A Study on Employee Absenteeism and its Impact on Organizational Performance:An Empirical Investigation at Armstrong International Private Limited, Chengalpattu

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Abstract

This study examines employee absenteeism and its impact on organizational performance at Armstrong International Private Limited, Chengalpattu, a manufacturer of steam traps, humidifiers, and heat exchangers. Unlike studies that examine absenteeism rates in isolation, this research tests how three underlying drivers – job satisfaction, work environment, and health and personal factors – shape organizational performance in a private-sector Indian manufacturing setting.

Primary data were collected from 150 employees across manufacturing, administration, sales & marketing, and engineering departments through convenient sampling, and analysed using IBM SPSS Statistics. Reliability is excellent across all constructs (overall Cronbach's Alpha = 0.966). The Chi-Square test reveals a significant association between gender and organizational performance (χ^2 = 12.761, p = 0.002). Pearson correlation confirms significant positive relationships between organizational performance and job satisfaction (r = 0.675), work environment (r = 0.671), and health and personal factors (r = 0.581), all at the 1% level. The regression model (F = 65.880, p < 0.001) explains 57.5% of the variance in organizational performance, with all three predictors contributing significantly. The study concludes that absenteeism requires a coordinated approach improving recognition, workload, workspace conditions, and employee wellness simultaneously.

Keywords: Employee Absenteeism, Organizational Performance, Job Satisfaction, Work Environment, Health and Personal Factors, Cronbach's Alpha, Chi-Square Test, Pearson Correlation, Multiple Linear Regression.

1. Introduction

1.1 Background of the Study

Employee absenteeism – habitual or occasional non-attendance without prior authorisation – extends beyond physical absence to include tardiness, early departures, and unauthorised breaks. In manufacturing environments such as Armstrong International, where production depends on coordinated shop-floor presence, even modest absenteeism triggers overtime, delays, and quality-control concerns on precision-engineered products. The post-pandemic workplace has amplified this challenge: remote work is limited on shop floors, mental-health concerns are rising, and global absenteeism costs exceed USD 200 billion annually in the US alone. This study treats absenteeism as an outcome shaped by job satisfaction, workplace conditions, and personal well-being, and examines how those drivers translate into organizational performance at a specific Indian manufacturing site.

1.2 Importance of the Topic

Understanding absenteeism is important for more than academic reasons. It shapes how manufacturing firms plan shifts, cost projects, and retain skilled operators. This study is important for three reasons: it supports operational resilience by identifying HR levers that keep production lines staffed; it helps HR functions design coordinated interventions covering recognition, workload, workspace, wellness, and leave policy together; and it improves individual employee well-being by showing that job satisfaction and health support are measurable drivers of performance, not optional extras.

1.3 Problem Statement

Despite growing awareness of employee wellness, many manufacturing firms treat absenteeism as a reporting metric rather than a management problem. At Armstrong International, unplanned absences strain workload distribution, raise overtime costs, and in some cases delay delivery of thermal-utility solutions. The causes are rarely straightforward – some driven by job dissatisfaction and limited recognition, others by workload imbalance or uncomfortable workspace conditions, and still others by genuine health and family-related issues. Without a clear picture of which drivers carry the most weight, interventions risk being scattered and ineffective. This study addresses the absence of an integrated, data-backed view of which HR variables actually move organizational performance, testing three driver categories simultaneously and quantifying how much variance they jointly explain.

1.3 Research Objectives

- To examine the impact of employee absenteeism on organizational performance at Armstrong International.
- To identify the major causes of absenteeism with reference to job satisfaction, work environment, and health factors.
- To analyse the association between gender and organizational performance.
- To determine the combined predictive effect of the three driver variables on organizational performance.
- To suggest practical measures to reduce absenteeism and enhance performance.

2. Literature Review

2.1 Key Theories and Concepts

International research positions absenteeism as a significant drag on performance. Alfitian (2025) found an inverted-U relationship in retail, where moderate absenteeism (~4%) correlated with the highest outcomes, and abnormally low absenteeism was as harmful as abnormally high absenteeism. Neuber et al. (2022), in a meta-analysis of 179 correlations (N = 139,182), confirmed a positive link between engagement and performance ($\rho = 0.483$) and a negative link with absenteeism ($\rho = -0.171$), with longitudinal evidence that engagement predicts both future performance and future absence.

In the Indian context, Dhawan and Ahmed (2024) reported absenteeism rates of 8% in IT to 18% in construction and a strong negative correlation with job satisfaction (−0.91), with regression showing that a one-unit increase in job satisfaction reduced absenteeism by 1.48%. Ghosh and Bhowmik (2025) found normative commitment strongly negatively correlated with absenteeism (−0.780) among private-sector employees in Kolkata. Sujan Raj and Dubey (2025) linked absenteeism to workplace stress, with 80% of respondents reporting occasional stress that contributed to missed workdays.

On work environment and workload, Fidyatunnisa et al. (2025) showed that a positive work environment enhanced performance while excessive workload reduced it, with job satisfaction partially mediating the relationship. Acosta (2025) reported that negative workplace climate and strained relationships were key drivers, imposing costs of up to 4% of payroll. De Souza et al. (2023) identified disorganised environments and insufficient training as central absenteeism causes.

Regarding health and wellbeing, Bishen and Pérez (2025) reported global absenteeism costs of USD 226 billion annually, largely tied to preventable health issues. Sinclair and Suff (2025) identified mental ill health as the leading cause of long-term absence (41%) and a major short-term contributor (29%). Anekwe and Paul (2025) found organizational culture explained 70.5% of productivity variation, while Kwon and Raman (2023) showed inconsistent schedules raised absenteeism probability by 32.9 percentage points.

2.2 Research Gap and Hypotheses

Fewer studies focus on specific Indian manufacturing firms in niche sectors like industrial valves and thermal utility management. Most post-pandemic research has not tested the combined predictive power of job satisfaction, work environment, and health factors in a single regression model within one organization. This study addresses that gap.

Three hypotheses were formulated: (H1) a significant association exists between gender and organizational performance; (H2) significant positive relationships exist between each driver and performance; (H3) the three drivers jointly predict organizational performance.

3. Research Methodology

The study adopts a descriptive, cross-sectional survey design. The population comprises employees of Armstrong International Pvt Ltd, Chengalpattu. Using convenient sampling, 150 employees were surveyed across manufacturing, administration, sales & marketing, and engineering departments. Data were collected through a structured, personally administered questionnaire with a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Section I captures demographics (gender, age, education, experience, department); Section II measures four constructs through five items each: job satisfaction, work environment, health and personal factors, and organizational performance (20 items total).

Independent variables: job satisfaction, work environment, and health and personal factors. Dependent variable: organizational performance. Analysis techniques include frequency analysis, Cronbach's Alpha reliability testing, Chi-Square test of independence, Pearson correlation, and multiple linear regression ($Y = \beta0 + \beta1X1 + \beta2X2 + \beta3X3 + \varepsilon$).

4. Results and Data Analysis

4.1 Descriptive Statistics

Males comprise 53.3% and females 46.7%. The largest age group is 18–25 (34.7%). Diploma/certificate holders form the largest educational group (26.7%). Employees with <1 year experience are 30.0%. Manufacturing accounts for 38.7% of respondents. Responses lean positive, with 'Agree' as the modal response for most items, though meaningful 'Neutral' and 'Disagree' tails indicate pockets of dissatisfaction.

Reliability Analysis (Cronbach's Alpha):

Construct	Cronbach's α	Items
Job Satisfaction	0.958	5
Work Environment	0.958	5
Health & Personal Factors	0.959	5
Organizational Performance	0.949	5
Overall Scale	**0.966**	**20**

All constructs exceed the 0.90 excellent threshold, confirming high instrument reliability.

4.2 Inferential Analysis

Chi-Square Test (Gender × Performance): $\chi^2 = 12.761$, df = 2, p = 0.002. The null hypothesis is rejected. Among males, 58.8% perceive performance as 'High' versus 32.9% of females, suggesting gender-based differences in workplace experience.

Pearson Correlation Matrix:

Variable	JS	WE	HP	OP
Job Satisfaction	1.000	0.627**	0.585**	0.675**
Work Environment	0.627**	1.000	0.569**	0.671**
Health & Personal	0.585**	0.569**	1.000	0.581**
Org. Performance	0.675**	0.671**	0.581**	1.000

** Significant at the 0.01 level (two-tailed). All three correlations are positive and significant.

Multiple Regression Summary:

Statistic	Value	Interpretation
R	0.758	Strong overall fit
R^2	0.575	57.5% variance explained
F	65.880	$p < 0.001$ (significant)
β (Job Satisfaction)	0.354	$p < 0.001$
β (Work Environment)	0.350	$p < 0.001$
β (Health & Personal)	0.175	$p = 0.014$

The model is significant and all three predictors contribute uniquely, indicating they are distinct constructs. Job satisfaction and work environment carry roughly equal predictive weight, while health factors contribute a smaller but meaningful share.

Hypothesis Test Summary:

Hypothesis Test	Statistic	p-value	Decision
Gender × Org. Performance	$\chi^2 = 12.761$	0.002	Reject H0
Job Satisfaction × OP	r = 0.675	< 0.001	Reject H0
Work Environment × OP	r = 0.671	< 0.001	Reject H0
Health & Personal × OP	r = 0.581	< 0.001	Reject H0
JS, WE, HP → OP (Regression)	F = 65.880	< 0.001	Reject H0

5. Discussion

The analyses tell a coherent story: reliability values above 0.949 confirm measurement consistency; the Chi-Square result shows gender is associated with performance perceptions – not that one group performs better, but that workplace experience differs enough between male and female employees to show up in the data; the three Pearson correlations confirm each driver tracks meaningfully with performance; and the regression shows they jointly explain 57.5% of the variance. Absenteeism and its performance effects at this plant are structured around recognisable HR variables that management can influence.

These findings align closely with Dhawan and Ahmed (2024) on the satisfaction–absenteeism link (−0.91), Fidyatunnisa et al. (2025) on the work environment–performance relationship, Sinclair and Suff (2025) on health-related absence, and Silver et al. (2025) on engagement variations across demographic segments. The distinctive contribution is bringing these strands together within a single regression model showing all three drivers retain significance simultaneously.

Theoretically, the results support the Job Demands–Resources model, in which high demands and low resources combine to produce burnout and withdrawal. They are also consistent with Social Exchange Theory, predicting that employees who feel valued reciprocate with higher engagement, and with the Resource-Based View, treating human capital as a strategic resource whose depletion through absence erodes firm performance.

On the practical side, the findings suggest a coordinated rather than piecemeal approach. Management should introduce structured recognition and reward programmes acknowledging individual and team contributions, and build visible career-growth pathways. Compensation should be reviewed periodically and workload rebalanced across departments. The physical workspace should be upgraded with ergonomic furniture, adequate lighting, and clean facilities, reinforced by inter-departmental communication and team-building. A robust wellness programme covering medical camps, counselling, stress-management workshops, and fitness initiatives should be backed by a flexible leave policy and employee assistance programme. Finally, a data-driven performance management system should link individual productivity to clear targets, regular reviews, and continuous improvement.

6. Conclusion

Employee absenteeism at Armstrong International cannot be addressed by any single intervention. Job satisfaction, work environment, and health factors are all statistically significant drivers of organizational performance, individually and jointly ($R^2 = 0.575$). Gender is also significantly associated with performance perceptions. The priority should shift from treating absenteeism as a reporting metric to treating it as a symptom of deeper HR drivers. By strengthening recognition, career paths, workload balance, workspace comfort, communication, and wellness support, management can build a more engaged and productive workforce.

7. Limitations and Future Research

The sample of 150 employees from a single plant limits generalisability to other manufacturers, sectors, or regions. Self-reported Likert data carry risks of social-desirability bias, acquiescence bias, and common-method variance, particularly because predictors and outcome were measured in the same instrument. The cross-sectional design captures associations rather than strict causal effects, and directionality is assumed rather than proven. Time and access constraints meant that external factors such as economic cycles and seasonal demand could not be fully modelled. Convenient sampling may under-represent frequently absent employees, introducing potential selection bias on the variable of interest.

Future research can extend this work through larger, multi-plant samples across the Tamil Nadu manufacturing cluster. A longitudinal design tracking respondents over several quarters would allow changes in satisfaction, workload, and wellness to be linked to subsequent changes in absence rates and performance. A mixed-methods approach combining the quantitative model with focus groups and HR-record analysis would uncover mechanisms behind gender-based differences and test whether specific absence categories respond differently to targeted interventions.

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