



Work Stress and Its Association with Employee Performance: Evidence from the North Sumatra Provincial Health Office

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INTRODUCTION

Work-related stress is a psychological response that arises when occupational demands exceed an individual's capacity to cope, often resulting in physical, emotional, and cognitive strain (Lawn et al., 2020). In public sector institutions such as health departments, employees are frequently exposed to intense pressure stemming from administrative complexity, the urgency of policy implementation, and the demands of public accountability (Boin et al., 2020). Within this context, employee performance, defined as the degree to which individuals execute their responsibilities with precision, efficiency, and accountability, emerges a pivotal factor in determining organizational effectiveness (Muthoni Nduati & Wanyoike, 2021).

Work stress refers to a state of emotional and psychological tension arising from an imbalance between job demands and an individual's coping capacity (Karim, 2022). Cross-national studies have shown that occupational stress significantly contributes to organizational

inefficiencies (Kim & Jung, 2022). According to the Health and Safety Executive (2023), approximately 776,000 workers in Great Britain experienced work-related stress, depression, or anxiety in 2023/2024, resulting in the loss of 16.4 million working days. These conditions accounted for nearly half of all reported cases of work-related ill health, highlighting the profound impact of psychological stressors in contemporary workplaces. Recent findings from Staffing Industry Analysts (2024), indicate that several Southeast Asian countries report notably high daily levels of work-related stress. Myanmar ranked highest, with 48% of workers experiencing daily stress, followed by the Philippines (46%), Singapore (38%), and Cambodia (38%). In contrast, Indonesia recorded the lowest daily stress levels in the region, with only 16% of workers affected. This figure suggest that workplaces across Southeast Asian face substantial challenges in promoting employee well-being, with implications for both productivity and mental health.

Asaloei et al., (2020) highlight that job stress has emerged as one of the primary challenges in the contemporary workplace, particularly within the education and public service sectors. Multiple studies (Le et al., 2024; Muis et al., 2021; Siegel et al., 2022) affirm that work-related stress plays a significant role in shaping employee performance. Research conducted in Indonesia indicates that the simultaneous presence of dual role conflict and occupational stress substantially contributes to diminished performance among female employees in the banking sector. Parallel findings from Vietnam reveal a negative correlation between work-related stress and work quality, with work-life balance and peer support serving as protective factors that mitigate adverse effects. Additionally, a cross-national meta-analysis demonstrates that electronic monitoring in the workplace can heighten stress levels and undermine job satisfaction, without yielding measurable improvements in performance, and may even foster counterproductive behaviors. Collectively, these studies underscore that work-related stress, whether driven by role strain, psychosocial pressures, or organizational surveillance, constitutes a critical factor that can impair employee performance and organizational productivity if left unaddressed. According to Saleem et al., (2021), occupational stress is now recognized as a leading contributor to reduced productivity and deteriorating mental health, particularly in high-pressure environments. The imbalance between professional demands and individual coping capacity often results in psychological strain, emotional exhaustion, and declining job satisfaction. As job expectations intensify, especially in sectors subject to rigorous performance scrutiny, employees may experience chronic stress, which directly impacts both organizational outcomes and personal well-being (Priya et al., 2023). These global and regional trends are equally pertinent to Indonesian public

institutions, where employees face escalating responsibilities and systemic constraints that may hinder performance.

As the Health Department of North Sumatra Province continues to play a central role in implementing national and regional health initiatives, sustaining optimal employee performance amid increasing workloads and systemic pressures has become a pressing concern. Understanding the impact of work-related stress on employee performance is therefore essential for designing strategic interventions that strengthen public sector resilience and improve the quality of service delivery. Accordingly, this study aims to examine the relationship between work-related stress and employee performance within the Health Department of North Sumatra Province. Specifically, it investigates how key stress-related factors—namely task demands, role expectations, organizational structure, and leadership practices—correlate with performance outcomes among public health personnel. By identifying the extent and nature of these associations, the study seeks to generate empirical evidence that can inform managerial decision-making, support organizational reforms, and guide policy development aimed at enhancing employee well-being and institutional effectiveness. The findings are expected to offer a strategic foundation for improving workforce performance in the public sector, particularly in response to the growing demands placed on health departments during periods of systemic and societal change.

METHODS

This study employed a quantitative approach with a cross-sectional design to analyze the relationship between work-related stress and employee performance at the Health Department of North Sumatra Province in 2025. The cross-sectional design was chosen to capture and examine the interaction between independent and dependent variables at a single point in time. The research was conducted over a six-month period, from January to May 2025, and involved several stages: administrative preparation, instrument validation, data collection, data analysis, and report writing. Instrument validation was carried out with 30 respondents from Medan City Health Office, and the instrument was declared valid. The target population consisted of all employees in the Department of Health, totalling 300 civil servants who met the inclusion criteria. A total sampling technique was applied, allowing all eligible staff members to participate in the study.

Data were collected using a validated structured questionnaire that assessed four dimensions of work-related stress; task demands, role demands, organizational structure, and leadership, as well as one dependent variable, employee performance. Each dimension was

measured using a five-item Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5). Data analysis was conducted using univariate, bivariate, and multivariate techniques. Univariate analysis described the frequency distribution of each variable while bivariate analysis employed the Chi-Square test to examine associations at a 5% significance level. Variables with a $p\text{-value} \leq 0.05$ were included in the multivariate analysis, which utilized binary logistic regression to identify dominant predictors of performance. All data processing procedures, including editing, coding, entry, and cleaning, were performed using statistical software to ensure accuracy and consistency.

RESULTS

Table 1. Cross Tabulation of Relationship between Job Stress and Employee Performance

Task Demands	Employee Performance				Total		<i>p-value</i>	OR (95% CI)
	Not Good		Good					
	n	%	n	%	n	%		
Not Good	83	27.7	69	23	152	50.7	0.049	0.633(0.402–0.999)
Good	64	21.3	84	28	148	49.3		
Total	147	49	153	51	300	100		

Role Demands	Employee Performance				Total			
	Not Good		Good					
	n	%	n	%	n	%		
Not Good	79	26.3	68	22.7	147	49	0.107	0.689(0.437–1.085)
Good	68	22.7	85	28.3	153	51		
Total	147	49	153	51	300	100		

Organizational Structure	Employee Performance				Total			
	Not Good		Good					
	n	%	n	%	n	%		
Not Good	59	19.7	92	30.7	151	50.3	0.001	2.250(1.417–3.571)
Good	88	29.3	61	20.3	149	49.7		
Total	147	49	153	51	300	100		

Leadership	Employee Performance				Total			
	Not Good		Good					
	n	%	n	%	n	%		
Not Good	61	20.3	96	32	157	52.3	0.000	2.374(1.493–3.775)
Good	86	28.7	57	19	143	47.7		
Total	147	49	153	51	300	100		

The chi-square test showed a significant relationship between task demands and employee performance ($p = 0.049$). With the odds ratio calculation oriented toward the outcome “poor performance,” the ‘Good’ category for task demands had an odds ratio of 0.633 (95% CI: 0.402–0.999) compared to the “Not Good” category, indicating a 36.7% reduction in the odds of experiencing poor performance. Conversely, role demands were not significantly associated with performance ($p = 0.107$; OR = 0.689; 95% CI: 0.437–1.085). Interestingly, organizational structure ($p = 0.001$; OR = 2.250; 95% CI: 1.417–3.571) and leadership ($p <$

0.001; OR = 2.374; 95% CI: 1.493–3.775) showed higher odds of poor performance in the category labelled “Good” compared to “Not Good.” These contrary findings indicate the possibility of issues with the coding/naming of categories for these two variables; therefore, audit data is needed to ensure consistency in labelling before drawing further substantive implications.

Table 2. Selection of Variables that are Candidate Models in the Logistic Regression Test Based on Bivariate Analysis

Variable	<i>p-value</i>	Description
Task Demands	0.049	Candidate
Role Demands	0.107	Candidate
Organizational Structure	0.001	Candidate
Leadership	0.000	Candidate

Based on Table 2, it is known that the variables that are candidates for logistic regression tests are the income variables Task Demands, Role Demands, Organizational Structure, and Organizational Leadership.

Table 3 Logistic Regression Modeling First Modeling

Variabel	B	Sig.	Exp(B)	95% CI
Task Demands	-0.370	0.129	0.691	0.428-1.114
Role Demands	-0.298	0.221	0.742	0.460-1.197
Organizational Structure	0.835	0.001	2.305	1.428-3.721
Leadership	0.876	0.000	2.400	1.486-3.877

Based on Table 3, it shows that there are 2 (two) variables that have a sig value > 0.05 in the first stage, so the Task Demands and Role Demands variables are removed from the model because they have sig. >0,05. The following conclusions are drawn from the model:

Table 4 Logistic Regression Modeling Second Modeling (Final)

Variabel	B	Sig.	Exp(B)	95% CI
Organizational Structure	0.852	0.000	2.345	1.458-3.773
Leadership	0.904	0.000	2.470	1.535-3.975

Since there are no more variables with p value > 0.05 left, the second model is the last step. Based on Table 4.9, there are 2 variables that affect employee performance at the Health Office of North Sumatra Province, namely Organizational Structure and Organizational Leadership. Based on logistic regression analysis, the most dominant variable affecting employee performance in the North Sumatra Provincial Health Office with an Exp(B) value of 2.470 (p=0.000; 95% CI=1.535-3.975), meaning that the organizational leadership variable has the greatest influence on herbal employee performance, namely 2.4 times.

DISCUSSION

The Influence of Organizational Structure on Employee Performance

An effective organizational structure is characterized by a clear division of tasks, appropriately distributed authority, and well-established channels for communication and

coordination channels between units and employees (Aspizain, 2024). Such a structure fosters an organized work environment, clarifies role expectations, and reduces role conflicts that may otherwise contribute to workplace stress (Xue et al., 2022). Consequently, a well-designed organizational structure plays a vital role in enhancing employee productivity, accountability, and operational efficiency.

The results of this study indicate that organizational structure has a significant relationship with employee performance, both in bivariate analysis ($p = 0.001$; $OR = 2.250$; $95\% CI = 1.417-3.571$) and multivariate analysis ($p = 0.000$; $Exp(B) = 2.345$; $95\% CI = 1.458-3.773$). This indicates that employees working in a well-defined and clear organizational structure are 2.3 times more likely to demonstrate good performance compared to those working in a less well-defined organizational structure.

Several studies have demonstrated that organizational structural transformation significantly influences employee performance, with a reported Pearson coefficient of 0.937 and an R Squared of 87.8%, indicating a substantial positive effect (Hulu et al., 2025). Siagian and Sihombing (2022) similarly found that organizational structure has a positive and significant impact on performance with variables such as departmentalization, delegation of authority, and responsibility contributing meaningfully to performance enhancement. Aziz and Islam, (2025) further emphasize the importance of effective organizational structure and design in improving employee outcomes. Key principles of organizational design, including specialization, coordination, control, and innovation, are identified as critical factors in optimizing employee performance.

Field findings indicate that the division of tasks among employees remains uneven and insufficiently defined. Some staff members lack a full understanding of work processes, necessitating ongoing supervision. The delegation of authority from superiors is also suboptimal, leading certain employees to feel constrained in their decision-making. Additionally, the internal bureaucratic system is perceived by some as rigid and burdensome, contributing to administrative overload without directly enhancing productivity. These structural issues have a measurable impact on employee performance: individuals who perceive their organizational structure as supportive tend to exhibit higher levels of punctuality, work effectiveness, and autonomy, whereas those who view the structure as unsupportive often demonstrate stagnant or declining performance, particularly in terms of work quality and initiative.

Given the substantial influence of organizational structure on employee performance, public institutions, particularly health departments, should prioritize structural reform as a core

component of performance optimization strategies. Policymakers are encouraged to review and redesign organizational frameworks to ensure clear job descriptions, equitable task distribution, and effective delegation of authority. Establishing adaptive and responsive bureaucratic systems can help reduce procedural bottlenecks and empower employees to operate with greater autonomy and accountability. In addition, leadership development programs should be implemented to equip supervisors with skills in task delegation and effective communication. Strengthening coordination mechanisms and minimizing internal administrative burdens can enhance employee motivation, alleviate stress, and ultimately improve public service outcomes. Periodic institutional audits focused on structural clarity and operational efficiency should be conducted to identify and address organizational gaps that hinder productivity. By embedding flexibility and transparency into structural policies, public agencies can cultivate a healthier work environment and sustain long-term improvements in employee performance.

The Influence of Organizational Leadership on Employee Performance

Organizational leadership is not just about position, but about the ability to build trust, lead teams, and inspire others to achieve common goals (Semenets-Orlova et al., 2021). In the context of public organizations such as health departments, good leadership greatly influences the quality of service and bureaucratic accountability (Hidayat, 2023). Visionary, adaptive, and humanistic leadership is the key to the success of modern organizations.

The results of the study indicate that organizational leadership has a significant relationship with employee performance, both in bivariate and multivariate tests. In the bivariate analysis, the p-value was 0.000 and the OR was 2.456 (95% CI: 1.569–3.842), while in the multivariate analysis, the value of $\text{Exp}(B) = 2.470$, meaning that employees who perceive good leadership are 2.47 times more likely to demonstrate good performance compared to those who do not perceive effective leadership.

Research by Puspita and Putra (2023), shows that effective leadership and a positive organizational culture have a significant effect on employee performance. Additionally, Anna Marina, (2025), research indicates that leadership style influences employee performance with a significance level of $(0.016 < 0.05)$. The conclusion of this study is that leadership style influences employee performance at Bank Perkreditan Rakyat Dana Prima Mandiri with a significance level of $(0.001 < 0.05)$.

Field findings from limited interviews and questionnaire data indicate that employees are more motivated when leaders consistently offer appreciation and positive feedback. Several respondents noted that authoritarian or overly bureaucratic leadership styles tend to diminish initiative and autonomy, whereas communicative and open leadership fosters a sense of

ownership and strengthens teamwork. Effective leadership is not only instrumental in guiding organizational direction but also serves as a critical factor in shaping employee behavior, motivation, and performance outcomes. Accordingly, enhancing managerial capacity and implementing leadership development programs for structural officials within the Health Department are essential steps toward improving overall performance and the quality of public service delivery.

Given the strong association between organizational leadership and employee performance, it is imperative for public institutions, particularly health departments, to invest in systematic leadership development. Policymakers should prioritize the implementation of capacity-building programs that promote transformational, communicative, and participatory leadership styles among structural officials. Institutional policies must support mechanisms for ongoing leadership training, performance-based assessment, and feedback systems that recognize and reward positive leadership behaviors. In addition, revising bureaucratic norms to encourage greater flexibility and innovation in leadership practices can help cultivate a more responsive and motivated workforce. Creating an environment in which leaders serve not only as administrative supervisors but also as mentors and facilitators of growth can significantly enhance job satisfaction, initiative, and overall organizational performance. Integrating these reforms into health governance frameworks will contribute to improved service quality, strengthened accountability, and greater institutional resilience.

CONCLUSIONS

This study demonstrates a significant relationship between work-related stress and employee performance, particularly through the dimensions of organizational structure and leadership. Employees operating within a clear organizational framework and receiving communicative, supportive leadership tend to exhibit stronger performance outcomes. In contrast, excessive task pressure and rigid bureaucratic systems can impede performance. Logistic regression analysis reveals that organizational leadership is the most dominant factor influencing employee performance at the North Sumatra Provincial Health Office, followed by organizational structure. These findings highlight the critical need for managerial reform and leadership capacity building to foster a healthier, more productive, and adaptable work environment amid rising demands in the public service sector.

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