

The Impact of Work Environment, Information Technology, and Work Autonomy on Telework Adjustment of National Institute of Public Administration Employees during a Pandemic

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Abstract

This research aims to determine the impact of Work Environment, Information Technology, and Work Autonomy on Telework Adjustment of National Institute of Public Administration Employees during a Pandemic. The population of this research used the Slovin sampling technique in which the population were 120 people. This research uses primary data with data collection method through questionnaires distributed to 120 respondents. The analysis technique uses multiple linear regression and uses the Static Product and Service Solution (SPSS) program with the 26.0 version. Based on the results of the partial research, it was discovered that Work Environment has been a positive and significant impact on Telework Adjustment. Information Technology has a positive and significant impact on Telework Adjustment. Work Autonomy has a positive and significant impact on Telework Adjustment.

Keywords: Work Environment, Information Technology, Work Autonomy, Work Adjustment, Telework

INTRODUCTION

The World Health Organization (WHO) declared that the Coronavirus disease (Covid-19) was declared a global pandemic. In the first week of April 2020, approximately 4 billion people, half of the world's population were in lockdown (Sandford, 2020). The excitement was triggered by the large number of victims in a short time along with the anxiety of all parties facing the Covid-19 pandemic crisis. The Covid-19 pandemic crisis presents several unprecedented health, social and economic challenges for society, and has implications for the lives and work of people throughout the world.

After the first Covid-19 case in Indonesia was announced, President Joko Widodo appealed to everyone to stay at home (including civil servants) and work at home. President Joko Widodo also reminded the importance of practicing social distancing (Cahya, 2020). The government also formed a rapid response team led by the National Disaster Management Agency (BNPB) called the Covid-19 Management Task Force.

The Ministry of State Apparatus Empowerment and Bureaucratic Reform (MENPAN-RB) and the State Civil Service Agency (BKN) have an important role in implementing the work from home policy. According to 2019 data from the National Civil Service

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Agency (BKN), Indonesia has more than 4.28 million civil servants throughout the country. During the Covid-19 pandemic, the Ministry of State Apparatus Empowerment and Bureaucratic Reform (MENPAN-RB) issued Ministerial Circular Letter No. 19/2020 on March 16 2020. Regulating "Adjusting the Work System of State Civil Apparatus in Efforts to Prevent the Spread of Covid-19 in Government Agency Environment", including the work from home policy for civil servants.

Civil servants are required to stay at home and cannot leave the house except for urgent/important matters such as buying groceries or going to the hospital. They must report such activities to their immediate supervisor.

Several regions, such as the capital Jakarta and West Java Province, have implemented large-scale social restrictions (PSBB). Civil servants who violate policies are threatened with disciplinary sanctions. The work from home system is implemented according to the employee's location, the employee's health history, travel history in the last 14 days of the employee, and the employee's job description. Civil servants are also encouraged to use the Peduli Protect application provided by the Ministry of Communication and Information for health monitoring.

The Covid-19 pandemic has brought losses to many people, because workers and companies are faced with many questions and uncertainty. As a result of this virus, many people are affected in various ways. One of them is having to work from home which gives rise to various new problems such as stress which can be caused by the atmosphere of a new work space which can affect employees' adjustment to remote work.

Work autonomy can enable employees to be able to handle workloads efficiently and freely, so that employees can minimize conflict and pressure over new work patterns caused by the Covid-19 pandemic. This freedom is usually related to work procedures, work schedules, developing initiative, and participating in the decision-making process so that employees can adapt to remote work and balance personal and work life smoothly.

Remote work is not feasible for all workers. One reason is that around 60 to 70 percent of people in Indonesia work in the sector informal and their work requires continuous physical presence. As many as 80 percent of workers in Jabodetabek have jobs that cannot be done remotely. Employees who work remotely face challenges such as the need for socialization, unclear lines between leisure and work, lack of boundaries between work and personal life, and difficulty in maintaining effective communication and collaboration with superiors, coworkers, and others. manager.

Even though the Covid-19 vaccine is now widely available, remote work is still being carried out by most employees as the government encourages organizations to maintain remote work as much as possible and for an indefinite period. It seems that the Covid-19 event has changed the way we work, changed the manager/employee relationship, and reinforced the increasing role that information technology plays in work practices.

In the context of this pandemic, identifying and understanding what makes employees "adjust" best will help support the development of efficient, effective and humane remote working practices, during the Covid-19 crisis and post-lockdown period, but also for potential future epidemic crisis. Notably, epidemics due to Zoonotic Pathogens have occurred more frequently since the mid-1970s due to various factors (Willcox & Gulber, 2005).

Based on the background of the problem, the objectives of this research are as follows:

- 1) To find out and analyze whether the work environment influences the remote work adjustments of employees of state administrative institutions.
- 2) To find out and analyze whether Information Technology has an influence on the Remote Work Adjustments of State Administrative Institution Employees.
- 3) To find out and analyze whether Work Autonomy has an effect on the Remote Work Adjustments of State Administration Institution Employees.

RESEARCH METHOD

The type of data used is quantitative descriptive, which is used to analyze the relationship between variables. The data source used was questionnaire answers from several employees at the State Administration Institute. The object studied is Employee Remote Work Adjustments which are influenced by Work Environment factors, Information Technology, Work Autonomy for Employees of State Administration Institutions. Research plans and stages include data sources and types of data, population, samples, and data collection methods and tools.

Data sources consist of primary data obtained directly from State Administration Institution employees through questionnaires, and secondary data originating from literature, journals, books and articles related to the company profile which is the research subject and research variables. The population of this research is employees of the State Administration Institute who work at the head office of the State Administration Institute, Central Jakarta, totaling 240 people. Meanwhile, the sample taken was 120 employees using random sampling techniques.

The data collection method and tool used was distributing questionnaires to employees of State Administration Institutions. The questionnaire is structured based on statements consisting of 5 answer choices for each statement, and uses a Likert scale to quantify all answers.

In this research, the data analysis methods used include descriptive analysis and inferential analysis. Descriptive analysis is used to simplify and present data, as well as measuring the concentration and distribution of data to obtain a picture that is easier to understand. Meanwhile, inferential analysis is used to draw conclusions from some data and draw conclusions on the entire data studied. Apart from that, this research also uses multiple linear regression analysis to test the influence of more than one independent variable on the dependent variable. The regression equation model used is $Y = a + b_1X_1 + b_2X_2 + b_3X_3$, where Y is Remote Work Adjustment, a is a constant, b₁, b₂, and b₃ are regression coefficients, and X₁, Work Environment, Information Technology, and Work Autonomy.

Apart from analytical methods, this research also tested instruments in the form of validity and reliability tests. Validity tests are carried out to determine the accuracy of research measuring instruments regarding the actual content or meaning being measured, while reliability tests are carried out to measure the extent to which a measuring instrument is consistent or stable over time.

RESULTS AND DISCUSSION

Research Instrument Test Results

Validity test

Table 1. Validity Test Results

Item No	Variable	Corrected Item-Total Correlation/R Calculate	R Table	Information
X1.1	Work Environment (X1)	0.725	0.177	Valid
X1.2		0.714		Valid
X1.3		0.471		Valid
X1.4		0.510		Valid
X1.5		0.561		Valid
X1.6		0.484		Valid
X1.7		0.569		Valid
X1.8		0.526		Valid
X1.9		0.703		Valid
X1.10		0.561		Valid
X1.11		0.703		Valid

Source: Primary Data iSPSSi26iOutput Item-Total Statistics. Processed 2022

Based on table 1, it shows that all statement items in this study have Corrected values Item Total Correlation which is greater than r table at the 120th N, namely 0.177. This indicates that all points of the statement submitted are valid so that all points of the statement can be continued to the next stage.

Reliability Test

Table 2. Research Variable Instrument Reliability Test Results

No	Variable	Rehabilitation	Alpha	Information
1	Work environment	0.818	0.6	Reliable
2	Information Technology	0.701	0.6	Reliable
3	Work Autonomy	0.652	0.6	Reliable
4	Remote Work	0.708	0.6	Reliable

Source: Primary Data iSPSSi26. Output Reliability. Processed i2022

From the results of data processing which can be seen in table 2 above, it can be said that all of the questionnaire items for each work environment variable (X1), information technology (X2), work autonomy (X3) and Remote Work (Y) in this study are reliable. It is shown that the Cronbach's alpha value of all variables has a good value, namely above 0.6. So it can be interpreted that all the values of this research variable are said to be good and acceptable.

Classic assumption test

Normality test

**Table 3. Normality Test Results
One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		120
Normal Parameters, b	Mean	0.0000000
	Std. Deviation	1.08706175
Most Extreme Differences	Absolute	0.054
	Positive	0.054
	Negative	-0.051
Statistical Tests		0.054
Asymp. Sig. (2-tailed)		,200c,d
a. Test distribution is Normal.		

Source: SPSS outputi26. Coefficients, lineariregression. Processed 2022

The results from table 3 above show that the Asymp Sig value. (2-tailed) is 0.200. This means that the regression model in this study has both dependent and independent variables having a normal sample distribution based on the significance value $> \alpha = 0.05$. So it can be said that the distribution of employee performance results originating from the work environment (X1), information technology (X2), and work autonomy (X3) is normally distributed at the level significance $\alpha = 0.05$.

Multicollinearity Test

Table 4. Multicollinearity Test Output

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Work environment	0.520	1,921
	Information Technology	0.600	1,666
	Job_Autonomy	0.508	1,969

a. Dependent Variable: Remote_Work

Source: SPSS outputi26. Coefficients, lineariregression. Processed 2022

Based on table 4 (Coefficients) it can be seen that the variance inflation factor (VIF) for each independent variable has the following values:

- 1) VIF value for work environment variables (X1) as big as $1,921 < 10$ and a tolerance value of $0.520 > 0.10$.
- 2) VIF value for the information technology variable (X2) as big as $1,666 < 10$ and a tolerance value of $0.600 > 0.10$.
- 3) VIF value for the work autonomy variable (X3) as big as $1,969 < 10$ and a tolerance value of $0.508 > 0.10$.

Thus, it can be concluded that the regression equation model does not have multicollinearity and can be used in this research.

Heteroscedasticity Test

Table 5. Gletjer Test Output

Coefficients ^a	
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Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.926	0.768		1,206	0.230
Work environment	-0.004	0.019	-0.024	-0.192	0.848
Information Technology	0.058	0.030	0.226	1,920	0.057
Job_Autonomy	-0.050	0.038	-0.169	-1,320	0.189

a. Dependent Variable: ABS_RES

Source: SPSS outputi26. Coefficient, linear regression. Processed 2022

Table 5 above explains that the results of each independent variable, namely work environment (X1), information technology (X2), and work autonomy (X3), using the Gletjer model, obtained significant values greater than 0.05 (Sig > 0.05) WhichiThis means that the data in this study does not have heteroscedasticity problems so this research can be continued.

Autocorrelation Test

Table 6. Autocorrelation Test

Model Summary ^b					
Model	R	R Square	Adj	Std.	Dur
1	,877a	0.769	0.76	1.1	1.6

a. Predictors: (Constant), Job Autonomy, Information_Technology,
b. Dependent Variable: Remote_Work

Source: SPSS outputi26. Coefficients, linear regression. Processed 2022

Based on table 6, it can be explained that the Durbin-Watson value is 1.692. Where the K value or number of independent variables is 3 and the N value or total respondent data = 120. So we get the dL value = 1,651 and the dU value = 1,753.

Multiple Linear Regression Analysis

Table 7. Multiple Linear Regression Analysis

Variable	Regression Coefficients	t-count	Sig.
Constant	1,128		
Work Environment (X1)	0.312	5,047	0,000
Information Technology (X2)	0.343	5,957	0,000
Work Autonomy (X3)	0.369	5,896	0,000
f-count	129,043		
R Square	0.763		

Source: SPSS outputi26. Coefficient, linear regression. Processed 2022

Based on the results of multiple linear regression analysis which refers to table 7 above, the linear regression equation can be seen as follows:

$$Y = 0.312X_1 + 0.343X_2 + 0.369X_3$$

Information:

Y = Remote Work X1 = Work Environment

X2 = Information Technology X3 = Work Autonomy

The interpretation of the results of this equation is as follows:

- b1: The work environment regression coefficient (X1) has a positive contribution value of 0.312 to the remote work variable (Y). If work environment factors (X1) increases by 1 (one) unit, then remote work (Y) will increase by 0.312, assuming the other independent variables are constant.
- b2: Regression coefficient technology information (X2) have positive contribution value as big as 0.343 to the remote work variable (Y). If the information technology factor (X2) increases by 1 (one) unit, i then remote work (Y) will increase by 0.343, assuming the other independent variables are constant.
- b3: The regression coefficient for work autonomy (X3) has a positive contribution value of 0.369 to the remote work variable (Y). If the work autonomy factor (X3) increases by 1 (one) unit, then remote work (Y) will increase by 0.369, assuming the other independent variables are constant.

Model Feasibility Test

F test

Table 8. Model Feasibility Test Output (F Test)

ANOVA ^a						
Model		Sum of	df	Mean Square	F	Sig.
1	Regression	469,302	3	156,434	129,043	,000b
	Residual	140,623	11	1,212		
	Total	609,925	11			
a. Dependent Variable: Remote_Work						
b. Predictors: (Constant), Job_Autonomy, Information Technology,						

Source: SPSS outputi26. ANOVA. Processed 2022

Based on the anova table data output in table 8 above, it can be explained that the Sig = (0.00) value is smaller than the alpha or error limit level obtained, namely 5% ($\alpha = 0.05$). This means that the model fits the data, so this research is worth continuing.

Coefficient of Determination (R2)

Table 9. Coefficient of Determination (R2)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,877a	0.769	0.763	1.10103
a. Predictors: (Constant), Job Autonomy, Information Technology, Work Environment				
b. Dependent Variable: Remote_Work				

iSource: SPSS 26 Output. Processed 2022

In table 9 it can be seen that the coefficient of determination (R²) is 0.763. This indicates that the independent variables (work environment, information technology and work autonomy) are able to explain the dependent variable (remote work) by 76.3%. Meanwhile, 23.7% is explained by other variables that are not outside this research model.

t test (Research Hypothesis Test)

Table 10. t test

Model		Coefficients ^a			t	Sig.
		Unstandardized Coefficients	Standardized			
		B	Std. Error	Beta		
1	(Constant)	-1.128	1,160		-0.972	0.333
	Work environment	0.146	0.029	0.312	5,047	0,000
	Information Technology	0.273	0.046	0.343	5,957	0,000
	Job_Autonomy	0.339	0.058	0.369	5,896	0,000

a. Dependent Variable: Remote_Work

Source: SPSS outputi26. Coefficients. Processed 2022

Based on table 10, it can be seen that the explanation of this research hypothesis is as follows:

1) First Hypothesis Testing

Based on the results of table 10, it can be seen that the regression coefficient value of the work environment variable has a positive contribution of 0.312, so it can be said that the work environment variable (X1) is directly proportional (positive) to the remote work variable (Y). Based on the t-count value of the work environment variable of 5.047, it can be seen that the t-count value is greater than ttable with dfi116 and two-tailed test. Due to the t value count > ttable (5.047 > 1.980) then H0 is rejected and Ha is accepted, and it can be said that work environment variables influence remote work. A significant value of 0.000 which is smaller than 0.05 indicates that the work environment has a real or significant impact on remote work. So it can be said that the work environment has a significant positive effect on adjustment to remote work.

2) Second Hypothesis Testing

Based on the results of table 10, it can be seen that the regression coefficient value of the information technology variable (X2) has a positive contribution amounting to 0.343, so it can be said that the information technology variable (X2) is directly proportional (positive) to the remote work variable (Y). Based on the t-count value of the information technology variable of 5,957, it can be seen that the t-count value is greater than ttable with dfi116 and two-tailed test. Due to the t value count > ttable (5,957 > 1.980) then H0 is rejected and Ha is accepted, and it can be said that the information technology variable influences remote work adjustments. A significant value of 0.000 which is smaller than 0.05 indicates that information technology has a real or significant impact on remote work. So it can be said that information technology has a significant positive effect on remote work.

3) Third Hypothesis Testing

Based on the results of table 10, it can be seen that the regression coefficient value of the work autonomy variable (X3) has a positive contribution amounting to 0.369,

so it can be said that the work autonomy variable (X3) is directly proportional (positive) to the remote work variable (Y). Based on the calculated value of the work autonomy variable, it is equal to 5,896, it can be seen that the t-value count is greater than t-table with df=116 and two-tailed test. Due to the t value count > t-table (5,896 > 1.980) then H₀ is rejected and H_a is accepted, and it can be said that the work autonomy variable influences remote work. A significant value of 0.000 which is smaller than 0.05 indicates that work autonomy has a real or significant impact on remote work adjustments. So it can be said that work autonomy has a significant positive effect on adjustment to remote work.

Discussion

The Influence of the Work Environment on Adjustment to Remote Work

Based on the results of the research conducted, it was found that the work environment has a significant positive effect on remote work. This is shown by the results of a positive regression coefficient of 0.312 and the results of the t test which shows a significance value of 0.000 (0.000 < 0.05) while t count > t table (5,047 > 1,980). It was found that the results of respondents' assessments of the work environment questionnaire on average answered that they agreed that the equipment or lighting in the work space was good and adequate and lighting workspace helps me in finish the job. This has an impact on remote work carried out by employees during the Covid-19 pandemic they do or work at home. The work environment is everything that is around the work and that can influence employees in carrying out their duties, such as employee services, working conditions, employee relationships within the agency concerned.

The Influence of Information Technology on Adjustment to Remote Work

Based on the research results carried out, it was found that information technology had a significant positive effect on adjustments to remote work. This is shown by the results of a positive regression coefficient of 0.343 and the results of the t test which shows a significance value of 0.000 (0.000 < 0.05) while t count > t table (5,957 > 1,980). The results of the respondents' assessment of the questionnaire were obtained where respondents agreed that when working remotely or working from home, supported by the network they have at home, it is very fast for downloading and uploading files, then the data files sent are never damaged or lost. So that the development of technological advances can make it easier for Administrative Agency employees to carry out remote work during the Covid-19 pandemic.

The Effect of Job Autonomy on Adjustment to Remote Work

Based on the results of the research conducted, it was found that work autonomy has a positive effect significant to adjusting to remote work. The results of this research are shown by the results of a positive regression coefficient of 0.369 and the results of the t test which shows a significance value of 0.000 (0.000 < 0.05) while t count > t table (5.896 > 1.980). The results of the respondents' assessment of the work autonomy questionnaire obtained a good score. The largest mean was obtained from the work criteria indicators where respondents answered in agreement with the statement that employees always carry out tasks in accordance with standard operating procedures that have been determined by the office and they are able to complete the work as best as possible in order to obtain maximum results.

CONCLUSION

Based on the analysis and discussion of the research data, the following conclusions can be drawn; (1) work environment variables have a positive effect and significant for the adjustments to remote work of State Administration Institution Employees during the Pandemic. Providing an understanding that the work environment created during the Covid-19 pandemic and requiring work from home, requires employees to create both physical and non-physical work environments to support employee performance at home, (2) information technology variables have a positive effect and significant for the adjustments to remote work of State Administration Institution Employees during the Pandemic. Provides an understanding that if information technology improves, the performance of employees who work remotely online will also increase, and (3) the work autonomy variable has a positive effect and significant for the adjustments to remote work of State Administration Institution Employees during the Pandemic. Provides an understanding that the more autonomous a job is, the easier it will be for employees to manage schedule policies related to work and family.

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