

Exploring Non-Physical Work Environments and Performance: A Case Study of PPNPN Government Employees in Aviation Education

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ABSTRACT

This research investigates the impact of non-physical working environments on the performance of Non-Civil Servant government employees at the Aviation Education. Utilizing both t-test and F-test analyses, the study reveals significant findings. The t-test results indicate a calculated t-value of 8.020 with $\text{Sig} < \alpha$ ($0.029 < 0.05$), demonstrating the significance of coefficient β_2 . At a 95% confidence level, df ($n - k = 50 - 2$) = 48, where the t-table value is 1.677, suggesting a partially significant effect of the Non-Physical Work Environment variable on employee performance. Moreover, the F-test results show $\text{Sig} < \alpha$ ($0.000 < 0.05$), confirming the significance of coefficient β . With an F-count of 64.313 and utilizing a 95% confidence level, $df_1 = 1$ and $df_2 = 48$, the F-table value is 4.04, indicating a simultaneous significant effect of the Non-Physical Work Environment variable on employee performance. These findings underscore the crucial role of non-physical working environments in enhancing the performance of Non-Civil Servant Government Employees (PPNPN) at the Aviation Education.

INTRODUCTION

The success of any organization hinges upon the collaboration between its leaders and employees (Hallo & Wahyanti, 2022). This symbiotic relationship fosters an environment of mutual support and cooperation necessary for achieving organizational objectives (Sugiono et al., 2023). At Aviation Education, this collaboration is essential for creating a conducive non-physical work environment that instills a sense of security among employees, allowing them to perform optimally (Ariati et al., 2023; Pohan et al., 2022). A positive work environment significantly impacts employee emotions, fostering a sense of belonging and dedication to their tasks, ultimately leading to effective time utilization and improved productivity (Hakim et al., 2023).

Non-Civil Servant Government Employees (PPNPN) form an integral part of the workforce at Aviation Education, serving under various capacities within the Finance and General Section (Rahmawati & Pogo, 2023). Despite their diverse backgrounds and responsibilities as security personnel, cleaning staff, drivers, and house attendants, these employees contribute significantly to the institution's overarching goals (Hallo & Wahyanti, 2022). However, to harness their full potential, clear direction and support from the institution are paramount. Without effective guidance, the performance of these employees may falter, hindering the realization of organizational objectives (S.E. et al., 2019).

(Amilien et al., 2020.) research, which explored the positive influence of non-physical work environments on employee performance, the Aviation education, now known as Aviation Education, has yet to conduct any studies on the correlation between the non-physical work environment and the performance of Non-Civil Servant Government Employees (PPNPN). This knowledge gap leaves the institution without a clear understanding of how the work environment impacts employee performance (S.E. et al., 2019) (Nurwulandari & Irmawanti, 2023). To bridge this gap in research, the author embarked on a study titled "The Influence of the Non-Physical Work Environment on the Performance of Non-Civil Servant Government Employees (PPNPN) at Aviation Education (Toatubun & Novadjaja, 2018)."

LITERATURE REVIEW

This research endeavor seeks to shed light on the relationship between the non-physical work environment and the performance of PPNPN employees at Aviation Education (Manaf, 2023). By examining this dynamic, the study aims to provide valuable insights into how factors such as interpersonal relationships, leadership support, and overall work atmosphere affect employee performance (Ardita Indriya Mochtar & Rohmatiah, 2021). Through rigorous analysis and empirical investigation, the research endeavors to uncover whether a conducive non-physical work environment contributes to enhanced performance among PPNPN employees (Latupapua et al., 2023).

Ultimately, the findings of this study will not only contribute to the existing body of knowledge regarding organizational behavior and performance but also serve as a valuable resource for Aviation Education in optimizing its work environment to foster improved employee performance (Fadilah & Helmi, 2023) (Helia et al., 2022). By understanding the nuances of the non-physical work

environment and its impact on employee performance, Aviation Education can implement targeted strategies and initiatives to create a supportive and conducive workplace environment, thereby enhancing overall organizational effectiveness and productivity (Mutiarra et al., 2023).

METHODOLOGY

This study employs an explanatory survey method, aiming to elucidate the causal relationship between the variables under investigation through hypothesis testing (Rofiah & Burhan Bungin, 2024). The primary objective is to discern the correlation between the non-physical work environment and employee performance. Data collection for this research entails employing various methods, including observation, interviews, and questionnaires conducted through direct interaction with the sources, namely Non-Civil Servant Government Employees (PPNPN) at the Aviation Education. The Likert Scaling Method is utilized in this research, employing a scale ranging from 1 to 5. Scale one (1) represents the lowest value, while Scale five (5) signifies the highest value, facilitating the measurement of individuals' attitudes, opinions, and perceptions, herein referred to as research variables (Creswell & Clark, 2011) (Reyes-Fournier et al., 2020).

Table 1. Likert Scale

Score	Information
5	Strongly Agree (SS)
4	Agree (S)
3	Sukuku Agree (CS)
2	Disagree (IS)
1	Strongly Disagree (STS)

The questionnaire design used can be seen in table 2 below:

Table 2. Questionnaire Design

Theoretical Concepts	Variable	Indicator	Items
Non-Physical Work Environment	Non-Physical Work Environment (X)	1. Supervision 2. Work atmosphere 3. Providing Rewards 4. Treatment 5. Sense of security 6. Harmonious Relationship 7. Fair and Objective Treatment	X.1 X.2 X.3 X.4 X.5 X.6 X.7
Performance	Performance (Y)	1. Work quality 2. Work Quantity 3. Knowledge 4. Creativity 5. Cooperation 6. Can be trusted 7. Initiative 8. Personal Qualities	Y.1 Y.2 Y.3 Y.4 Y.5 Y.6 Y.7 Y.8

Source: Data processed by researchers (2024)

In research, it is essential to ensure that questionnaires undergo testing to adhere to the principles of validity and reliability, which are crucial for obtaining relevant and accurate results (Kuroda et al., 2022). This validation process is necessary to confirm that the questionnaire accurately measures what it intends to measure and produces consistent results over time (Kuroda et al., 2022). By assessing validity, researchers can ascertain whether the questionnaire effectively captures the constructs under investigation, while reliability testing ensures that the questionnaire yields consistent results when administered repeatedly.. Thus, through rigorous validation and reliability testing, researchers can enhance the credibility and trustworthiness of their study findings.

RESULTS AND DISCUSSION

1. Validity test

The validity test serves to determine whether the measuring instrument utilized for data collection accurately captures the phenomenon under study, typically by comparing the Pearson product moment correlation index with a significance value of 5% to the correlation value (Ardita Indriya Mochtar & Rohmatiah, 2021). The criteria for assessing the validity of the non-physical work environment are outlined in Table 3. This process enables researchers to ascertain the degree to which the instrument aligns with the construct being measured, providing insights into its effectiveness in accurately representing the intended concepts. Through such validation procedures, researchers can enhance the credibility and trustworthiness of their research findings, ensuring that the data collected accurately reflect the phenomenon under investigation.

Table 3. Non-Physical Work Environment Validity Test Results

Items	Pearson Correlation Coefficient	Probability (p)	Conclusion
Supervision is carried out routinely (X.1)	0.780	0	Valid
The work atmosphere is able to encourage employee enthusiasm (X.2)	0.698	0	Valid
Salary system according to regulations (X.3)	0.608	0	Valid
Treated well by superiors (X.4)	0.723	0	Valid
Safe from suspicion from fellow co-workers (X.5)	0.676	0	Valid
Relate well with colleagues and superiors (X.6)	0.753	0	Valid
Treated fairly and objectively by superiors and the organization (X.7)	0.630	0	Valid

Source: SPSS Results, Processed by Researchers (2023)

Based on Table 3, it can be seen from the results of the Pearson product moment correlation test that all indicators in the Non-Physical Work Environment variable (X) have valid results with 50 research respondents.

The performance validity test results criteria can be seen in Table 4 as follows:

Table 4. Performance Validity Test Results

Items	Pearson Correlation Coefficient	Probabilitas (p)	Conclusion
Carry out tasks according to established standards and procedures and on time (Y.1)	0.870	0	Valid
Achieving the given work targets (Y.2)	0.773	0	Valid
Have knowledge and be able to understand the work assigned (Y.3)	0.626	0	Valid
Helping colleagues when there are difficulties (Y.4)	0.682	0	Valid
Able to work with colleagues (Y.5)	0.828	0	Valid
Arrive and leave work on time (Y.6)	0.748	0	Valid
Take the initiative to work without being ordered (Y.7)	0.609	0	Valid
Be positive towards every job (Y.8)	0.548	0	Valid

Source: SPSS Results, Processed by Researchers (2023)

Based on Table 4, it can be seen from the results of the Pearson product moment correlation test that all indicators in the Performance variable (Y) have valid results with 50 research respondents.

2. Reliability Test

Reliability tests are employed to assess the consistency of measuring instruments when administered repeatedly (Sugiono et al., 2023). The reliability test, utilizing the Alpha Cronbach (α) technique, is presented in Table 1.4. This technique evaluates the internal consistency of the items within the instrument, providing insights into the extent to which the items consistently measure the same underlying construct (Pohan et al., 2022). By examining the reliability of the measuring instrument, researchers can gauge the extent to which it yields consistent results across different administrations, thereby ensuring the reliability of the data collected (Nasriwandi et al., 2021). Through rigorous reliability testing, researchers can enhance the robustness and trustworthiness of their research findings.

Table 5. Instrument Reliability Test Results

Variable	Number of Items	Cronbach's Alpha
Non-Physical Work Environment	7	0.820
Performance	8	0.864

Source: SPSS Results, Processed by Researchers (2023)

Based on Table 1.5, you can see the results of the reliability test for each variable with an α value ≥ 0.60 , which means it has high reliability and can be declared reliable

a. Description of Variable Characteristics

In this research, the evaluation of Non-Civil Servant Government Employees (PPNPN) at Aviation Education is depicted through scoring, aiming to offer insights into the quality of performance assessment for the variables examined in the study. The scoring ranges from 1, representing the lowest rating, to 5, indicative of the highest rating, based on responses from 50 participants. Consequently, an interval distance of 0.80 is derived, facilitating the categorization of performance assessments into distinct criteria. This method enables researchers to delineate and interpret the assessment outcomes effectively, aiding in the identification of areas for improvement and the formulation of targeted interventions. Through this scoring system, stakeholders can gain a comprehensive understanding of the performance levels of Non-Civil Servant Government Employees (PPNPN) at Aviation Education, thereby facilitating informed decision-making and organizational enhancement efforts.:

Table 6. Variable Characteristic Scores

Score	Information
1.00 - 1.80	Very low
1.81 - 2.61	Low
2.62 - 3.42	Currently
3.43 - 4.23	Tall
4.24 - 5.00	Very high

Variable characteristics can be described as follows:

1) Non-Physical Work Environment Variables

In this case, non-physical work environment variables are measured with 7 statement items. The statements used relate to indicators of supervision, work atmosphere, rewards, treatment, a sense of security, harmonious relationships and fair and objective treatment which are measured using a score of 1 to 5. The results of the respondents' assessments can be seen in Table 7 below:

Table 7. Results of Respondents' Assessment of Non-Physical Work Environments (X)

No	Statement	Answer Choices					Qty Resp	Qty. Score	Average
		STS	T.S	CS	S	SS			
1	Supervision is carried out routinely (X.1)	0	0	11	15	24	50	213	4.26
		0%	0%	22%	30%	48%	-		
2	The work atmosphere is able to	0	0	17	21	12	50	195	3.9
		0	0%	34%	42%	24%	-		

	encourage employee enthusiasm (X.2)								
3	Salary system according to regulations (X.3)	0	0	6	40	4	50	198	3.96
		0	0%	12%	80%	8%	-		
4	Treated well by superiors (X.4)	0	0	7	18	25	50	218	4.36
		0	0%	14%	36%	50%	-		
5	Safe from suspicion from fellow co-workers (X.5)	0	0	20	25	5	50	185	3.7
		0	0%	40%	50%	10%	-		
6	Have good relations with colleagues and superiors (X.6)	0	1	13	16	20	50	205	4.1
		0	2%	26%	32%	40%	-		
7	Treated fairly and objectively by superiors and the organization (X.7)	0	0	10	25	15	50	205	4.1
		0	0%	20%	50%	30%	-		
Amount		0	1	84	160	105		1419	4.05

Source: Data processed by researchers (2023)

Based on Table 7, we can see that the assessment given by respondents to the monitoring statement item is carried out routinely (X.1), 11 respondents or 22% stated that they quite agree, 15 respondents or 30% stated that they agree, 24 respondents or 48% stated that strongly agree and the average rating of 4.26 is very high.

For the assessment given by respondents on the statement that the working atmosphere is able to encourage employee morale (X.2), 17 respondents or 34% said they quite agree, 21 respondents or 42% said they agree, 12 respondents or 24% said they strongly agree and average -The average rating of 3.90 is high.

For the assessment given by respondents to the statement on the salary system according to regulations (X.3), 6 respondents or 12% stated that they quite agree, 40 respondents or 80% stated that they agree, 4 respondents or 8% stated that they strongly agree and on average The average rating of 3.96 is high.

For the assessment given by respondents on the statement item that they were treated well by their superiors (X.4), 7 respondents or 14% said they quite agree, 18 respondents or 36% said they agree, 25 respondents or 50% said they strongly agree and on average The average rating of 4.36 is very high.

For the assessment given by respondents on the statement item safe from suspicion from fellow colleagues (X.5), 20 respondents or 40% said they quite agree, 25 respondents or 50% said they agree, 5 respondents or 10% said they strongly agree and the average an assessment of 3.70 is high.

For the assessment given by respondents on the statement item of having good relationships with colleagues and superiors (X.6), 1 respondent or 2% stated Disagree, 13 respondents or 26% stated Quite Agree, 16 respondents or 32% stated Agree, 20 respondents or 40% stated that they Strongly Agree and the average rating of 4.10 was very high.

Then the assessment given by respondents to the statement item was that they were treated fairly and objectively by superiors and the organization (X.7) as many as 10 respondents or 20% stated Quite Agree, 25 respondents or 50% stated Agree, 15 respondents or 30% stated Strongly Agree and the average assessment of 4.10 is very high.

If you look at the average value for the Non-Physical Work Environment variable (X), it is 4.05, which is high. This means that the Non-Physical Work Environment indicators applied at the Aviation Education are good (high scores). This condition needs to be considered so that a conducive Non-Physical Work Environment can improve performance.

2) Performance Variables

The performance variable is measured using 8 statement items related to indicators of quality, quantity, knowledge, creativity, cooperation, trustworthiness, initiative and personal quality which are measured using a score of 1 to 5. The results of the respondents' assessments can be seen in Table 8 as follows:

Table 8. Results of Respondents' Assessment of Performance (Y)

No	Statement	Answer Choices					Qty Resp	Qty. Score	Average
		STS	T.S	CS	S	SS			
1	Carry out tasks according to established standards and procedures and on time (Y.1)	0	0	9	17	24	50	215	4.3
		0%	0%	18%	34%	48%	-		
2	Achieving the given work targets (Y.2)	0	0	7	23	20	50	213	4.26
		0%	0%	14%	46%	40%	-		
3	Have knowledge and be able to understand the work assigned (Y.3)	0	0	3	16	31	50	228	4.56
		0%	0%	6%	32%	62%	-		

4	Helping colleagues when there are difficulties (Y.4)	0	0	8	16	26	50	218	4.36
		0%	0%	16%	32%	52%	-		
5	Able to work with colleagues (Y.5)	0	0	8	21	21	50	213	4.26
		0%	0%	16%	42%	42%	-		
6	Arrive and leave work on time (Y.6)	0	0	9	18	23	50	214	4.28
		0%	0%	18%	36%	46%	-		
7	Take the initiative to work without being ordered (Y.7)	0	0	5	16	29	50	224	4.48
		0%	0%	10%	32%	58%			
8	Be positive towards every job (Y.8)	0	0	2	11	37	50	235	4.7
		0%	0%	4%	22%	74%	-		
Amount		0	0	51	138	211		1760	4.4

Source: Data processed by researchers (2023)

Based on Table 8, the average value for the performance variable (Y) is 4.4, including a very high score, so it can be concluded that the performance indicators applied at the Aviation Education are very good. This needs to be paid attention to and improved so that the performance of Non-Civil Servant Government Employees (PPNPN) continues to improve.

b. Statistic Test

1) T Test (First Hypothesis Testing Results)

The results of partial factor analysis t test processing using multiple linear regression models can be seen in Table 9 as follows:

Table 9 T Test Results (Coefficientsa)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10,754	3,071		3,502	,001
	LKNF-unit	,861	.107	,757	8,020	,000

a. Dependent Variable: performance

Source: Researcher SPSS Results (2023)

Based on Table 1.9, it is obtained that $\text{Sig} < \alpha$ ($0.029 < 0.05$) for the Non-Physical Work Environment variable so that the coefficient β_2 is significant. Apart from that, the tcount is 8.020 and by using a

confidence level of 95%, $df (n - k = 50 - 2) = 48$, it is known that t_{table} is 1.677. Because $t_{count} > t_{table} (8.020 > 1.677)$, it can be concluded that H_0 is rejected and H_1 is accepted. This shows that the Non-Physical Work Environment variable has a partially significant effect on the performance of Non-Civil Servant Government Employees (PPNPN) at the Aviation Education.

2) F Test (Second Hypothesis Testing Results)

The results of partial factor analysis F test processing using multiple linear regression models can be seen in Table 10 below:

Table 10. Coefficient of Determination Test Results (R²) Model
Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757a	.573	.564	2,622

a. Predictors: (Constant), LKNF-unit

b. Dependent Variable: performance

Source:

Researcher SPSS Results (2023)

Based on Table 10, it can be seen that the probability value (P) is 5% and the double correlation result or multiple R is 0.757, this shows that there is a medium category relationship between non-physical work environment variables and the performance of Non-Civil Servant Government Employees (PPNPN). And Adjusted R² (Adjusted R Square) of 56.40% shows that the percentage contribution of the influence of the Non-Physical Work Environment variable on the Performance of Non-Civil Servant Government Employees (PPNPN), while the remaining 43.60% is influenced by other variables not included in this research model. From the output above, the Adjusted R² (Adjusted R-Square) value is 0.564, which means that the influence of the non-physical work environment (X) on performance (Y) is 56.4% and is in the moderate category because it is more than 0.33 but more. low than 0.67. Next, analysis was carried out using the F test with the processing results in Table 1.11 as follows:

Table 11. F Test Results (ANOVAa)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	442,066	1	442,066	64,313	,000b
	Residual	329,934	48	6,874		
	Total	772,000	49			

a. Dependent Variable: performance

b. Predictors: (Constant) LKNF-unit

Source: Researcher SPSS Results (2023)

Based on table 11, it is known that $\text{Sig} < \alpha$ ($0.000 < 0.05$) is obtained so that the coefficient β is significant. Apart from that, an Fcount of 64,313 was obtained and by using a confidence level of 95%, $\text{df}_1 = 1$ and $\text{df}_2 = 48$, it was found that the Ftable was 4.04. Because $\text{Fcount} > \text{Ftable}$ ($64.313 > 4.04$) it can be concluded that H_0 is rejected and H_1 is accepted. This means that the compensation variable simultaneously has a significant effect on the performance of Non-Civil Servant Government Employees (PPNPN) at the Aviation Education

CONCLUSIONS

Based on the data analysis, this research examined how the work environment (excluding physical aspects) affects the job performance of government contract employees (PPNPN) at Aviation Education. The study revealed important information that can be used to improve employee performance at the organization. The key takeaways are that the work environment was perceived positively by the employees and that it has a positive influence on their performance. There is room for improvement, however, as other factors not considered in this study also play a role. Aviation Education can use this knowledge to implement strategies to create a more positive work environment, such as improved supervision, a more collaborative atmosphere, and investment in employee development.

ADVANCED RESEARCH

In writing this article the researcher realizes that there are still many shortcomings in terms of language, writing, and form of presentation considering the limited knowledge and abilities of the researchers themselves. Therefore, for the perfection of the article, the researcher expects constructive criticism and suggestions from various parties.

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