

# The Work Productivity of Non-Military Nurses through the Work Ethos in Navy Hospital Dr Ramelan Using Structural Equation Modeling

Setiadi<sup>1\*</sup>, Bambang Widjanarko Otok<sup>2</sup>, Dya Sustarmi<sup>1</sup>

<sup>1</sup> High School Health Science Hang Tuah, Surabaya

<sup>2</sup>Laboratory of Environmental and Health Statistic, ‘Sepuluh Nopember’ Institute of Technology (ITS), Surabaya

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## ABSTRACT

The purpose of this research is to examine the patterns of relationship work climate, working discipline, work ethos and workforce productivity of non military nurses in navy hospital (RSAL) Dr RAMELAN using Structural Equation Modeling (SEM). The results of the study showed that the model work productivity through the work ethos is the model fit. Other bureaucratic dimension is the dominant indicators on the climate of the work on the discipline of the work is a compliance on tops, while on work ethos and productivity of each work is the actualisation of themselves and efficient. The work ethos with the indicator as the actualisation (78.8%), call (74.2%) and acts of worship (72.6%) was influenced by the climate of the work and discipline of work, while the work productivity is seen from the measurement obtained that working with academic ability and skills development (*efficacy*) 82.2%, who works with the principle of effectiveness 76.5% and that work using the principles of efficient 84.0 percent influenced by the climate of work, working discipline and work ethic. The work ethos give effect is not directly in the work climate of work productivity.

**KEYWORDS:** SEM, productivity, work ethos, working climate, working discipline

## 1. INTRODUCTION

Productivity is the purpose of each type of organization including the services nursing, with the productivity of the work of a nurse high, then the services in the hospital will be the better and the quality of health services can be improved. Labor productivity improvements intended to enlarge the benefits in the organization of nursing includes to be able to improve the progress of nurses and improve client satisfaction as the recipient of nursing services.

According to [1], stated that the climate of the work is the internal environment that represents the factors in the organization that created the culture and social environment where the activities of the achievement of the purpose of progress. While [2], stated that the climate of the work is the internal environment or the psychology of the organization that affect the practice and HR policies that received by members of the organization. Each organization will have a different working climate. For nurses at the Hospital in accordance with the workplace and work climate nurses is workroom him hospitalized patients and outpatients.

According to [3], explained that in the effort to empower the labor nursing, needed some aspects of philosophical organisatoris among others, the structure of the organization, responsibility cooperation or coordination, standard performance and regional autonomy nurses. When these aspects are less attention it will create working conditions that are not conducive which in the end will reduce the productivity of the work of employee.

Some research on climate change jobs have been done [4], reported that there is a meaningful relationship between the climate of the work with the performance of the executive nurse in general hospital center of Adam Malik Medan. While [5], reported no significant relationships between work climate and work discipline in the Banyumas district hospital. [6] identify that there is a meaningful relationship between the climate of the work with job satisfaction in the hospital Center Police Raden Said Sukanto Jakarta. [7] stated that there is a meaningful relationship between the climate of the work with job satisfaction nurses non civil servants in hospitalization space regional general hospital Ciamis.

Other supporting factor in increasing the productivity of work is a work ethos. According to [8], work ethos is defined as the behavior of the ethical work that became fashionable berporoskan work ethics or in other words the more simple, work ethos are all good habits that are based on the ethics that must be done to standstill work. The work ethos in the organization, includes the motivation that move, the main characteristics of the spirit basis, basic mind, code of ethics, moral code, behavior code, attitudes, public aspirations, beliefs, the principles and standards that became the basis of the behavior and the values that adopted the individuals human beings in the organization or its social context [9].

\*Corresponding author: Setiadi, High School Health Science Hang Tuah, Surabaya. Email: setadi@yahoo.com

The work ethos is an important part of the success of human beings, both in limited job community as well as in the wider social environment. With a high work ethos of the company or organization will be able to increase productivity as expected. Increased work ethos in the organization is the duty and responsibility of all layers, especially leader in build and guide his subordinates that can work with the good and right according to the tasks and their respective functions. With a good working ethos and it will be created a working atmosphere conducive environment that will support the implementation of the tasks that are good and provide a high level of productivity [10].

According to [8], stated that 17-18 experiments in an organization shows a positive improvement after the work ethos. The research states that the work ethos provides better performance and a better satisfaction. This suggests the importance of the success of an organization that must be supported by the work ethos is high. The work ethos indeed needs to be owned by everyone so that the life of the organization can be safely, orderly and smoothly [11]. According to [12], stated that the problem of discipline of the work is a problem that needs to be noted, for with the existence of discipline, can affect the effectiveness and efficiency in the achievement of the purpose of the organization.

Discipline is a function of the operative management of human resources is most important because the better discipline work will be the higher the achievements of work that can be achieved results of research in the field indicates that the level of discipline labor nursing in implementing nursing nursery hospital optimal yet. Working discipline nurses at the Regional General Hospital bars indicate nurses executor 50 % disciplined working and 50 % disciplined work still good enough. This is strengthened by the research [13], also find working discipline nurses commissioning hospital Islam Samarinda have high discipline 49.5% and low 50.5 %.

The method used will be used in studying the relationship between the climate of the work the work ethos and discipline work with workforce productivity nurses non executive military in RSAL dr Ramelan Surabaya is Structural Equation Modeling (SEM) [14] [15].

## 2. LITERATURE STUDY

The validity of the measure of what should be measured. The validity of the testing done by the parameters of the measurement model. The test statistics used is T-test or when the p-value <  $\alpha$  then reject H0 which means valid indicator. Reliability is the consistency of a measurement. To measure the reliability can be used composite reliability (C-R) as follows [15]

$$C - R = \frac{(\sum_{i=1}^n \lambda_i)^2}{(\sum_{i=1}^n \lambda_i)^2 + (\sum_{i=1}^n \delta_i)} \quad (1)$$

with  $\lambda_i$  is the factor loading for each change or latent variable and  $\delta_i$  is error variance for each measurement. The value of the minimum used to assess CR or is said to have good reliability for a latent exchangeable was 0.70.

According to Lee [16], in Confirmatory Factor Analysis (CFA) Models, the relationship between the latent variables can be estimated based covariance on the following equation from:

$$\mathbf{x}_1 = \boldsymbol{\Lambda}_1 \boldsymbol{\eta} + \boldsymbol{\epsilon}_1 \quad (2)$$

$$\mathbf{x}_2 = \boldsymbol{\Lambda}_2 \boldsymbol{\xi} + \boldsymbol{\epsilon}_2 \quad (3)$$

With  $\mathbf{x}_1$ (rx1) and  $\mathbf{x}_2$ (sx1) is vectors of random variables which are indicators of  $\boldsymbol{\eta}$  and  $\boldsymbol{\xi}$ ,  $\boldsymbol{\Lambda}_1$  (rxq<sub>1</sub>) and  $\boldsymbol{\Lambda}_2$  (sxq<sub>2</sub>) is based on the loading,  $\boldsymbol{\epsilon}_1$ (rx1) and  $\boldsymbol{\epsilon}_2$ (sx1) is vectors of random error. The assumption that must be met that error berdistribusi normal,  $\boldsymbol{\epsilon}_1$  and  $\boldsymbol{\epsilon}_2$  not correlates with  $\boldsymbol{\eta}$ ,  $\boldsymbol{\xi}$  and  $\boldsymbol{\delta}$ . So the structural equation model as follows [16].

$$\boldsymbol{\eta} = \boldsymbol{\Gamma} \boldsymbol{\xi} + \boldsymbol{\delta} \quad (4)$$

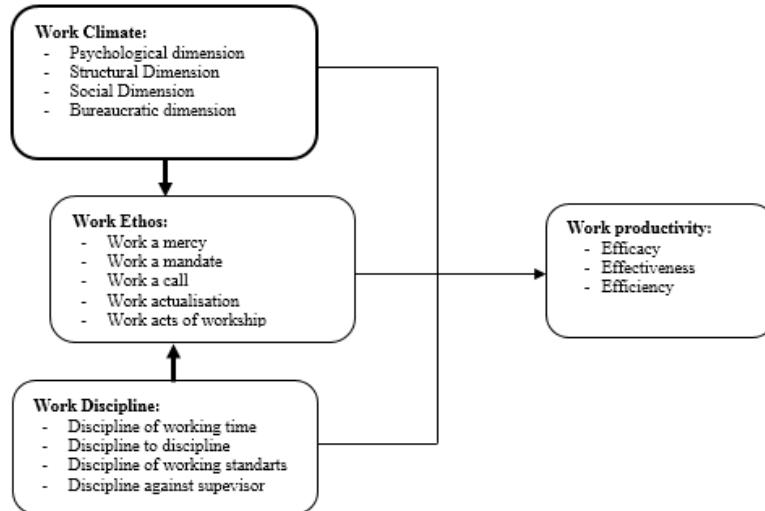
with  $\boldsymbol{\eta}$ (q<sub>1</sub>x1) is vectors of random endogenous latent variable, and  $\boldsymbol{\xi}$ (q<sub>2</sub>x1) vectors of random exogenous latent variables,  $\boldsymbol{\Gamma}$ (q<sub>1</sub> x q<sub>2</sub>) is coefesient between  $\boldsymbol{\eta}$  and  $\boldsymbol{\xi}$ ,  $\boldsymbol{\delta}$  (q<sub>1</sub>x1) is vectors random error.

The estimation of structural model parameters using the Maximum Likelihood method can be formulated as follows [14][16].

$$F_{ML} = \log|\Sigma(\theta)| + \text{tr}(S\Sigma^{-1}(\theta)) - \log|S| - (p + q) \quad (5)$$

### 3. METHODOLOGY

The technique of data collection is done by using questionnaires and supported by observation. The population in this research is the whole nurse executive non-military on 25 space hospitalized in Hospital dr Ramelan Surabaya. The sample in this research is taken in probability sampling with the technique of systematic random sampling [17]. The latent variable that is used is working climate, working discipline, work ethos and productivity. CFA used test the validity of a change theoretically [18][19]. The primary concept that is used in this case is the measurement validity and reliability. Sounding parameters, hypothesis testing and model in SEM used maximum likelihood, T-test and chi-square. The framework of the concept as follows.



**Figure 1. The Path Diagram of Model Competency work force productivity Nurses**

Path Diagram on the Figure 1. above can be converted into structural model as follows :

$$\text{Work ethos} = \gamma_{11} \text{Work Climate} + \gamma_{12} \text{Work Discipline} + \delta_1$$

$$\text{Work productivity} = \gamma_{21} \text{Work Climate} + \gamma_{22} \text{Work Discipline} + \beta_{13} \text{Work ethos} + \delta_2$$

### 4. RESULTS AND DISCUSSION

The measurement of the model consists of a validity and reliability test. The results are presented in detail in the following table.

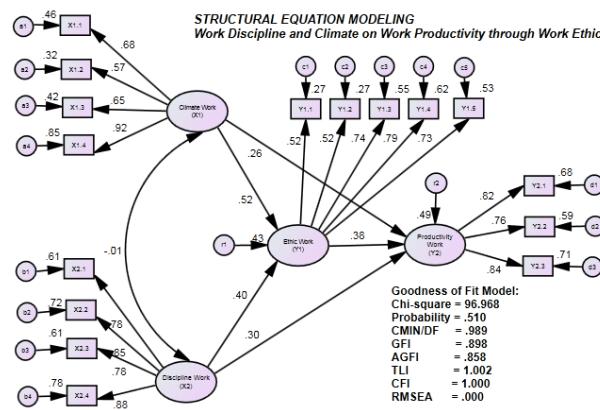
**Table 1. Validity and reliability Test of the indicators on the latent Variable**

Variables	Indicators	Validity		Reliability		Composite Reliability (C-R)
		Loading ( $\lambda$ )	P-value	Error variance	P-value	
<b>Work climate (X1)</b>	Psychological (X1.1)	.677	0.000	.166	0.000	0.802
	Structural (X1.2)	.567	0.000	.253	0.000	
	Social (X1.3)	.649	0.000	.310	0.000	
	bureaucratic (X1.4)	.921	0.000	.064	0.045	
<b>Work discipline (X2)</b>	working time (X2.1)	.784	0.000	.244	0.000	0.895
	rules (X2.2)	.848	0.000	.152	0.000	
	working standarts (X2.3)	.780	0.000	.194	0.000	
	against the supevisor (X2.4)	.883	0.000	.118	0.000	
<b>Work ethos (Y1)</b>	mercy (Y1.1)	.518	0.000	.351	0.000	0.798
	mandate (Y1.2)	.523	0.000	.178	0.000	
	call (Y1.3)	.742	0.000	.206	0.000	
	actualisation (Y1.4)	.788	0.000	.153	0.000	
	Acts of worship (Y1.5)	.726	0.000	.190	0.001	
<b>Work productivity (Y2)</b>	Efficacy (Y2.1)	.822	0.000	.174	0.000	0.851
	effectiveness (Y2.2)	.765	0.000	.190	0.000	
	efficiency (Y2.3)	.840	0.000	.124	0.000	

Table 1 shows the value of loading factor worth more than 0.5 and p-value < 0.05 each indicator on the work climate latent variables (X1), work discipline (X2), work ethos (Y1) and work productivity (Y2) then all said indicator is valid and significant in forming the latent variable. While for reliability, Table 1 also shows that all the latent variable gives the value of C-R above the value of the cut-off his 0.7 it can be said all the latent variable reliabel.

After the validity test and reliability on each of the latent variable, some prerequisites that must be met in the structural modeling is the assumption data of multivariate normal distribution, non multicollinearity, non singularity and non outlier. Normalitas from data is one of the conditions in the modeling of SEM. Critical Ratio (CR) multivariate value of 1.937 and this value is located between -1,96 until 1.96, so that it can be said that the data normal multivariat distribution. Singularity can be seen through determinant covariances matrix and the research results provide the value of 0.006048. This value is almost approaching from zeros so that it can be said that there had been problems on the data analyzed. So not directly all the latent variable no multicollinearity. Outlier is the observation that appears with extreme values in both multivariate univariate, Mahalanobis value greater than the Chi-square table or the value of  $p_1 < 0.001$  said the observation that outlier. In this research there are three data outlier, but still within the alpha 5 percent, then can still was not an outlier.

The analysis with the form of the path diagram of as follows.



**Figure 2. The Relationship of the Work discipline and Climate with productivity through Work Ethos**

The results of the complete model testing in AMOS program in detail can be seen in the following table:

**Table 2. The results of Goodness of Fit test the Model Work Productivity**

The criteria	Cut – Off Value	Calculation results	Description
Chi - Square	It is expected that small	96.968	$\chi^2$ with df 98 is 122.108 Good
Probability	$\geq 0.05$	0.510	Good
RMSEA	$\leq 0.08$	0.000	Good
GFI	$\geq 0.90$	0.898	Good enough
AGFI	$\geq 0.90$	0.858	Good enough
CMIN/df	$\leq 2.00$	0.989	Good
TLI	$\geq 0.95$	1.002	Good
CFI	$\geq 0.95$	1000	Good

Based on the table above shows that 6 (six) criteria used to assess worthy or not a good model it states. It can be said that the model can be accepted, which means there is a similarity between the model with data.

From the appropriate model, so it can be in interprets each path coefficient. The path coefficient is the hypothesis in this research that can be performed in the following structural equation:

$$\begin{aligned} Y1 &= 0.52 X1 + 0.40 X2 \\ Y2 &= 0.26 X1 + 0.30 X2 + 0.38 Y1 \end{aligned}$$

Where:

X1 = work climate

X2 = work discipline

Y1 = work ethos

Y2 = work productivity

The path coefficient testing on picture 2 and equality above in detail is presented in the following table:

**Table 3. The Result Path Coefficient Test of Model Work Productivity through Work Ethos**

The variables	Path Coefficient	Critical Ratio (CR)	Prob. (p)	Description
Work climate (X1) → work ethos (Y1)	0.523	3.573	0.000	Significant
Work discipline (X2) → work ethos (Y1)	0.403	3.248	0.001	Significant
Work climate (X1) → work productivity (Y2)	0.297	2.078	0.038	Significant
Work discipline (X2) → work productivity (Y2)	0.260	2.632	0.008	Significant
Work ethos (Y1) → work productivity (Y2)	0.378	2.426	0.015	Significant

Note: → is affecting

Based on the Table 3, interpretation of each path coefficient is as follows:

- The work climate (X1) have positive and significant impact on the work ethos (Y1). This can be seen from the path marked by the positive coefficient of 0.523 with the value CR of 3.573 and obtained the significance probability (p) of 0.000 smaller than equal significance ( $\alpha$ ) determined by 0.05. Thus show that the work climate (X1) directly impact on the work ethos (Y1) of 0.523, which means that every increase in work climate (X1) then will raise the work ethos (Y1) of 0.523.
- The Work discipline (X2) have positive and significant impact on the work ethos (Y1). This can be seen from the path marked by the positive coefficient of 0.403 with the value CR of 3.248 and obtained the significance probability (p) of 0.001 smaller than equal significance ( $\alpha$ ) determined by 0.05. Thus the discipline of work (X2) directly impact on the work ethos (Y1) of 0.403, which means that every increase in the discipline of work (X2) then will raise the work ethos (Y1) of 0.403.
- The work climate (X1) have positive and significant impact on the work productivity (Y2). This can be seen from the path marked by the positive coefficient of 0.297 with the value CR of 2.078 and obtained the significance probability (p) of 0.038 smaller than equal significance ( $\alpha$ ) determined by 0.05. Thus the work climate (X1) directly impact on work productivity (Y2) of 0.297, which means that every increase in the work climate (X1) then will increase the work productivity (Y2) of 0.297.
- Work discipline (X2) have positive and significant impact on the productivity of work (Y2). This can be seen from the path marked by the positive coefficient of 0.260 with the value CR of 2.632 and obtained the significance probability (P) of 0.008 smaller than equal significance ( $\alpha$ ) determined by 0.05. Thus the work discipline (X2) directly impact on productivity of work (Y2) of 0.260, which means that every increase in the discipline of work (X2) then will increase the productivity of work (Y2) of 0.260.
- The work ethos (Y1) have positive and significant impact on the productivity of work (Y2). This can be seen from the path marked by the positive coefficient of 0.378 with the value C.R of 2.426 and obtained the significance probability (P) of 0.015 smaller than equal significance ( $\alpha$ ) determined by 0.05. Thus the work ethos (Y1) directly impact on productivity of work (Y2) of 0.378, which means that every increase in the work ethos (Y1) then will increase the productivity of work (Y2) of 0.378.

It is said that with the often not discipline human resources then target job completion never achieved that in turn affect the productivity of the work of the organization. Working discipline nurses located in a unit or ward nursing vary. There was a nurse diligent and diligent in the work so that it is very productive and have high ability in completing tasks and responsibilities in providing nursing nursery. On the contrary there was also a nurse lazy and lack good working ethos so that productivity is low.

## 5. CONCLUSION

The results of the study showed with the approach of SEM that productivity model work through the work ethos is the model fit and the indicator on the work climate, working discipline, work ethos and workforce productivity is valid and reliable. The work ethos with the indicator as the actualisation (78.8%), call (74.2%) and acts of worship (72.6%) was influenced by the climate of the work and discipline of work, while the workforce productivity is seen from the measurement obtained that working with academic ability and skills development (*efficacy*) 82.2%, who works with the principle of effectiveness 76.5% and that work using the principles of efficient 84.0 percent influenced by the climate of work, working discipline and work ethic.

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