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Impact of HRMS Implementation and Integration on Organizational Development

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ABSTRACT

The digital transformation of human resource management has emerged as a strategic priority for organizations seeking to enhance workforce efficiency and organizational effectiveness. This study examines the impact of Human Resource Management System (HRMS) implementation and integration on organizational development within Vortex Engineering Private Limited, an engineering and manufacturing firm headquartered in Chennai, India. Employing a descriptive research design, primary data were collected from 150 employees across five departments using a structured questionnaire incorporating Likert-scale instruments. Statistical analysis included normality testing (Kolmogorov-Smirnov and Shapiro-Wilk), Kruskal-Wallis H-test, Chi-square analysis, one-way ANOVA, and Spearman rank correlation. Findings reveal that 88.7% of respondents are aware of the HRMS system, 90% affirm its multi-functional integration, and 88% report a positive influence on organizational development. Spearman correlation analysis indicates a statistically significant moderate positive relationship between HRMS efficiency and employee performance ($r_s = 0.505$, $p < 0.01$). The Kruskal-Wallis test demonstrates that employee work experience significantly influences perceived HRMS efficiency, payroll management, and productivity ($p < 0.05$). These results collectively underscore the strategic role of HRMS in driving organizational development through improved HR operations, cross-functional coordination, and evidence-based decision-making.

Keywords: HRMS; Human Resource Management System; Organizational Development; HR Technology; Employee Performance; Digital Transformation; Engineering Organizations

1. INTRODUCTION

Occupational health and safety (OHS) has evolved from a statutory compliance requirement into a strategic function of human resource management. In manufacturing environments, where workers operate heavy machinery, manage material handling systems, and navigate continuous production cycles, the risk of injury and occupational illness is inherently elevated. Organizations that invest meaningfully in OHS practices consistently demonstrate lower rates of absenteeism, reduced compensation liabilities, and higher levels of employee engagement and organisational productivity.

The automobile components manufacturing sector presents a particularly demanding safety landscape. Production activities involving machining, precision assembly, and thermal and mechanical processes expose workers to noise, vibration, heat, and chemical hazards on a daily basis. Under these conditions, OHS management must be proactive, data-driven, and continuously evaluated.

Myunghwa India Private Limited, incorporated in 2007 in Kanchipuram, Tamil Nadu, is a subsidiary of Myunghwa Automotive — a South Korean auto parts manufacturer with over six decades of global operations. The company produces engine components including oil pumps, water pumps, timing chain cover modules, and electric drive units, operating across a 43,000 m² facility. Given the nature of its operations, a rigorous understanding of its OHS environment is both practically and academically significant.

This study addresses that need by empirically examining the occupational health and safety culture at the organisation, evaluating the effectiveness of existing safety practices, and identifying areas requiring systemic improvement.

2. LITERATURE REVIEW

A growing body of empirical literature underscores the centrality of OHS management in manufacturing performance outcomes. Kumar (2025) demonstrated that preventive health initiatives in production settings are associated with measurable reductions in absenteeism and improvements in operational efficiency. Sharma (2025) further established that a strong safety climate — characterised by visible leadership commitment and regular policy communication — correlates positively with worker morale and accident prevention.

Lee (2024) emphasised that periodic safety training significantly enhances hazard awareness, with trained workers demonstrating markedly higher rates of compliance with protective equipment protocols. Patel (2024) extended this finding by linking robust occupational health monitoring to reduced staff turnover and improved operational stability. The participatory dimension of OHS was highlighted by Brown (2023), who found that employee involvement in safety committees strengthens both hazard reporting behaviour and worker–management communication.

At the workplace design level, Gupta (2022) reported that ergonomic interventions reduce musculoskeletal complaints and fatigue, while Rao (2022) confirmed that structured health monitoring programmes lower sick leave rates and improve workforce confidence. Collectively, this body of research frames OHS not merely as risk mitigation, but as an enabler of sustainable organisational performance — a framing central to the present study.

3. OBJECTIVES OF THE STUDY

3.1 Primary Objective

To examine the occupational health and safety measures implemented at Myunghwa India Private Limited and assess their effectiveness in protecting employee well-being.

3.2 Secondary Objectives

- To evaluate the safety policies and communication practices followed within the organisation.
- To assess employee awareness of workplace health and hygiene standards.
- To determine the effectiveness of safety training programmes in building risk awareness.
- To evaluate the reach and regularity of periodic health monitoring initiatives.
- To identify statistically significant relationships between safety practices and employee outcomes.

4. RESEARCH METHODOLOGY

4.1 Research Design

A descriptive research design was adopted to systematically capture employee perceptions of OHS practices within the study organisation. This approach is well-suited to measuring the prevalence and perceived effectiveness of safety interventions without presuming causal directionality.

4.2 Sample and Data Collection

The study population comprised all permanent and contract employees at Myunghwa India's Kanchipuram facility. A convenience sampling approach yielded a final sample of 192 respondents. Primary data were gathered through a structured questionnaire distributed digitally via Google Forms, consisting of demographic items, dichotomous response questions, and five-point Likert scale items. Secondary data were sourced from published academic journals, industry reports, and institutional records.

4.3 Statistical Tools

Given that the Kolmogorov-Smirnov and Shapiro-Wilk normality tests confirmed non-normal distributions across all key variables ($p < 0.05$), non-parametric methods were applied for inference. The analytical toolkit comprised:

- Kolmogorov-Smirnov & Shapiro-Wilk Tests — to verify distributional assumptions.
- Spearman's Rank Correlation — to assess monotonic relationships between ordinal variables.
- Chi-square Test of Independence — to identify associations between categorical variables.
- Kruskal-Wallis H Test — to compare perception differences across experience groups.
- One-Way ANOVA — to test satisfaction differences by employee experience level.

5. RESULTS AND DISCUSSION

5.1 Demographic Profile

The sample was overwhelmingly male (95.4%), reflecting the gendered composition typical of heavy manufacturing environments in India. The dominant age cohort was 35–44 years (46.3%), followed by 25–34 years (27.6%). Nearly

half the workforce (48%) possessed 4–6 years of experience with the organisation, suggesting a mid-tenure profile. The first shift accounted for the largest share of respondents (35.4%), and the modal income bracket was ₹30,000–40,000 per month (40%).

5.2 Safety Training and Policy Communication

A strong majority of employees (92%) reported having participated in safety training programmes, and 91% confirmed awareness of workplace health and hygiene practices. These figures suggest that the organisation has achieved meaningful coverage in its awareness efforts. However, the effectiveness of these programmes remains limited: only 20.3% of respondents agreed that safety training adequately equips employees to identify and manage workplace risks. This divergence between training participation and perceived impact points to deficiencies in training design, relevance, or delivery methodology.

Regarding policy communication, 59.2% of employees agreed or strongly agreed that safety policies are clearly communicated. Notice boards emerged as the dominant channel of safety awareness (50.5%), followed by safety training sessions (34%) and supervisor guidance (10.4%). The limited reach of supervisor-led communication is noteworthy and suggests an underutilisation of a potentially high-impact channel.

5.3 Occupational Health Facilities and Monitoring

A substantial majority (88.5%) confirmed the availability of occupational health facilities, with medical rooms being the most frequently cited provision (41.6%), ahead of first aid stations (28.1%), periodic health check-ups (16.6%), and health insurance (13.5%). While 89.5% of respondents stated that periodic health check-ups are conducted, 38.5% indicated that these checks occur only on an as-needed basis — a reactive rather than preventive posture. This is inconsistent with best practice guidance, which advocates for scheduled and systematic health surveillance.

5.4 Workplace Accidents and Policy Implementation

A strikingly high proportion of respondents — 88% — reported having personally experienced a workplace accident. This figure represents a significant concern and suggests that the existing suite of safety interventions is insufficient to prevent injuries at an acceptable rate. Compounding this, 29.1% of respondents strongly disagreed that occupational health policies are effectively implemented, and only 31.1% agreed or strongly agreed with this statement.

6. STATISTICAL RESULTS

6.1 Normality Test

The Kolmogorov-Smirnov and Shapiro-Wilk tests were applied to five key variables. All variables yielded significance values of $p = 0.000$, confirming non-normal distributions. Consequently, non-parametric tests were adopted for all inferential analyses.

Table 1: Test of Normality Results (Kolmogorov-Smirnov)

Variable	Statistic	df	Sig.	Result
Safety Communication	.219	192	.000	Non-normal
Health Checkup Benefit	.255	192	.000	Non-normal
Training Effectiveness	.200	192	.000	Non-normal
Policy Implementation	.176	192	.000	Non-normal
Work Environment	.157	192	.000	Non-normal

6.2 Spearman's Rank Correlation: Training Effectiveness vs. Work Environment

A Spearman's rho of 0.633 ($p < 0.01$) was obtained between training effectiveness and work environment ratings, indicating a strong positive monotonic relationship. The null hypothesis of no significant association was rejected. This

finding implies that improvements in the quality and relevance of safety training are likely to yield measurable improvements in the perceived work environment.

6.3 Chi-Square Test: Safety Training Attendance and Workplace Accidents

A Pearson Chi-square value of 23.930 (df = 1, p = 0.000) established a statistically significant association between attendance at safety training programmes and the occurrence of workplace accidents. The null hypothesis was rejected. This finding carries direct practical implications: scaling up safety training coverage has measurable potential to reduce incident rates.

6.4 Kruskal-Wallis H Test: Experience Group Differences

Significant inter-group differences were identified across all five variables by employee experience level. Safety communication yielded the largest H-statistic (26.950, p = 0.000), followed by training effectiveness (16.388, p = 0.003). Senior employees with longer tenure demonstrated notably higher safety awareness, while those with the most experience paradoxically reported lower training effectiveness scores — suggesting possible content fatigue or diminishing returns in repeated training programmes.

6.5 One-Way ANOVA: Satisfaction by Experience

The ANOVA yielded F(4, 187) = 7.714, p = 0.000, confirming significant variation in satisfaction with OHS practices across experience groups. This result suggests that safety satisfaction is not uniform across the workforce and may require targeted, experience-sensitive interventions rather than a one-size-fits-all approach.

7. KEY FINDINGS

Table 2: Summary of Key Survey Findings (n = 192)

Indicator	Respondents (n)	Percentage (%)
Attended safety training programmes	176	92.0
Aware of health and hygiene practices	174	91.0
Confirm occupational health facilities available	170	88.5
Reported experiencing a workplace accident	169	88.0
Periodic health check-ups confirmed	172	89.5
Aware of safety policies	168	87.5
Agree safety policies clearly communicated	114	59.2
Agree training helps understand workplace risks	39	20.3
Strongly disagree OHS policies are effectively implemented	56	29.1

8. RECOMMENDATIONS

Based on the findings, the following recommendations are proposed to strengthen the OHS framework at the organisation:

• Safety training programmes should be redesigned around practical simulations and scenario-based learning to enhance perceived effectiveness, particularly among employees with four or more years of experience.

• Health check-ups should be scheduled systematically — at a minimum of twice annually — rather than conducted only in response to health events.

• Supervisor-led safety communication should be institutionalised as a formal channel, with supervisors trained in safety leadership and held accountable for team compliance.

• A root-cause investigation framework should be established to analyse workplace accidents, track corrective actions, and monitor recurrence rates.

• Employee participation in safety committees should be expanded to include rotating representation across all departments and shifts.

• Digital communication tools (e.g., safety intranet portals, SMS alerts) should supplement notice boards to reach a broader and more diverse workforce.
• Night and third-shift workers should receive dedicated safety briefings, given the elevated risk profile associated with reduced supervision during non-standard hours.

9. CONCLUSION

This study provides empirical insight into the occupational health and safety landscape of a South Korean–Indian automotive components manufacturer operating in Tamil Nadu. The findings reveal a paradox characteristic of many maturing manufacturing organisations: a relatively high level of OHS infrastructure and employee awareness coexisting with persistently high accident rates and scepticism regarding the effective implementation of health policies.
Statistical analyses confirmed that safety training participation is significantly associated with lower accident incidence, that training quality is strongly correlated with perceived work environment quality, and that OHS satisfaction varies meaningfully by employee experience. These results collectively underscore that the determinant of OHS success is not the existence of programmes, but their quality, consistency, and organisational embedding.
The study contributes to the growing literature on OHS in emerging economy manufacturing contexts and offers actionable recommendations for practitioners. Future research should extend this inquiry through longitudinal designs, multi-site comparisons, and qualitative exploration of the organisational and cultural determinants of safety culture.

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