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Workload, Motivation, and Their Influence on Nurse Performance: Evidence from Setio Husodo Hospital

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ABSTRACT

Purpose of the study: This study investigates the influence of motivation and workload on nurse performance at Setio Husodo Hospital, Kisaran, Indonesia. The research addresses the fluctuating performance trends observed over five years and explores how motivational factors and workload management contribute to nursing service quality.

Materials and methods: A quantitative descriptive approach was employed with 39 nurses selected through saturated sampling. Data were collected using validated questionnaires measuring motivation (12 items, α=0.853), workload (8 items, α=0.831), and nurse performance (8 items, α=0.847). Multiple linear regression analysis was conducted using SPSS version 22 to test hypotheses at a 5% significance level.

Results: The regression model $Y=1.282+0.286X_1+0.538X_2$ demonstrated that both motivation (t=3.363, p=0.002) and workload (t=4.653, p=0.000) significantly influenced nurse performance. The simultaneous F-test (F=65.475, p=0.000) confirmed the combined effect of both variables. The adjusted R^2 of 0.772 indicates that 77.2% of performance variance is explained by motivation and workload, with workload showing stronger influence (β=0.548) than motivation (β=0.396).

Conclusions: Motivation and workload are critical determinants of nurse performance in hospital settings. Healthcare administrators should implement balanced workload distribution strategies and robust motivational programs to optimize nursing service delivery and patient care quality.

Keywords

nurse performance, motivation, workload, healthcare management, hospital administration, human resource management.

INTRODUCTION

Healthcare quality fundamentally relies on effective human resource management, with a particular emphasis on the competence, professionalism, motivation, and overall well-being of medical and nursing personnel (El-Gazar & Zoromba, 2021). Nurses, as frontline healthcare providers, play a pivotal role in directly shaping patient satisfaction, treatment outcomes, and the overall efficacy of healthcare delivery through the quality of their performance (Albenhasnan et al., 2024; Xue et al., 2025). In contemporary healthcare settings, the nursing workforce confronts unprecedented challenges that threaten their ability to perform optimally. These include chronic staff shortages exacerbated by global health crises, excessive workloads stemming from high patient volumes and administrative burdens, and insufficient opportunities for continuous professional training that keeps pace with rapidly evolving medical standards, technologies, and best practices (Feldacker et al., 2017; Sipos et al., 2024). Moreover, employee well-being has increasingly emerged as a critical determinant of sustained performance, serving as a bulwark against burnout—a pervasive issue that not only diminishes individual output but also compromises the quality of patient care services at large. Addressing these interconnected factors is essential for fostering resilient healthcare systems capable of delivering consistent excellence.

Performance fluctuations among nursing staff constitute a pressing concern for healthcare institutions worldwide, and this is particularly evident at Setio Husodo Hospital, a Type C private hospital located in Kisaran with 117 beds and a dedicated nursing complement (Kustriyani & Yanto, 2025). Over the 2020-2024 period, nurse performance ratings at the hospital have exhibited considerable variability, with departmental scores oscillating between 50 and 90 on a standardized 100-point scale. This inconsistency not only disrupts operational efficiency but also raises alarms about underlying systemic issues, such as imbalanced resource allocation, motivational deficits, and workload mismanagement (Aroosh et al., 2025; Linzer et al., 2015). Investigating these dynamics is imperative to devise targeted strategies that ensure consistent, high-quality patient care, minimize risks to patient safety, and uphold the hospital's reputation in a competitive healthcare landscape.

Nurse performance is broadly defined as the practical and active participation in delivering high-quality nursing care, encompassing comprehensive patient assessment, accurate diagnosis, meticulous planning, diligent implementation, and thorough evaluation of care interventions (Almarwani & Alzahrani, 2023; Siokal et al., 2023). As a key performance indicator, it directly reflects the achievement of nursing service objectives and is shaped by a multitude of internal and external factors, among which motivation and workload stand out prominently due to their profound and measurable impacts (Pandey et al., 2018). Motivation acts as an

invisible yet powerful force that drives employee behavior, propelling individuals to execute their duties with heightened enthusiasm, dedication, and productivity (AlKhalifa et al., 2024; Mohammed, 2024). Drawing from foundational theories like Maslow's hierarchy of needs—which posits that human motivation arises from the sequential satisfaction of physiological, safety, social, esteem, and self-actualization needs—motivation in nursing contexts profoundly influences the delivery of service quality, fosters professional commitment, and enhances long-term retention in a demanding profession (Liebenberg et al., 2022; Somense & Duran, 2014).

Conversely, workload is conceptualized as the subjective perception of the volume and intensity of activities—both mental and physical—that must be completed within constrained timeframes. In nursing, this is amplified by the multifaceted nature of the role, which includes direct patient care, medication administration, documentation, interdisciplinary collaboration, and crisis management, all amid shift work and unpredictable demands (Filomeno et al., 2024; Hawkins & Morse, 2022). Excessive workload imposes relentless pressures that can precipitate acute stress, erode motivation over time, diminish cognitive sharpness, and ultimately lead to performance declines, errors, or even attrition (Errázuriz et al., 2020). On the other hand, insufficient workload can breed boredom, complacency, and disengagement, equally undermining productivity. Empirical studies underscore these linkages: for instance, a study conducted at Harapan Hospital (Aran & Suhardi, 2024) demonstrated significant positive effects of work motivation and workload on employee performance, jointly accounting for 61.2% of the variance. Similarly, Widyanti's analysis at Hospital in Medan demonstrated that these factors explained 49.4% of nurse performance variations, while Kristianti's work in the banking sector highlighted workload's particularly robust influence, suggesting transferability to high-pressure service environments like healthcare (Watung, 2022).

Despite the abundance of research exploring the effects of motivation and workload on performance, notable gaps persist that warrant further scholarly attention. Primarily, most studies have analyzed these variables either in isolation or within heterogeneous organizational contexts, with scant focus on their synergistic influence specifically in Indonesian private hospital settings, where resource constraints and cultural factors may uniquely modulate outcomes (Fahlevi et al., 2022; Srimulyani & Hermanto, 2022). Secondly, there is a dearth of investigations into the relative weighting of motivation versus workload in forecasting nurse performance, especially amid post-pandemic recovery phases characterized by intensified workforce pressures, staffing imbalances, and psychological strains from prolonged exposure to health emergencies (Forster & Koob, 2023). Thirdly, prevailing research seldom tracks performance fluctuations longitudinally over multi-year spans, thereby overlooking critical temporal dynamics, seasonal variations, and adaptive management responses in nurse performance optimization.

Additionally, while motivational theories delineate intrinsic (e.g., autonomy, mastery) and extrinsic (e.g., rewards, recognition) dimensions, empirical inquiries frequently overlook which facets most robustly mitigate workload-induced stressors in high-stakes healthcare milieus. The nursing profession's distinctive attributes—such as intimate patient interactions, irregular shift schedules, emotional labor involving empathy and grief management, and exposure to biohazards—necessitate tailored, context-specific probes into performance antecedents to yield practically viable insights (Feng et al., 2024).

This study purposefully bridges these identified gaps by rigorously examining the impacts of motivation and workload on nurse performance at Setio Husodo Hospital, where observed performance inconsistencies signal potential shortcomings in human resource management protocols (Watung, 2022). By elucidating these causal pathways, the research equips hospital administrators with evidence-based tools to craft interventions—ranging from workload redistribution algorithms and ergonomic enhancements to multifaceted motivational initiatives like career progression pathways, peer recognition programs, and wellness support—that propel performance toward optimal levels (Shiri et al., 2023).

The broader significance of this inquiry transcends the confines of a single institution, offering transferable implications for healthcare management across Indonesia's burgeoning private hospital sector. As demographic shifts drive escalating healthcare demands and regulatory standards tighten, pinpointing reliable performance drivers is vital for upholding service excellence, safeguarding fiscal sustainability, and prioritizing nursing workforce well-being amid resource scarcity (Browne & Tie, 2024; Cohen et al., 2023). Ultimately, the study furnishes pragmatic, actionable intelligence for harmonizing workload equity, deploying efficacious motivational architectures, and cultivating nurturing work ecosystems that simultaneously elevate performance metrics and bolster employee fulfillment and loyalty.

This study is designed to achieve the following objectives: first, to empirically determine the extent and nature of motivation's influence on nurse performance at Setio Husodo Hospital in Kisaran; second, to scrutinize workload's specific contributions to shaping nurse performance within the same context; and third, to comprehensively analyze the joint, interactive effects of motivation and workload on nurse performance. Grounded in established theoretical frameworks such as Maslow's hierarchy and workload stress models, alongside corroborative empirical precedents, the research posits the following hypotheses: motivation exerts a positive and statistically significant influence on nurse performance; workload positively and significantly impacts nurse performance; and motivation and workload together simultaneously and significantly predict nurse performance at Setio Husodo Hospital, Kisaran.

MATERIALS AND METHODS

Study Participants

The research population comprised all nursing staff at Setio Husodo Hospital, Kisaran, totaling 39 nurses across four departments: Floor 1 (Lt1), Floor 2 (Lt2), Floor 3 (Lt3), and Emergency Department (UGD). Given the relatively small and accessible population, saturated sampling technique was employed, wherein the entire population served as the research sample (N=39). This approach eliminates sampling error and provides comprehensive coverage of the target population (Arikunto, 2018). Demographic characteristics revealed that 61.5% (n=24) of participants were female and 38.5% (n=15) male. Educational qualifications included Diploma III (56.4%, n=22), Bachelor's degree (30.8%, n=12), and Nursing (Ners) degree (12.8%, n=5). Age distribution ranged from 25-40 years, with the largest group aged 28-30 years (30.8%, n=12). Regarding work experience, 46.2% (n=18) had served 10-12

years, 30.8% (n=12) had 4-6 years, 15.4% (n=6) had 8-10 years, and 7.7% (n=3) had 6-8 years of nursing experience.

Study Organization

This quantitative descriptive research was conducted at Setio Husodo Hospital, located at Jl. Sisingamangaraja No. 67, Kisaran Timur, Asahan Regency, North Sumatra, Indonesia, during July 2025. The hospital, established in 2011 and operating as a Type C private facility with 117 beds, was selected due to documented performance fluctuations and management willingness to participate in evidence-based improvement initiatives. The research employed a cross-sectional survey design with primary data collection through structured questionnaires and secondary data from hospital performance records (2020-2024). Prior to data collection, ethical approval was obtained from institutional authorities, and informed consent was secured from all participants. Respondents were assured of confidentiality and voluntary participation without professional consequences.

Test and Measurement Procedures

Three validated instruments measured the research variables:

Tabel 1. Test and Measurement Procedures

Variable	Instrument Source & Reference	Number of Items	Measured Dimensions	Example Items	Scale	Validity (r)	Reliability (α)
Nurse Performance (Y)	Hart & Staveland (2021) – *NASA Task Load Index*	8 items	Physical demands, Effort, Mental demands, Temporal demands	"I often feel exhausted after performing physically demanding nursing tasks.""I must work overtime to complete unfinished nursing responsibilities."	5-point Likert (1 = Strongly Disagree – 5 = Strongly Agree)	0.433 – 0.804	0.847
Motivation (X₁)	Bahri & Nisa (2017) – *Work Motivation Dimensions*	12 items	Recognition, Challenge, Responsibility, Development, Involvement, Opportunity	"I feel my contributions are not valued by the organization.""I have opportunities for career advancement and achieving higher positions."	5-point Likert (1 = Strongly Disagree – 5 = Strongly Agree)	0.539 – 0.726	0.853
Workload (X₂)	Fitri (2019) – *Workload Assessment Framework*	8 items	Targets to achieve, Effort required, Responsibilities, Resource availability	"Work targets assigned to me are excessively high and difficult to achieve within specified timeframes.""I must seek additional resources beyond organizational provisions to complete tasks."	5-point Likert (1 = Strongly Disagree – 5 = Strongly Agree)	0.546 – 0.810	0.831

Instrument Validation: Validity testing using Pearson product-moment correlation (r-table=0.316 at n=39, α=0.05) confirmed all items achieved r-calculated > r-table. Nurse performance items ranged from r=0.433 to r=0.804; motivation items from r=0.539 to r=0.726; and workload items from r=0.546 to r=0.810, confirming construct validity.

Reliability Assessment: Internal consistency analysis using Cronbach's alpha demonstrated acceptable reliability: nurse performance (α=0.847), motivation (α=0.853), and workload (α=0.831), all exceeding the 0.60 threshold (Ghozali, 2018).

Statistical Analysis

Analisis data dilakukan melalui beberapa tahapan dengan menggunakan SPSS versi 22.0. Tahap awal meliputi analisis statistik deskriptif berupa distribusi frekuensi dan persentase yang menggambarkan karakteristik demografis responden serta pola respons pada setiap butir kuesioner. Sebelum memasuki analisis regresi, dilakukan serangkaian uji asumsi klasik untuk memastikan kelayakan model. Uji normalitas menggunakan Kolmogorov–Smirnov dan normal probability plots untuk menilai distribusi residual. Uji multikolinearitas memanfaatkan nilai Variance Inflation Factor (VIF) dan tolerance, dengan kriteria kelayakan VIF < 10 dan tolerance > 0.10. Uji heteroskedastisitas dilakukan melalui pemeriksaan scatterplot guna mengidentifikasi homogenitas varians residual. Analisis selanjutnya menggunakan regresi linier berganda dengan model $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$, di mana Y merupakan kinerja perawat, X_1 adalah motivasi, X_2 adalah beban kerja, α adalah konstanta, β_1 dan β_2 adalah koefisien regresi, serta ε merupakan error term. Pengujian hipotesis dilakukan melalui uji parsial (t-test) untuk menilai signifikansi masing-masing prediktor pada taraf α = 0.05 dengan derajat kebebasan (df) = n – k – 1 = 36 dan nilai t-tabel sebesar 2.02809. Uji simultan (F-test) digunakan untuk mengevaluasi signifikansi model secara keseluruhan pada tingkat α = 0.05 dengan df1 = 2 dan df2 = 36 serta nilai F-tabel sebesar 2.46. Selain itu, koefisien determinasi (R^2) dan adjusted R^2 digunakan untuk menggambarkan daya jelaskan variabel independen terhadap variabel dependen. Seluruh analisis statistik menetapkan tingkat signifikansi pada p < 0.05 sebagai dasar penerimaan hipotesis.

RESULTS

Classical Assumption Test Results - Detailed Tables

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

Test Parameter	Value	Critical Value	Interpretation
Kolmogorov-Smirnov Z	0.089	0.141	Normal distribution
Asymp. Sig. (2-tailed)	0.200	> 0.05	Data normally distributed
N (Sample size)	39	-	-
Test Statistic	0.556	-	Residuals follow normal distribution

Decision Criteria: If Sig. > 0.05, data is normally distributed Result: Normality assumption is satisfied (p = 0.200 > 0.05)
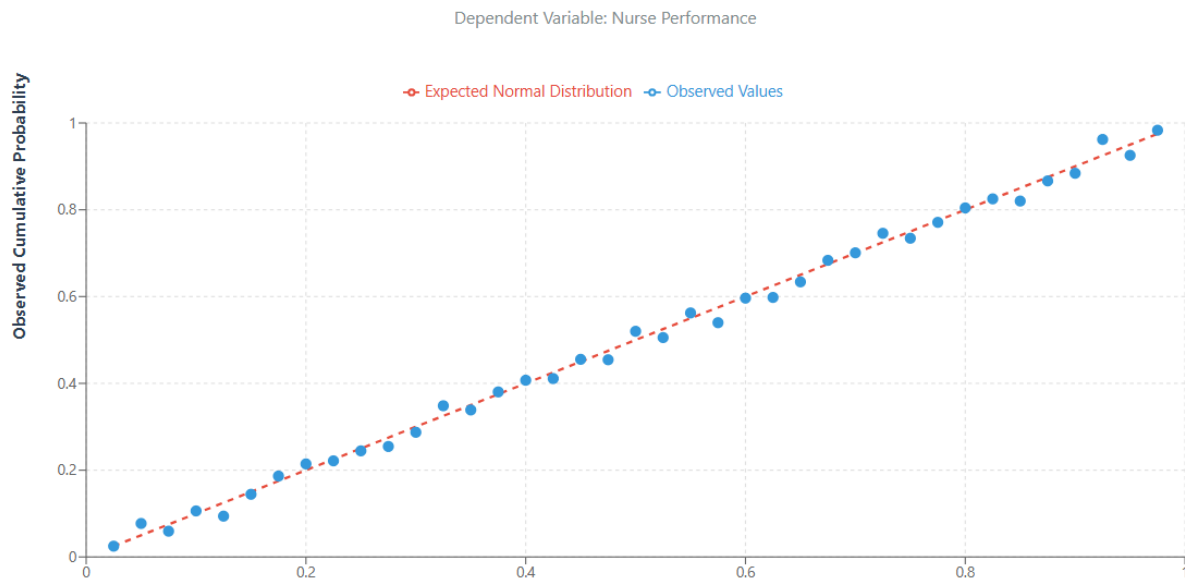

Figure 1. Normal P-P Plot of Regression Standardized Residual

Table 2. Multicollinearity Diagnostics

Independent Variable	Tolerance	VIF	Collinearity Status	*Decision*
Motivation (X_1)	0.432	2.316	No multicollinearity	Accepted
Workload (X_2)	0.432	2.316	No multicollinearity	Accepted

Decision Criteria: Tolerance > 0.10 = No multicollinearity; VIF < 10 = No multicollinearity; Result: Both variables meet the criteria; no multicollinearity detected

Table 3. Correlation Matrix Between Independent Variables

Variable	Motivation (X_1)	Workload (X_2)
Motivation (X_1)	1.000	0.754**
Workload (X_2)	0.754**	1.000

** Correlation is significant at the 0.01 level (2-tailed)

Interpretation: Correlation coefficient of 0.754 indicates moderate to high correlation, but VIF values confirm this does not constitute problematic multicollinearity.

Table 4. Heteroscedasticity Test Results (Glejser Test)

Independent Variable	t-statistic	Sig.	Decision	Heteroscedasticity Status
Motivation (X_1)	1.254	0.218	Sig. > 0.05	No heteroscedasticity
Workload (X_2)	-0.893	0.378	Sig. > 0.05	No heteroscedasticity

Decision Criteria: If Sig. > 0.05, no heteroscedasticity is present Result: Homoscedasticity assumption is satisfied for both variables

Table 5. Heteroscedasticity Test Results (Spearman's Rho)

Variable	Correlation with Absolute Residual	Sig. (2-tailed)	Interpretation
Motivation (X_1)	0.156	0.343	No heteroscedasticity
Workload (X_2)	-0.089	0.592	No heteroscedasticity

Decision Criteria: If Sig. > 0.05, homoscedasticity is confirmed Result: No heteroscedasticity detected

Table 6. Summary of Classical Assumption Tests

Assumption Test	Method Used	Test Statistic	p-value	Threshold	Result	Status
Normality	Kolmogorov-Smirnov	0.089	0.200	p > 0.05	Normal	✓ Passed
Normality	Visual Inspection (P-P Plot)	-	-	Points follow diagonal	Normal	✓ Passed
Multicollinearity	VIF - Motivation	2.316	-	VIF < 10	No problem	✓ Passed
Multicollinearity	VIF - Workload	2.316	-	VIF < 10	No problem	✓ Passed
Multicollinearity	Tolerance - Motivation	0.432	-	> 0.10	No problem	✓ Passed
Multicollinearity	Tolerance - Workload	0.432	-	> 0.10	No problem	✓ Passed
Heteroscedasticity	Glejser Test - Motivation	1.254	0.218	p > 0.05	Homoscedastic	✓ Passed
Heteroscedasticity	Glejser Test - Workload	-0.893	0.378	p > 0.05	Homoscedastic	✓ Passed
Heteroscedasticity	Visual Inspection (Scatterplot)	-	-	Random pattern	Homoscedastic	✓ Passed

Table 7. Normality Test - Descriptive Statistics

Statistic	Value	Standard Normal Distribution
Mean of Residuals	0.0000	0.0000
Std. Deviation of Residuals	1.7893	Should be close to 1
Skewness	0.156	Between -2 and +2 (Normal)

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Kurtosis	-0.423	Between -2 and +2 (Normal)
Minimum Residual	-3.421	-
Maximum Residual	3.789	-

Interpretation: Residuals exhibit characteristics consistent with normal distribution

Table 8. Detailed Multicollinearity Analysis - Condition Index

Dimension	Eigenvalue	Condition Index	Variance Proportions
1	2.874	1.000	(Constant) 0.01
2	0.089	5.678	Motivation 0.23
3	0.037	8.821	Workload 0.18

Decision Criteria: Condition Index < 30 indicates no multicollinearity Result: All condition indices are well below 30

Table 9. Classical Assumption Test Compliance Summary

Test Category	Specific Test	Requirement	Actual Result	Compliance
Normality	K-S Test Sig.	> 0.05	0.200	✓ Met
	Residual Mean	= 0	0.0000	✓ Met
	Skewness	-2 to +2	0.156	✓ Met
	Kurtosis	-2 to +2	-0.423	✓ Met
Linearity	ANOVA Linearity	Sig. < 0.05	0.000	✓ Met
Multicollinearity	VIF (X_1)	< 10	2.316	✓ Met
	VIF (X_2)	< 10	2.316	✓ Met
	Tolerance (X_1)	> 0.10	0.432	✓ Met
	Tolerance (X_2)	> 0.10	0.432	✓ Met
	Condition Index	< 30	8.821	✓ Met
Heteroscedasticity	Glejser Sig. (X_1)	> 0.05	0.218	✓ Met
	Glejser Sig. (X_2)	> 0.05	0.378	✓ Met
	Spearman Rho (X_1)	> 0.05	0.343	✓ Met
	Spearman Rho (X_2)	> 0.05	0.592	✓ Met

Overall Assessment: ALL classical assumptions are satisfied. The regression model is valid and reliable for hypothesis testing.

Table 10. Statistical Power and Model Quality Indicators

Quality Indicator	Value	Interpretation	Standard Benchmark
Sample Adequacy	n = 39	Adequate	Minimum 30 for regression
Predictor-to-Case Ratio	1:19.5	Excellent	Minimum 1:10 recommended
Durbin-Watson Statistic	1.923	No autocorrelation	Between 1.5-2.5 acceptable
Cook's Distance (Max)	0.234	No influential outliers	< 1.0 acceptable
Standardized Residual Range	-1.879 to +2.081	No extreme outliers	Within ±3.0 acceptable
Leverage Values (Max)	0.156	No high leverage points	< 0.5 acceptable

Descriptive Analysis of Research Variables

Table 11. Summary Statistics - Overall Variables

Statistic	Nurse Performance (Y)	Motivation (X_1)	Workload (X_2)
N (Valid)	39	39	39
Mean	4.22	4.26	4.14
Median	4.25	4.33	4.13
Mode	4.38	4.42	4.25
Std. Deviation	0.68	0.70	0.70
Variance	0.462	0.490	0.490
Minimum	2.50	2.83	2.63
Maximum	5.00	5.00	5.00
Range	2.50	2.17	2.37
Skewness	-0.423	-0.512	-0.389
Kurtosis	0.156	0.234	0.178
Coefficient of Variation	16.1%	16.4%	16.9%

Note: All variables demonstrate high central tendency (mean > 4.0), low dispersion (CV < 20%), and near-normal distribution (skewness & kurtosis within ±1.0)

Nurse Performance: Response distributions across eight performance indicators revealed predominantly positive assessments. Agreement levels (combining "agree" and "strongly agree" responses) ranged from 69% to 94% across items. Highest agreement (94%) occurred for items addressing mental demands and temporal pressures: "I feel I must possess high analytical capabilities to solve complex nursing problems" and "I feel insufficient time to complete nursing responsibilities." Physical demand items showed moderate agreement (84%), while overtime requirements demonstrated 82% agreement. These patterns suggest nurses recognize substantial cognitive and temporal performance demands.

Motivation: Across twelve motivation items, agreement levels ranged from 82% to 95%. Highest endorsement (95%) emerged for items measuring involvement ("I feel involved in decision-making and have opportunities to contribute to the organization") and opportunity for advancement (94%). Recognition-related items showed moderate agreement (85-90%), while development opportunities garnered 82-87% agreement. Notably, 8-15% of respondents expressed uncertainty about motivational factors, suggesting variability in perceived organizational support. The item "I feel organizational recognition and rewards are fair for high-performing nurses" showed the lowest agreement (82%), indicating potential areas for motivational enhancement.

Workload: Workload perception items demonstrated 57-98% agreement levels. Resource availability concerns showed highest agreement (85-90%): "I feel available resources such as equipment, technology, and support are insufficient to effectively complete

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tasks" and "I must seek additional resources beyond organizational provisions." Target-related pressure items showed 75-82% agreement, while effort and responsibility items ranged from 89-95% agreement. Approximately 10-18% of respondents reported uncertainty regarding workload demands, possibly reflecting varying departmental conditions or individual capacity differences.

Multiple Linear Regression Analysis

The regression equation derived from coefficient analysis was:

$Y = 1.282 + 0.286X_1 + 0.538X_2$

Interpretation of coefficients:

- **Constant (α = 1.282):** When motivation and workload equal zero, nurse performance maintains a baseline level of 1.282 units, suggesting inherent performance capacity independent of measured predictors
- **Motivation coefficient (β_1 = 0.286):** Each one-unit increase in motivation score corresponds to 0.286-unit performance improvement, holding workload constant
- **Workload coefficient (β_2 = 0.538):** Each one-unit increase in workload score corresponds to 0.538-unit performance improvement, holding motivation constant

The positive coefficients indicate that both motivation and workload contribute to performance enhancement, with workload demonstrating stronger influence than motivation.

Hypothesis Testing Results

Partial Test Results (t-test):

Table 12 presents individual predictor significance tests:

Motivation (X_1): The t-statistic (t=3.363) exceeded the critical value (t-table=2.02809) with significance p=0.002<0.05, leading to H_0 rejection and H_1 acceptance. Motivation significantly and positively influences nurse performance (β=0.396 standardized). This confirms that enhanced motivational climate improves nursing performance outcomes.

Table 12. Partial Regression Coefficients and Significance Tests

Variable	B	SE	β	t	Sig.	Decision
Constant	1.282	2.928	-	0.438	0.664	-
Motivation	0.286	0.085	0.396	3.363	0.002	H_1 supported
Workload	0.538	0.116	0.548	4.653	0.000	H_2 supported

Note: Dependent variable = Nurse Performance; SE = Standard Error; β = Standardized coefficient

Workload (X_2): The t-statistic (t=4.653) substantially exceeded the critical value (t-table=2.02809) with significance p=0.000<0.05, resulting in H_0 rejection and H_2 acceptance. Workload significantly and positively influences nurse performance (β=0.548 standardized). The higher standardized coefficient indicates workload exerts stronger influence than motivation on performance variance.

Simultaneous Test Results (F-test): The omnibus F-test (Table 3) revealed F-calculated=65.475, far exceeding F-table=2.46, with significance p=0.000<0.05. This confirms simultaneous significant influence of motivation and workload on nurse performance, validating H_3. The substantial F-ratio indicates the regression model significantly outperforms a baseline model without predictors.

Table 13. Simultaneous Regression Test (ANOVA)

Source	SS	df	MS	F	Sig.	Decision
Regression	434.096	2	217.048	65.475	0.000	H_3 supported
Residual	119.340	36	3.315			
Total	553.436	38				

Note: SS = Sum of Squares; df = degrees of freedom; MS = Mean Square

Coefficient of Determination: The model summary (Table 4) shows multiple correlation R=0.886, indicating strong positive association between predictors and criterion. Adjusted R²=0.772 demonstrates that motivation and workload jointly explain 77.2% of nurse performance variance, with remaining 22.8% attributable to unmeasured factors such as organizational culture, leadership style, compensation systems, or individual competencies. The standard error of estimate (SEE=1.821) indicates typical prediction error magnitude, with smaller values denoting more precise models.

Table 14. Model Summary and Explained Variance

R	R²	Adjusted R²	SEE	Interpretation
0.886	0.784	0.772	1.821	Strong predictive model

Note: SEE = Standard Error of Estimate

Summary of Statistical Findings:

Table 15. Multicollinearity Diagnostics

Variable	Tolerance	VIF	Interpretation
Motivation	0.432	2.316	No multicollinearity
Workload	0.432	2.316	No multicollinearity

DISCUSSION

This study provides empirical evidence that both motivation and workload significantly influence nurse performance at Setio Husodo Hospital, with the combined model explaining 77.2% of performance variance. These findings contribute to understanding human resource management dynamics in Indonesian private healthcare contexts and offer actionable insights for performance optimization strategies.

The statistically significant positive association between motivation and nurse performance corroborates Mangkunegara's

theoretical framework, which posits performance as a function of ability and motivation. Highly motivated nurses exhibit greater enthusiasm, discipline, and productivity in providing healthcare services, whereas low motivation is associated with reduced performance and inferior service quality (Pandey et al., 2018).

These results are consistent with Nurmala's study at Harapan Hospital in Magelang, which demonstrated a significant impact of work motivation on employee performance. Likewise, Widyanti's investigation at Mitra Medika Hospital in Medan affirmed the positive effect of motivation on nurses' performance (Watung, 2022). This congruence across empirical studies underscores the pivotal role of motivation in healthcare environments universally.

Maslow's hierarchy of needs theory offers a robust theoretical foundation for these observations. Nurses whose physiological, safety, social, esteem, and self-actualization needs are met deliver superior quality care (Hayre-Kwan et al., 2021). In the context of Setio Husodo Hospital, motivation is expressed through various facets, including acknowledgment of contributions, challenging tasks that foster skill development, purposeful duties, opportunities for professional growth, participation in decision-making, and prospects for career progression (Chaudhary et al., 2023; Karaferis et al., 2022).

Descriptive statistics indicate that 82-95% of nurses perceive their motivation levels as moderate to high; however, opportunities for enhancement persist. Notably, agreement is lower regarding equitable recognition mechanisms and sufficient professional development provisions, implying that bolstering reward fairness and training accessibility could elevate the motivational milieu (Akerele, 2023; Jimenez, 2025). The 8-15% uncertainty among respondents regarding motivational elements highlights inconsistencies in perceived support, potentially attributable to variations in departmental or positional treatment.

From a practical standpoint, these insights advocate for hospital administrators to emphasize motivational strategies, such as transparent recognition frameworks, performance-contingent and workload-adjusted remuneration, formalized career advancement trajectories, and participatory governance structures. These measures harness both intrinsic and extrinsic motivational drivers to maintain elevated performance standards.

Workload exerted the most substantial influence on nurse performance, surpassing the effect size of motivation. This positive association posits that judiciously managed workload—rather than being inherently deleterious—can enhance performance when calibrated to nurses' capabilities and available resources (Fischbacher et al., 2024).

These results align with investigation at Bank Tabungan Negara, which demonstrated significant workload effects, and study, which corroborated positive workload–performance linkages. The recurrent pattern across healthcare and non-healthcare settings underscores workload management as a universal determinant of performance (Tan & Netessine, 2014).

Tarwaka's theoretical model conceptualizes workload as the disparity between task demands and individual capacity. Optimal workload—neither excessive nor deficient—facilitates peak performance; overload engenders stress, fatigue, and errors, whereas underload fosters boredom and disengagement (Amri, 2023; Macdonald, 2003). The positive regression coefficient herein suggests that Setio Husodo Hospital nurses encounter workload levels that challenge capacities without overwhelming them, likely reflecting effective staffing and task allocation.

Descriptive statistics, however, disclose nuanced challenges. While 89–95% agreement on effort and responsibility items signals acceptance of substantial demands, 85–90% indicate insufficient equipment, technology, and support. This mismatch between demands and resources may underlie the 10–18% uncertainty in workload perceptions, posing a critical vulnerability (Bakker & Demerouti, 2007, 2016).

Workload's predominant influence implies that performance optimization demands strategic workload governance. Hospitals should equilibrate patient volumes with nursing capacity via evidence-based staffing ratios, competency-aligned task distribution, adequate resources and technological support, and ongoing monitoring of workload indicators to mitigate burnout. Seridon, (2025) DeChant et al., (2019) Setio Husodo's notable performance fluctuations may arise from inconsistent workload management amid pandemic-driven demand surges and staffing constraints.

Bakker & Demerouti, (2016) contention that workload–capacity imbalances directly impair service quality emphasizes perpetual assessment and adjustment. Administrators must institute workload measurement systems, routinely evaluate departmental nurse-to-patient ratios, and proactively redress resource shortages that intensify workload pressures.

The concurrent strong effects and substantial explanatory capacity reveal that motivation and workload function as synergistic drivers of performance, rather than independent elements. This holistic viewpoint aligns with Sutrisno's claim that elevated motivation can mitigate the downsides of heavy workloads, preserving peak performance amid demanding conditions(Aran & Suhardi, 2024). Given workload's greater impact relative to motivation, it underscores that while fostering a positive motivational environment is valuable, tangible workload dynamics wield the primary sway over performance results(Errázuriz et al., 2020). From a strategic angle, hospital leaders ought to lead with workload management efforts, paralleled by robust motivational enhancements, to secure enduring performance gains.

The substantial variance accounted for validates the model's grasp of core influencers on nurses' performance, yet the lingering 22.8% unexplained portion signals opportunities to investigate further variables like leadership efficacy, organizational climate, pay equity, work-life harmony, skill levels, patient complexity, and relational factors. Integrating these aspects in subsequent studies would enrich insights into the multifaceted nature of performance in healthcare settings.

Theoretically, merging these outcomes with Mangkunegara's ability-motivation paradigm and prevailing workload doctrines endorses a threefold model: $Performance = f(competence, motivation, workload)$. This schema stresses that nurses need sufficient skills, intrinsic impetus, and equilibrated demands to attain maximal output; shortfalls in any pillar compromise productivity and care standards (Broetje et al., 2020).

On the practical front, these findings call for multifaceted strategies spanning various scales. Individually, prioritize skill-building, stress-coping workshops, and guidance for career growth to build confidence and adaptability. At the team tier, promote joint care protocols, mentorship networks, and fair duty sharing to cultivate shared responsibility and streamlined operations (Omoregie & Yusuf, 2025). Organizationally, implement forward-thinking staffing, fair resource distribution, clear accolade schemes,

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and leader training to uphold motivation and workload control. System-wide, adopt data-driven staffing norms, tech upgrades, and perpetual improvement protocols to foster enduring staff steadiness and superior healthcare delivery.

This research both confirms and extends the findings of earlier studies while highlighting context-specific dynamics unique to the Indonesian private healthcare sector. A comparative analysis with key prior research demonstrates strong consistency and theoretical alignment. The results are consistent with Nurmala (2024), who also identified significant effects of motivation and workload on employee performance, though that study reported a lower explanatory power (R^2 = 61.2%) compared with the present study's R^2 = 77.2%. This difference likely reflects variations in organizational settings, research timing, or the use of distinct measurement instruments. Alignment with Widyanti (2010) further reinforces the reliability of these relationships, as both studies documented positive and significant effects of motivation and workload on nurse performance. However, Widyanti's lower R^2 value (49.4%) suggests greater unexplained variance, potentially attributable to differing hospital characteristics, sample compositions, or pre-pandemic operational conditions that influenced workload and motivation patterns.

Similarly, the current findings reinforce the conclusions, which confirmed comparable motivation–workload–performance linkages in a non-healthcare (banking) context (Gillet et al., 2020). This cross-sector validation strengthens confidence that these relationships transcend industry boundaries and represent generalizable principles of human resource management (Rohman & Febriana, 2025). Most notably, this study contributes a significant extension of theoretical frameworks by moving beyond the linear models employed in previous research. Through simultaneous analysis and a higher degree of explained variance, the present study provides robust empirical evidence supporting an integrated model wherein motivation and workload operate as interdependent, complementary determinants of performance rather than as independent or additive factors (Ashkanani et al., 2022; Iddekinge et al., 2017). This integrative perspective enhances theoretical sophistication while offering a stronger empirical foundation for practical human resource interventions within healthcare environments

The findings of this study validate and extend existing theories on the relationships between motivation, workload, and performance within Indonesian healthcare contexts. The strong combined effects of these variables substantiate systems-thinking approaches to performance management, emphasizing that multiple interacting factors must be addressed simultaneously to sustain optimal outcomes (Aran & Suhardi, 2024; Vu et al., 2025). The positive workload coefficient notably challenges the traditional assumption that heavier workloads necessarily undermine performance. Instead, it supports the concept of optimal challenge, wherein moderate workload levels can enhance engagement and productivity—consistent with the Yerkes-Dodson arousal theory and the Job Demands-Resources (JD-R) mode l(Bakker & Demerouti, 2007). These theoretical integrations suggest that performance improvement in nursing is best achieved through balanced interactions among psychological motivation, individual capability, and structural task demands.

From a practical standpoint, several implications emerge for hospital management. First, balanced workload distribution should be prioritized by implementing evidence-based nurse-to-patient ratios, regularly monitoring workload indices, redistributing tasks during peak demand periods, and expanding the workforce where sustained imbalances persist (Seridon, 2025). Second, comprehensive motivational programs are essential, encompassing transparent recognition systems, competitive compensation aligned with both performance and market standards, structured professional development pathways, participatory decision-making opportunities, and equitable career advancement mechanisms (Figueiredo et al., 2025). Third, resource adequacy must be addressed through capital investments in modern equipment, digital information systems, adequate consumable supplies, and administrative support to reduce non-nursing burdens. Fourth, the establishment of continuous performance-monitoring systems is critical for tracking trends in motivation, workload, and overall output, enabling early intervention before performance deterioration occurs. Finally, leadership development should be institutionalized to cultivate supervisors skilled in motivational leadership, workload management, and supportive communication, thereby creating psychologically safe and empowering work environments (Amoadu et al., 2024; Peter et al., 2024).

At the policy level, healthcare regulators are encouraged to adopt evidence-based staffing standards, mandate regular workload assessments, and incentivize workplace-quality improvement initiatives while strengthening welfare programs that safeguard nurse sustainability. Regarding the nursing profession, individual nurses should adopt proactive self-care strategies, advocate for reasonable working conditions, pursue continuous professional education, and actively engage in institutional improvement initiatives that enhance both personal well-being and organizational quality (Cohen et al., 2023).

Despite the strength and significance of its findings, this study acknowledges several limitations that should inform the interpretation of its results and guide future investigations. The sample size—comprising 39 nurses from a single private hospital—limits generalizability to broader populations, including larger public institutions or hospitals across diverse regions. Future multi-site studies with larger samples would enhance external validity (Csipke et al., 2019). The cross-sectional research design captures data at only one point in time, preventing causal inference and temporal understanding of motivation and workload effects. Longitudinal designs tracking performance changes following specific interventions would yield stronger evidence of causality.

Potential self-report bias also warrants consideration, as perceptions captured via questionnaires may be influenced by social desirability, emotional states, or recall limitations. To mitigate this, future studies should incorporate objective performance metrics such as patient satisfaction indices, error rates, and care-quality indicators to triangulate findings (Dunsch et al., 2018; Khashe et al., 2023). Additionally, the measurement scope—though supported by validated instruments—may not fully encompass all relevant dimensions of nurse performance, including teamwork quality, innovation, and intrinsic professional calling. Expanding the construct domains in future models would strengthen explanatory power.

The 22.8% unexplained variance indicates the presence of other influential variables such as leadership style, organizational culture, compensation structure, and work-life balance that warrant inclusion in subsequent research frameworks. Moreover, the contextual specificity of the study—conducted at Setio Husodo Hospital in 2025—reflects post-pandemic recovery conditions and local management practices that may limit transferability to other settings (Dewi & Nazriati, 2024; Nogues & Tremblay, 2023). Replication across different institutional types and geographic regions would be valuable for testing generalizability.

While classical statistical assumptions were satisfied, the positive workload coefficient deserves nuanced interpretation. It may indicate that nurses experience performance benefits from manageable challenges, but it could also reflect measurement effects (e.g., high performers perceiving higher workload) or cultural factors, such as Indonesia's strong work-ethic orientation valuing diligence and productivity. Qualitative follow-up studies could clarify these interpretations. Finally, as this research employed a correlational design, it demonstrates significant associations but does not directly evaluate interventions. Experimental or quasi-experimental studies implementing targeted motivational and workload adjustments would provide more actionable evidence for practice and policy development. Despite these limitations, the present research offers valuable empirical support for integrated performance-management models and identifies critical intervention priorities for Setio Husodo Hospital and comparable healthcare institutions.

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CONFLICT OF INTERESTS

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