most common reported level.

Although statistical tests did not reveal significant associations between the specific variable pairs tested, the directional trends and percentage distributions clearly indicate a systemic HR challenge requiring a multi-dimensional response. Addressing turnover and absenteeism demands simultaneous attention to compensation, working conditions, career development, recognition, supervisor quality, and transparent policy enforcement. Organisations that implement such a holistic HR strategy are better positioned to retain experienced talent, sustain product quality, and achieve long-term operational competitiveness.

REFERENCES

- [1] Kumar, A. & Sharma, R. (2024). Determinants of Employee Turnover in Manufacturing Sector. *International Journal of Human Resource Management*, 35(2), 112–128.
- [2] Rajan, S. & Pillai, M. (2023). Absenteeism and Productivity Loss in Automotive Industries. *Journal of Industrial Relations*, 28(4), 201–218.
- [3] Mehta, G. & Verma, R. (2023). Impact of Job Satisfaction on Employee Retention. *Indian Journal of Management Research*, 15(1), 55–71.
- [4] Suresh, P. & Anand, K. (2022). Employee Engagement and Absenteeism: A Longitudinal Study. *Asian Journal of Organizational Behaviour*, 9(3), 88–105.
- [5] Patel, S. (2022). Work-Life Balance and Its Effect on Employee Turnover in Manufacturing. *Journal of Labour Economics*, 12(2), 34–50.
- [6] Gupta, R. & Iyer, N. (2021). Compensation and Benefits as Drivers of Turnover. *Compensation & Benefits Review*, 53(1), 22–39.
- [7] Nair, V. & Krishnan, T. (2021). Workplace Stress and Its Relationship with Absenteeism. *Stress and Health Journal*, 37(4), 645–658.
- [8] Balasubramanian, C. (2020). Management Practices and Employee Retention in Tier-2 Cities. *South Asian Journal of Management*, 27(3), 78–94.
- [9] Reddy, B. & Srinivas, K. (2020). Role of Career Growth in Reducing Employee Turnover. *Career Development International*, 25(6), 567–583.
- [10] Arumugam, S. & Venkatesan, P. (2019). Organisational Commitment and Turnover Intention in the Fastener Industry. *Journal of Occupational Psychology*, 92(2), 312–329.