

The Effect of Supervision, Information Technology, Motivation, and Workload on Nurses' Performance at Surakarta Islamic Hospital

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ABSTRACT.

This study aims to determine and explain the influence of supervision, information technology, motivation, and workload on nurse performance at Surakarta Islamic Hospital. The population of this study was 59 nurses at Surakarta Islamic Hospital, with a total sampling method. Data collection was done using a questionnaire with a Likert scale. The data analysis technique used was multiple linear regression analysis. The results showed that supervision, information technology, motivation, and workload contributed 27.5% to nurse performance, while the remaining 72.5% was explained by other variables not examined in this study. The recommendation of this study is that Surakarta Islamic Hospital should develop a coaching-based supervision system, improve the implementation of information technology, integrate professional performance and Islamic values, and conduct regular surveys on workload.

Keywords: Nurse Performance, Supervision, Information Technology, Motivation, Workload

INTRODUCTION

Based on 2023 Ministry of Health data, during 2019-2023 the number of hospitals in Indonesia experienced an increase of 9.7%. In 2019 the number of hospitals was 2,877 increasing to 3,155 in 2023. The number of hospitals in Indonesia until 2023 consisted of 2,636 RSU (General Hospitals) and 519 RSK (Special Hospitals). In 2023, General Hospitals (RSU) managed by the central government were 242 (9.2%), local governments were 849 (32.2%), and the private sector was 1,545 (58.6%).

Based on this data, with the highest number, private hospitals certainly play a crucial role in healthcare services in Indonesia. One long-standing private hospital in Indonesia, specifically in Central Java, is the Surakarta Islamic Hospital (RSIS). Healthcare services at RSIS began on June 30, 1983, and in 2008, RSIS received a certificate of recognition for internationally recognized service quality standards from the International TEMOS (Telemedicine for the Mobile Society) Network.

With the internal conflict in 2011 and the construction of several new hospitals in Surakarta and Sukoharjo, RSIS faced significant challenges in competing and regaining its reputation as a leading hospital. Furthermore, the founders' mandate to preach with real deeds (*bilhal*) through the establishment of an Islamic-inspired hospital must also be upheld.

As a healthcare institution, hospitals are constantly challenged to make improvements in all aspects and to consistently improve the quality of healthcare

services. Many factors contribute to improving the quality of healthcare services in hospitals, including medical equipment and tools, and equally important are human resources. (Misbahuddin, 2020)

According to the Ministry of Health, nurses account for the largest number of human resources (HR) in healthcare across all hospitals in Indonesia in 2023, with 364,254 people. On the other hand, research by Singgih et al. (2023) shows that most nurses experience high levels of work stress, at 53.9%. This is in line with what Rhamdani and Wartono (2019) stated that according to the Indonesian National Nurses Association (PPNI), 50.9% of nurses in Indonesia experience work stress. The large number of nurses as healthcare workers in hospitals, coupled with the high potential for work stress in the nursing profession, can have counterproductive effects on healthcare services in hospitals.

According to Siahaan et al. (2021), the performance and quality of nursing services in a hospital significantly determine the quality of healthcare services and reflect the nurses' performance. The appropriateness of nurse performance can be influenced by the hospital's systems. Simanjuntak and Murtiningsih (2025) argue that with proper supervision, nurses are expected to understand the importance of complete documentation and improve compliance with applicable standard operating procedures (SOPs).

Meanwhile, according to Syafri et al. (2022), a management information system, as a basis and tool for information circulation and decision-making, is crucial, particularly in improving the quality of hospital services. Integrated and customized information tailored to hospital needs not only simplifies service processes and operational procedures for all hospital activities, but also contributes to decision-making for hospital development and advancement.

Nurses in hospitals have numerous duties and responsibilities assigned by the hospital itself, which can create a significant workload due to the sheer number of tasks and pressures involved. This workload ultimately puts pressure on nurses, impacting their performance (Hakman et al., 2020).

According to Basalamah et al. (2021), work motivation plays a significant role in driving nurses' effectiveness. Meanwhile, according to Semachew (2018), the nursing process encompasses five steps: assessment, diagnosis, planning, implementation, and evaluation.

RESEARCH METHODS

This study uses a quantitative approach with an associative analysis method and a cross-sectional study design. Data analysis is quantitative/statistical in nature with the aim of testing the established hypothesis. The philosophy of positivism views reality/symptoms/phenomena as classifiable, relatively fixed, concrete, observable, measurable and the relationship between symptoms is causal. This study was conducted at the Surakarta Islamic Hospital located at Jl. A. Yani, Banaran, Pabelan, Kartasura District, Sukoharjo Regency, Central Java 57169. The study period was 6 months. The population in this study were 59 nurses at the Surakarta Islamic

Hospital. Considering the small population, this study used saturated sampling, so the number of samples was 59 nurses. The sampling technique used in this study was Total Sampling or Exhaustive sampling (saturated/census sampling).

The types of data used are primary and secondary data. In this study, primary data was obtained directly from respondents in the form of questionnaires, while secondary data was obtained from various sources such as books, research journals, and articles. Data collection in this study was carried out through observation, documentation, questionnaires, interviews, and literature studies. The data obtained were then processed using multiple linear regression analysis tools with the help of SPSS 25.

RESULTS AND DISCUSSION

Multiple Linear Regression Test

Table 1 Linear Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7,121	4,011		1,775	,082
	X1	-,266	,270	-,159	-,982	,330
	X2	,596	,240	,452	2,485	,016
	X3	,313	,292	,217	1,072	,289
	X4	,134	,121	,125	1,103	,275

a. Dependent Variable: Y

From these results, the regression equation is obtained:

$$Y = 7.12 - 0.27X_1 + 0.60X_2 + 0.31X_3 + 0.13X_4 + \varepsilon$$

Information:

Y = Nurse Performance

X₁ = Supervision

X₂ = Information Technology

X₃ = Motivation

X₄ = Workload

ε = error (other factors outside the model)

Because the normality assumption was not met, bootstrapping was necessary to retest the stability of the linear regression coefficients. Therefore, the explanation of the direction of the relationship based on the regression model structure will be discussed based on the significance results of the bootstrapping method along with hypothesis testing. The presence of an error component (ε) in the equation indicates the presence of other variables outside the research model that also influence Nurse Performance, such as competence and work experience, work environment, and organizational culture.

Model Feasibility Test (F Test)

Table 2. Model Testing Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89,400	4	22,350	6,513	<,001b
	Residual	185,311	54	3,432		
	Total	274,712	58			

a. Dependent Variable: Y

b. Predictors: (Constant), X4, X1, X2, X3

From the results of the model feasibility test, it is known that the significance is <0.001, so the regression model is simultaneously significant. And the F count > F table is 6.513 > 2.542, meaning that H0 is rejected and Ha is accepted. In other words, there is an intermediate influence Supervision, Information Technology, Motivation, and Workload on Nurse Performance at Surakarta Islamic Hospital and meets the model feasibility test.

Hypothesis Testing

Based on data processing, the results of the hypothesis test using the bootstrap method were as follows;

Table 3. Hypothesis Testing Results

Model	B	Bias	Std. Error	Bootstrap		
				Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
1 (Constant)	7,121	,541	3,598	,017	2,777	16,619
X1 (Supervision)	-,266	-,008	,257	,220	-,788	,184
X2 (Information Technology)	,596	-,065	,288	,011	-,339	,860
X3 (Motivation)	,313	,053	,286	,163	-,080	1,112
X4 (Workload)	,134	-,020	,097	,166	-,098	,295

a. Constant

Because the significance value of 0.017 < 0.05 (below 0.05), the constant is significant. This means that when X1, X2, X3, and X4 are 0, the estimated value of Y is 7.121. The model has a meaningful baseline.

b. X1 (Supervision)

Because the significance value of 0.220 > 0.05 (above 0.05), H0 is accepted (not significant). X1 has a negative effect on Y, but the effect is not statistically

significant. This means that changes in X1 have not been proven to conclusively affect Y.

c. X2 (Information Technology)

Because the significance value of $0.011 < 0.05$ (below 0.05), H_0 is rejected (significant). This means that X2 has a positive and significant effect on Y. Every 1 unit increase in X2 increases Y by 0.596 units. X2 is the most dominant variable in the model.

The positive and largest coefficient value compared to other variables indicates that Information Technology is the most dominant factor in improving Nurse Performance. Utilizing a good information system can speed up work processes, improve record-keeping accuracy, and reduce the administrative burden on nurses, thereby significantly improving performance.

These results are in line with the conditions of modern health services which demand the use of technology to support the effectiveness and efficiency of nurses' work.

d. X3 (Motivation)

Because the significance value of $0.163 > 0.05$ (above 0.05), H_0 is accepted (not significant). X3 has a positive effect on Y, but the effect is not statistically significant. This means that changes in X3 have not been proven to conclusively affect Y.

e. X4 (Workload)

Because the significance value of $0.166 > 0.05$ (above 0.05), H_0 is accepted (not significant). X4 has a positive influence on Y, but the effect is not statistically significant. This means that changes in X4 have not been proven to conclusively affect Y.

Coefficient of Determination Test (R²)

Table 4. Results of the Determination Coefficient Test

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	,570a	,325	,275	1.85248

a. Predictors: (Constant), X4, X1, X2, X3

Based on the calculation results, the adjusted R square value was 0.275. This means that the variables of Supervision, Information Technology, Motivation, and Workload contributed 27.5% to Nurse Performance at Surakarta Islamic Hospital, while the remaining 72.5% was explained by other variables not included in this study.

Discussion

1. The Influence of Supervision on Nurse Performance at Surakarta Islamic Hospital

The results of the study showed that supervision had a negative coefficient (-0.266) and was not significant (Sig. $0.220 > 0.05$). This means that statistically,

supervision has not been proven to influence nurse performance at Surakarta Islamic Hospital.

The results of this study differ from those of Andoko and Putri (2020) and Simanjuntak and Murtiningsih (2025), which found that supervision influences nurse performance.

The ineffectiveness of supervision may indicate that the existing oversight system is not functioning effectively or is not perceived as a driving factor for improved performance. Supervision may still be administrative in nature and not address aspects of coaching, development, or clinical competency development.

In addition, in professional healthcare organizations, medical and paramedical personnel tend to work based on standard operating procedures (SOPs) and professional ethics, so that the existence of formal supervision does not directly affect their work output.

2. The Influence of Information Technology on Nurse Performance at Surakarta Islamic Hospital

The Information Technology variable showed a positive and significant influence ($B = 0.596$; $\text{Sig. } 0.011 < 0.05$). This means that the better the utilization of information technology, the better the performance of nurses at Surakarta Islamic Hospital. In the context of modern hospitals, information technology plays a strategic role, such as the Electronic Medical Record system (EMRS), the Hospital Management Information System (SIMRS), and the integration of laboratory, pharmacy, and administrative services.

The results of this study align with those of Wulur et al. (2023); Pane et al. (2023), which stated that management information systems in healthcare services influence the integration of all hospital service processes and can improve the quality of healthcare services.

Integrated technology can accelerate patient care, reduce administrative errors, improve data accuracy, and expedite clinical decision-making. These findings demonstrate that investment in health information systems is a key factor in improving the efficiency and quality of hospital services. This is in line with the concept of hospital digital transformation which is the focus of many hospitals and advanced services.

3. The Influence of Motivation on Nurse Performance at Surakarta Islamic Hospital

Motivation has a positive coefficient (0.313), but it is not significant ($\text{Sig. } 0.163 > 0.05$). This indicates that although motivation theoretically plays a role in improving performance, in this study its influence was not statistically strong enough.

In the hospital context, employee motivation is often influenced by intrinsic factors such as professional responsibility, humanitarian values, and service ethics. If respondents' motivation levels are relatively homogeneous (equally high), then the variation is small and therefore not statistically significant.

The results of this study are inconsistent with research conducted by Layli et al (2023); Nurmala et al (2024), which stated that work motivation has a positive and significant influence on employee performance among nurses in hospitals.

In public service organizations or hospitals based on religious values, a collective culture that emphasizes shared values exists, making individual motivation less measurable. In the context of Surakarta Islamic Hospital, which emphasizes Islamic values in its services, an Islamic work environment emphasizing spiritual values can also motivate nurses to optimize their performance.

4. The Influence of Workload on Nurse Performance at Surakarta Islamic Hospital

Workload has a positive coefficient (0.134) but is not significant (Sig. 0.166 > 0.05). This means that increasing workload does not directly affect performance.

The results of this study are inconsistent with those of Astuti and Lesmana (2018), who stated that motivation and workload have a positive and significant impact on hospital performance. They also contradict those of Norawati et al. (2022), who found that compensation and workload significantly influence the performance of civil servant medical staff in hospitals.

In a hospital setting, workloads often fluctuate depending on the number of patients and the condition of the patients. However, healthcare workers are generally accustomed to working under high pressure and have professional standards that require optimal service delivery despite increased workloads. This may explain why workload has not been statistically shown to significantly impact performance.

Simultaneously, the regression model (F-test) shows that the variables of Supervision, Information Technology, Motivation, and Workload jointly influence Nurse Performance. Nurse performance at Surakarta Islamic Hospital is not the result of a single factor, but rather a combination of several managerial and operational dimensions. Meanwhile, information technology plays a central role. This indicates that performance improvement strategies must be holistic, not focused on just one dimension but rather strengthening all elements in an integrated manner.

CONCLUSION AND SUGGESTIONS

Based on the results of research on the Influence of Supervision, Information Technology, Motivation, and Workload on Nurse Performance at Surakarta Islamic Hospital, it can be concluded that Supervision, Motivation, and Workload do not significantly influence nurse performance at Surakarta Islamic Hospital. Information technology has a positive and significant influence on nurse performance at Surakarta Islamic Hospital. Based on the research results, the following suggestions can be put forward: Hospitals as health service facilities should pay attention to various factors that can affect the quality of service, including nurse performance. Surakarta Islamic Hospital should develop a coaching-based supervision system that is nurturing and aimed at fostering competence and professionalism. Improving the implementation

of information technology can be done through additional investment in technology and training for employees.

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