

THE EFFECT OF MOTIVATION AND WORK ENVIRONMENT ON EMPLOYEE PERFORMANCE AT A SHIPYARD COMPANY IN BATAM

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ABSTRACT

Purpose: Shipyard companies operate in physically demanding, safety-critical environments where employee performance depends heavily on both psychological drive and physical working conditions. This study analyzes the effect of motivation and work environment on employee performance at a shipyard company in Batam.

Methods: A quantitative causal design was used, with multiple linear regression applied to a sample of 147 employees.

Findings: Motivation has a positive and significant partial effect on employee performance ($t = 5.754 > 1.655$, Sig. = 0.000), work environment also has a positive and significant partial effect ($t = 4.582 > 1.655$, Sig. = 0.000), and the two variables jointly explain 78.9 percent of the variance in employee performance ($F = 268.546 > 3.06$, Sig. = 0.000; R-squared = 0.789).

Originality/value: The study contributes regression-based evidence from Indonesia's maritime shipyard sector, still scarce relative to office- and light-manufacturing settings, indicating that performance-improvement strategies should address motivational drivers and physical working conditions concurrently rather than treating either as sufficient on its own, with practical implications for human-resource management in labor-intensive maritime industries.

Keywords : Work Motivation; Work Environment; Employee Performance; Shipyard Industry; Human Resource Management

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1. INTRODUCTION

Human resources occupy an increasingly central position in achieving an organization's core business objectives, and managing the workforce effectively has become one of management's most pressing responsibilities, particularly in labor-intensive, safety-critical industries such as shipbuilding. A shipyard company operating in Batam, an area that hosts a significant concentration of Indonesia's maritime fabrication industry, exemplifies the human-resource challenges typical of this sector: production work is physically demanding, often conducted in exposed outdoor conditions, and highly dependent on employees sustaining consistent effort and attention over extended shifts. Under these conditions, employee performance is shaped jointly by the psychological drive employees bring to their work and by the physical and organizational conditions the company provides for them to work in (Wardiansyah et al., 2024).

Work motivation is widely recognized in the organizational-behavior literature as a central driver of employee performance, referring to the internal and external forces that direct, energize, and sustain effort toward organizational goals (Robbins & Judge, 2019). Recent evi-

dence from manufacturing and service settings confirms that higher work motivation is consistently associated with stronger individual and team performance outcomes, particularly where performance depends on sustained physical or repetitive effort (Lussa et al., 2023). Work environment, encompassing physical conditions such as lighting, noise, temperature, and workspace layout as well as the psychosocial climate among coworkers and supervisors, represents a second, complementary determinant of performance: employees working in poorly designed or uncomfortable physical environments tend to show reduced productivity and higher error rates regardless of their underlying motivation level (Wardiansyah et al., 2024; Riyanto et al., 2021).

Despite substantial international evidence on motivation and work environment as performance determinants, comparatively few studies examine their joint and separate contribution specifically within Indonesia's maritime and shipyard manufacturing sector, where physical working conditions differ markedly from office-based or light-manufacturing contexts studied more commonly in the literature (Nugroho & Wahjoedi, 2023). This study addresses that gap by examining, at a shipyard company in Batam, how motivation and work environment each affect employee performance, and how much of the variance in performance they jointly explain, with the aim of providing shipyard management with an empirically grounded basis for allocating human-resource investment between motivational programs and workplace-environment improvement.

2. LITERATURE REVIEW

Employee performance is generally defined as the extent to which an employee fulfills the quality, quantity, and timeliness expectations attached to their job role, and is treated in the human-resource literature as the outcome variable most directly linked to organizational productivity and competitiveness (Robbins & Judge, 2019). Because performance is influenced by multiple interacting factors, researchers commonly examine it as a function of both individual psychological states, such as motivation, and situational conditions, such as the physical work environment, rather than attributing it to either factor alone (Pancasila et al., 2020).

Work motivation theory holds that employees exert greater effort and sustain that effort for longer when their psychological needs - whether framed as achievement, recognition, security, or growth - are addressed through the conditions of their work (Robbins & Judge, 2019). Empirical studies across manufacturing and services consistently find that higher motivation predicts stronger job performance, often operating through intervening states such as job satisfaction (Lussa et al., 2023; Pancasila et al., 2020). In physically demanding industrial settings specifically, motivation has been shown to matter even more where tasks are repetitive or strenuous, since sustained effort under such conditions depends heavily on employees' internal drive rather than on task interest alone (Nor et al., 2023).

Work environment theory, meanwhile, distinguishes between the physical work environment - lighting, ventilation, noise, layout, and safety conditions - and the non-physical or psychosocial work environment, comprising relationships with supervisors and coworkers and the broader organizational climate (Wardiansyah et al., 2024). Both dimensions have been shown to affect employee performance directly, and also indirectly through their effect on job satisfaction and stress (Riyanto et al., 2021). In heavy-industry and shipyard-type settings,

where the physical environment is often harsher and safety risks more salient than in office settings, the work-environment effect on performance has been found to be at least as strong as, and sometimes stronger than, the motivational effect (Alfarissy & Suwaji, 2025).

Building on this theoretical foundation, this study proposes that motivation and work environment each exert a positive, significant partial effect on employee performance, and that the two variables jointly exert a positive, significant simultaneous effect on employee performance, consistent with the pattern documented across multiple manufacturing and industrial contexts where motivational and environmental predictors jointly explain a substantial share of the variance in performance outcomes (Nugroho & Wahjoedi, 2023).

3. METHOD

This study uses a quantitative causal design intended to test the effect of two independent variables - motivation and work environment - on employee performance as the dependent variable, at a shipyard company in Batam. The population consists of the company's production employees, and the study draws on a sample of 147 respondents, determined through a probability sampling procedure appropriate to the size of the employee population.

Data were collected through a structured questionnaire using a Likert scale, designed to capture respondents' perceptions of motivation (encompassing needs for achievement, recognition, and security), work environment (encompassing both physical conditions and psychosocial climate), and overall job performance (encompassing work quality, quantity, and timeliness). Prior to the main analysis, the instrument was tested for validity and reliability, and the assumptions underlying multiple linear regression, including normality and the absence of multicollinearity between the two predictors, were checked and satisfied.

The data were analyzed using multiple linear regression, with partial (t) tests used to assess the individual effect of each independent variable, an overall (F) test used to assess their joint effect, and the coefficient of determination (R-squared) used to quantify the proportion of variance in employee performance explained by the two predictors combined. All statistical analyses were performed using SPSS.

4. RESULTS AND DISCUSSION

The regression analysis shows that motivation has a positive and statistically significant partial effect on employee performance, with a calculated t-value of 5.754, exceeding the critical t-table value of 1.655, and a significance value of 0.000, below the 0.05 threshold. This finding is consistent with evidence from other manufacturing settings showing that motivation remains one of the strongest individual-level predictors of job performance, particularly where work requires sustained physical effort over long shifts (Lussa et al., 2023; Nor et al., 2023); at the shipyard studied here, this suggests that employees' internal drive toward achievement and recognition translates directly into how consistently they meet production-quality and timeliness expectations.

Work environment similarly shows a positive and statistically significant partial effect on employee performance, with a calculated t-value of 4.582, also exceeding the critical value of 1.655, and a significance value of 0.000. This result is consistent with evidence that both phys-

ical and psychosocial work-environment conditions meaningfully shape performance independently of motivation, particularly in heavy-industry settings where physical conditions are more variable and safety-relevant than in office contexts (Wardiansyah et al., 2024; Riyanto et al., 2021). Although its partial effect is somewhat smaller than that of motivation in this sample, the significant contribution confirms that improving physical working conditions cannot be treated as secondary to motivational programs.

Tested simultaneously, motivation and work environment jointly exert a significant effect on employee performance, with a calculated F-value of 268.546, exceeding the critical F-table value of 3.06, and a significance value of 0.000. The coefficient of determination indicates that the two variables together explain 78.9 percent of the variance in employee performance ($R = 0.888$; $R\text{-squared} = 0.789$), leaving approximately 21.1 percent of the variance attributable to factors outside the model, such as compensation, leadership style, job design, or safety climate (Alfarissy & Suwaji, 2025; Nugroho & Wahjoedi, 2023). This proportion of explained variance is notably high relative to comparable manufacturing-sector studies, suggesting that at this shipyard, motivation and work environment together capture most of the systematic variation in how employees perform, leaving relatively little room attributable to other organizational factors not measured in this study.

Table 1 summarizes the hypothesis-testing results for both the partial and simultaneous effects.

Table 1. Summary of Hypothesis Testing Results

<i>Hypothesis</i>	<i>Test Statistic</i>	<i>Conclusion</i>
Motivation -> Employee performance (partial)	$t = 5.754 > 1.655$; Sig. = 0.000	Positive and significant
Work environment -> Employee performance (partial)	$t = 4.582 > 1.655$; Sig. = 0.000	Positive and significant
Motivation and work environment -> Employee performance (simultaneous)	$F = 268.546 > 3.06$; Sig. = 0.000; $R^2 = 0.789$	Positive and significant

Source: Processed primary survey data (n = 147), 2026.

5. CONCLUSIONS

This study finds that both motivation and work environment have a positive and significant effect on employee performance at the shipyard company studied, whether tested individually or jointly, with the two variables together accounting for 78.9 percent of the variance in employee performance. Motivation shows a somewhat larger partial effect than work environment, suggesting that programs strengthening employees' internal drive - through recognition, career development, and achievement-oriented incentives - remain the more immediate lever for improving performance in this setting, but the significant independent contribution of work environment confirms that physical and psychosocial working conditions cannot be treated as secondary in a physically demanding industry such as shipbuilding. Shipyard management should therefore pursue improvements on both fronts simultaneously - sustaining motivational programs while continuing to invest in safer, more comfortable physical working conditions - rather than prioritizing one dimension at the expense of the other. Because the study is limited to a single company and a cross-sectional sample, future research could usefully extend the analysis across multiple shipyards or over

time to test whether the relative weight of motivation and work environment shifts with company size or production-technology intensity.

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Declaration

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