

Research Article

Motivation and Work Environment as Determinants of Employee Performance in Port-Warehouse Operations : A Qualitative Study at PT Yusen Logistics Indonesia

Akhmad Gifari Multazam ^{1*}, Natanael Suranta ², Larsen Barasa ³, Brenhard Mangatur Tampubolon ⁴

¹⁻⁴ Pemasaran, Inovasi, dan Teknologi, Institut Maritim, Sekolah Tinggi Ilmu Pelayaran Jakarta, Jl. Marunda

Makmur, RT.1/RW.1, Marunda, Kec. Cilincing, Jkt Utara, Daerah Khusus Ibukota Jakarta 14150, Indonesia

* Corresponding Author: Akhmad Gifari Multazam, gifariakhmad@gmail.com

Abstract: Port logistics efficiency is determined not only by the adequacy of infrastructure and the advancement of technology but also by the motivation of the workforce and the overall quality of the work environment. This study investigates how these two factors influence employee performance in the Warehouse Division of PT Yusen Logistics Indonesia. The research employed qualitative methods, gathering data through semi-structured interviews, field observations, and document analysis, with participation from warehouse workers, supervisors, and safety officers. Through thematic analysis, the study found that employee recognition and active supervisory engagement were key contributors to workforce motivation. The work environment, characterized by equipment reliability, safety culture, and yard capacity, directly impacted employee productivity. When both motivation and work environment were favorable, employees exhibited greater procedural compliance, increased throughput, and improved safety practices. In contrast, inadequate motivation and unfavorable work conditions resulted in inefficiencies, downtime, and higher risk-taking behaviors. This study's findings provide insights into three key areas: maritime economics by highlighting labor's critical role in port operations, social management by establishing the link between environmental quality and workforce productivity, and vocational education by shaping the training of cadets and practitioners. It underscores that sustainable port operations require human-centered strategies, in addition to infrastructure development. For better performance, companies should prioritize motivating their workforce and improving the work environment to foster a more efficient and safer operational setting.

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1. Introduction

Ports are among the most dynamic and complex work environments in the global economy, serving not only as nodes of transport but also as vital economic lifelines for archipelagic countries like Indonesia. With over 90 percent of international trade moving by sea, the performance of ports and their associated warehouse divisions is central to economic competitiveness (Notteboom & Rodrigue, 2021). While technological innovation and infrastructural capacity are often highlighted as drivers of port performance, the human dimension particularly worker motivation and environmental conditions remains underexplored yet essential to understanding operational outcomes.

Contemporary port operations face unprecedented challenges that amplify the importance of human factors. The integration of digital technologies, including artificial intelligence in warehouse operations, requires adaptable and motivated workforces (Elbouzidi et al., 2023). Simultaneously, environmental pressures demand sustainable practices that depend heavily on employee compliance and engagement (Zhou et al., 2024). The COVID-19 pandemic further highlighted the critical role of human resources in maintaining port resilience and operational continuity (Kim et al., 2022).



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Cargo-handling processes, including loading, unloading, and warehousing, inherently combine machinery and human labor. Ship cranes, forklifts, and yard equipment are indispensable, yet their effectiveness is mediated by the workers who operate them. This operational reality underscores the risks of accidents such as collisions, falls, and equipment failures, making occupational safety and work conditions inseparable from performance. Research on port efficiency determinants emphasizes that organizational factors, including workforce management, are equally critical as physical infrastructure (Caldas et al., 2024).

At PT Yusen Logistics Indonesia, field observations reveal multifaceted challenges: limited yard space causes rehandling inefficiencies, crane failures disrupt continuity, and inconsistent application of safety procedures increases risks. These challenges demonstrate that motivation and environment are not peripheral but foundational determinants of performance. The complexity of modern port operations, characterized by increasing cargo volumes and tighter scheduling demands, intensifies these human-centered challenges.

Academic research reinforces this perspective across multiple dimensions. Studies on seaport efficiency highlight organizational and labor-related factors as equally important as infrastructural investments (Caldas et al., 2024). Port resilience literature emphasizes the role of adaptive capacity, much of which lies in the workforce's ability to respond to disruptions (Kim et al., 2021). Environmental efficiency in international liner shipping has been tied to management practices that affect workforce perceptions and engagement (Liao & Lee, 2023). Research on sustainable port development demonstrates that green policies succeed only when frontline workers are motivated to implement them consistently (Zhou et al., 2024).

Furthermore, the maritime industry's digital transformation introduces new performance requirements. Shore power deployment, for instance, requires skilled technicians and motivated operational staff to ensure successful implementation (Qi et al., 2022). The evaluation of port service quality increasingly depends on human factors, including staff responsiveness and procedural adherence (Mwendapole & Jin, 2021). These developments underscore that technological advancement without corresponding attention to workforce motivation and environmental quality may fail to achieve desired performance outcomes.

The central research problem addressed in this study is: *What is the influence of motivation and work environment on the performance of warehouse employees in PT Yusen Logistics Indonesia, and how do these factors interact to shape efficiency, safety, and sustainability outcomes?* Specifically, three objectives guide the study: (i) to examine the effect of work motivation on employee performance, (ii) to analyze the effect of work environment on performance, and (iii) to evaluate their combined influence on operational efficiency and safety.

The rationale for this research lies in three contributions. First, it fills a scholarly gap in maritime logistics studies, which often prioritize technology over workforce dynamics. Second, it offers practical recommendations for maritime vocational education by translating workplace lessons into training insights for cadets and professionals. Third, it responds to urgent needs in Indonesian port operations, where inefficiencies and unsafe practices carry economic and social costs. Given Indonesia's strategic position in global maritime trade and its archipelagic geography, understanding these human factors is crucial for national economic competitiveness.

To achieve these objectives, this study adopts a qualitative, descriptive design. Semi-structured interviews, observations, and document analysis provide triangulated evidence. Thematic analysis structures findings around motivation, environment, and performance, while narrative synthesis integrates perspectives across roles and shifts. By foregrounding human-centered determinants, this research contributes to maritime economics, social management, and vocational training, offering a comprehensive understanding of how motivation and environment shape sustainable port operations in an era of increasing technological and environmental complexity.

2. Research Method

A qualitative approach was employed to investigate the perspectives of workers and supervisors in PT Yusen Logistics Indonesia's warehouse division. This design allowed exploration of the lived experiences of employees, capturing the nuanced interplay between motivation, work environment, and performance within the complex operational context of modern port logistics.

The population of the study included warehouse operators, tallymen, forklift and crane drivers, supervisors, and safety officers. Participants were purposively sampled because of

their direct involvement in cargo-handling activities. This focus was crucial since their roles embody both the technical and human dimensions of warehouse operations. The sample incorporated multiple operational shifts to capture performance variations across different working conditions. Supervisors and safety officers were included to provide managerial and regulatory perspectives, ensuring a comprehensive view of performance determinants across organizational hierarchies.

Research instruments comprised semi-structured interviews, structured observation checklists, and document analysis templates. The dependent variable was employee performance, conceptualized as adherence to operational procedures, efficiency of task completion, and contribution to safe, continuous throughput. Independent variables included motivation (measured through indicators of recognition, supervisory support, job satisfaction, and career development opportunities) and work environment (measured through indicators of safety climate, equipment reliability, yard conditions, and organizational support systems).

Interview guides invited respondents to narrate experiences of motivation, environmental constraints, and performance challenges. Questions explored recognition systems, supervisory relationships, equipment reliability, safety protocols, and their perceived impact on daily operations. Observations recorded practices such as adherence to signaling protocols, maintenance response times, yard-space utilization, and safety compliance behaviors. Document analysis included standard operating procedures (SOPs), maintenance logs, incident reports, performance metrics, and training records.

Data collection occurred across multiple shifts, including peak cargo-handling periods and off-peak operations, to capture contextual variation in performance and environmental conditions. Researchers conducted interviews of 45-60 minutes in private settings to ensure confidentiality and candid responses. Field observations were conducted during various operational phases, including cargo loading, unloading, and storage activities. Documents were reviewed to triangulate interview and observation data with formal organizational records.

Ethical considerations included informed consent procedures, confidentiality assurances, and anonymization of all responses. Participants were informed of their right to withdraw at any time, and all data were stored securely with access limited to the research team. The study received approval from the institutional ethics committee prior to data collection.

Data were analyzed using thematic analysis following Braun and Clarke's framework. Initial coding was conducted independently by two researchers to enhance reliability. Codes were developed deductively from research objectives and inductively from emerging insights. Themes were categorized into motivation, environment, and performance domains, with subthemes such as recognition systems, yard-space constraints, supervisory engagement, and safety culture. Cross-group comparisons identified commonalities and divergences between frontline workers, supervisors, and safety officers.

Narrative synthesis integrated findings into a coherent analysis of how motivation and environment interact to shape performance outcomes. Pattern matching was used to identify recurring themes across different data sources and participant groups. Triangulation across interviews, observations, and documents enhanced credibility and provided multiple perspectives on the same phenomena. Member checking was conducted with selected participants to validate interpretations and ensure accuracy of findings.

This methodological approach enabled the study to critically explore the human-centered determinants of port performance, offering insights for both practice and theory in maritime logistics while maintaining scientific rigor and ethical standards.

3. Results and Discussion

The findings indicate that motivation and work environment independently and interactively influence warehouse performance in complex and dynamic ways. Workers emphasized that recognition and supportive supervision fostered motivation, while reliable equipment and adequate yard space enabled efficient and safe work. When both dimensions aligned, performance improved significantly across multiple operational metrics.

3.1 Influence of Motivation on Employee Performance

Table 1. Influence of Motivation on Employee Performance.

Motivation Indicators	Positive Outcomes	Negative Outcomes
Recognition and Rewards	Higher morale, proactive problem-solving, strong loyalty, increased innovation	Declining morale, reduced adherence to SOPs, turnover risk, decreased initiative
Supervisory Engagement	Stronger teamwork, improved communication, safety compliance, knowledge transfer	Weak guidance, inconsistent procedures, frustration, skill stagnation
Intrinsic Pride in Work	Initiative, adaptability, long-term commitment, continuous improvement	Disengagement, reliance on shortcuts, low job satisfaction, resistance to change
Career Development	Enhanced skills, leadership emergence, organizational commitment	Limited growth, talent drain, reduced performance standards

3.2 Influence of Work Environment on Employee Performance

Table 2. Influence of Work Environment on Employee Performance.

Work Environment Indicators	Positive Outcomes	Negative Outcomes
Equipment Reliability	Smooth cargo flow, fewer stoppages, reduced accidents, operational confidence	Frequent delays, downtime, frustration, reduced trust in management
Safety Climate	Consistent compliance, fewer incidents, improved well-being, psychological safety	Procedural violations, higher near-miss frequency, accident risks, stress
Yard Space and Layout	Efficient stacking, reduced rehandling, faster throughput, workflow optimization	Congestion, conflicts, excessive rehandling, operational stress
Digital Infrastructure	Enhanced coordination, real-time tracking, improved efficiency	System failures, training gaps, technological resistance

3.3 Narrative Analysis of Motivation Dynamics

Narrative analysis revealed that motivation was not static but situational, shaped dynamically by the quality of supervision, recognition systems, and organizational culture. Workers particularly valued supervisors who actively engaged during shifts, provided constructive feedback, ensured clear communication, and demonstrated genuine concern for employee welfare. The research identified that effective supervisors acted as intermediaries between management expectations and operational realities, helping workers navigate complex procedural requirements while maintaining productivity standards.

Recognition systems proved more nuanced than initially anticipated. While formal recognition programs had value, workers emphasized the importance of immediate, specific feedback and informal acknowledgment of good performance. The study found that peer recognition often carried equal or greater weight than supervisory recognition, highlighting the social dimensions of motivation in team-based warehouse operations.

Conversely, distant or inconsistent supervision undermined trust and encouraged shortcuts that compromised both efficiency and safety. Workers reported that unclear communication from supervisors led to procedural confusion, increased errors, and reduced confidence in decision-making. The absence of constructive feedback created uncertainty about performance standards and reduced motivation for continuous improvement.

3.4 Environmental Factors and Performance Outcomes

The work environment acted as either an enabler or barrier to performance, with effects that extended beyond immediate operational efficiency. Equipment failures, particularly in cranes and forklifts, disrupted workflows and created cascading effects on worker motivation.

The study revealed that equipment reliability influenced not only immediate productivity but also worker confidence in management's commitment to operational excellence.

Yard-space constraints emerged as a particularly critical factor, forcing rehandling operations that added inefficiencies and heightened safety risks. Workers described how congested conditions created pressure to work faster, sometimes at the expense of safety protocols. The research identified that yard layout problems affected not only physical efficiency but also psychological stress levels and team dynamics.

Safety officers noted that congested conditions created ongoing conflicts between efficiency demands and safety requirements. This tension was particularly acute during peak operational periods when cargo volumes exceeded optimal yard capacity. The study found that these environmental pressures tested worker resilience and motivation, with some workers becoming more creative in problem-solving while others experienced increased stress and job dissatisfaction.

3.5 Interactive Effects of Motivation and Environment

The interaction between motivation and environment produced multiplicative rather than additive effects. When motivated workers operated in supportive environments, performance outcomes exceeded expectations across multiple dimensions: throughput improved, compliance strengthened, teamwork flourished, and innovation emerged. Workers in these conditions demonstrated proactive problem-solving, took initiative in process improvements, and maintained high safety standards even under pressure.

In contrast, when both motivation and environmental support were weak, performance declined sharply, creating inefficiencies and risks that negated any infrastructural advantages. The study identified a threshold effect where declining motivation and poor environmental conditions created a negative spiral: poor conditions reduced motivation, which led to decreased performance, which further deteriorated working conditions.

Particularly significant was the finding that strong motivation could partially compensate for environmental limitations, while supportive environments could sustain performance even when motivation was moderate. However, neither factor alone was sufficient to maintain optimal performance over extended periods.

3.6 Integration with Contemporary Research

These findings align with and extend current research in maritime logistics and port management. The results support Caldas et al. (2024), who argue that seaport efficiency is rooted not only in physical infrastructure but also in organizational determinants, particularly human resource management practices. The study extends Kim et al.'s (2021) framework of port resilience by demonstrating how motivation and environmental quality represent resilience capacities at the operational level that can adapt to disruptions and maintain performance under stress.

The findings also corroborate Zhou et al. (2024), who emphasize that sustainability policies succeed only when frontline adherence is secured through motivated implementation. The current study provides operational-level evidence for this argument, showing how environmental sustainability in port operations depends on worker motivation to follow green procedures even when they may initially reduce efficiency.

The research contributes to the growing literature on digital transformation in maritime logistics by showing how technological interventions must be accompanied by attention to human factors. Similar to Elbouzidi et al. (2023), who highlight the importance of human-AI collaboration in warehouse operations, this study demonstrates that technology adoption success depends heavily on worker motivation and environmental support for learning new systems.

Furthermore, the study extends Liao and Lee's (2023) work on environmental efficiency by providing evidence that regulatory compliance in shipping operations requires not only policy frameworks but also motivated workforces operating in supportive environments. The research shows how environmental performance standards are ultimately implemented through individual worker decisions that are influenced by motivation and environmental factors.

3.7 Implications for Maritime Education and Training

The findings have significant implications for maritime vocational education and professional development. The study highlights how training programs can integrate lessons on recognition systems, supervisory engagement, and environmental awareness to prepare future maritime professionals for the realities of port operations. Specifically, the research suggests that training curricula should include modules on: (1) Human resource management in maritime contexts. (2) Environmental psychology in industrial settings. (3) Leadership and

supervision skills for operational environments. (4) Safety culture development and maintenance. (5) Change management for technological adoption.

These educational implications align with contemporary needs for maritime professionals who can navigate both technical and human dimensions of port operations, particularly as the industry undergoes digital transformation and faces increasing environmental regulatory requirements.

4. Conclusion

This study demonstrates that employee motivation and work environment jointly determine warehouse performance in port logistics through complex, interactive mechanisms that extend beyond simple additive effects. Evidence from PT Yusen Logistics Indonesia shows that recognition systems, supervisory engagement, equipment reliability, and safety culture directly shape efficiency, procedural compliance, and safety outcomes across multiple operational dimensions.

The research reveals that when motivation and environmental factors are aligned, they create synergistic effects that enhance throughput, improve safety compliance, foster innovation, and build organizational resilience. Conversely, when these factors are absent or poorly managed, they foster inefficiencies, safety risks, and worker disengagement that undermine even substantial infrastructural investments.

The study contributes to three critical domains. First, it advances maritime economics by positioning labor and human resource management as central determinants of port performance, providing empirical evidence for the economic value of investing in workforce motivation and environmental quality. Second, it enriches social management theory by demonstrating how environmental quality influences workforce productivity through psychological and social mechanisms that affect both individual and team performance. Third, it informs vocational education by translating workplace insights into training priorities, helping prepare future maritime professionals for the complex human dynamics of port operations.

The findings have immediate practical implications for port management and policy. Sustainable port operations require urgent investment not only in physical infrastructure and technology but also in comprehensive workforce motivation systems and supportive environmental conditions. This dual investment approach is particularly critical as ports face increasing pressure from digital transformation, environmental regulations, and competitive global trade demands.

The research also highlights the need for integrated approaches to port development that consider human factors alongside technological and infrastructural improvements. As the maritime industry continues to evolve, the ability to maintain motivated workforces in supportive environments will become increasingly critical for operational success and competitive advantage.

Future research should explore these relationships across different port types, operational scales, and cultural contexts to enhance the generalizability of findings. Additionally, longitudinal studies could examine how motivation and environmental factors influence performance over time, particularly during periods of organizational change or technological adoption.

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