

The Relationship Between Clean School Environment And Student's Clean Lifestyle Behaviour In Indonesia Junior And Senior High School

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Abstract: Clean and healthy lifestyle is an important thing for student. Healthy environment can encourage study activity in school. School environment is prominent factors for the formation of students habits. This research is aimed to see clean school healthy effect on student's clean lifestyle behavior in junior and senior high school in Indonesia. Secondary data from Healthy School Competition were the used for analysis. Structural Equation Modelling (SEM) was used to analyse the data. Based on SEM it was found that clean school significantly affect student's clean lifestyle behavior. The analysis also show that considering teacher's behavior into SEM analysis, the effects of clean school environments are even stronger.

Index Terms: Clean, behaviour, school environments, student, teacher

1 INTRODUCTION

Healthy environment is an important thing to encouraged study activity in schools. Both senior and junior high school student's population have high number in Indonesia. Their age range between 11 to 18 years old. This might be the transition time from childhood to adulthood. According to Brener et al. [1], the teenager often to have unhealthy lifestyle, such as smoking, alcohol, less sleep, etc. Generally, boys tend to have unhealthier lifestyle than girls [2][3]. The role of schools in applying a clean and healthy lifestyle in adolescents is really enormous. Adolescents spend a large proportion of their day in school or pursuing school-related activities. Therefore, the healthy lifestyle of adolescents is strongly influenced by the surrounding environment including school environment. Basically, the school also tries to organize programs that can improve the healthy lifestyle of the students. Schools seek to affect student's health in a number of ways including: teaching (health classes); exercise via physical education classes and extra-curricular sports; nutrition through school lunch content, off-campus eating policies, and vending machine content; and, in some cases, the provision of direct medical services [4].

Nowadays, Indonesian Government has formal regulation (President Decree No. 87 year 2017) to form a healthy lifestyle habits for students. These efforts are conducted through three paths of curriculum such as intra-curricular, co-curricular, and extra-curricular. Healthy school development program is a collaborative policy between Ministry of Education and Culture and Ministry of Health with kindergarten until high school students as main target which counted about 45 million students. This Program has short term and long term effect. Long-term effect is the increasing of health and disease prevention in schools. While short-term effects of this program is that students can build healthy lifestyle behavior in their family when they become parents. This research aims to measure the influence of clean environment in schools on student's clean lifestyle behavior.

2 METHODS

2.1 Data Collection

Research Data were collected from Healthy School Competition (HSC) held in the period of 2016 to 2017. The sample group for this research includes 690 students from junior and senior high school of 34 provinces in Indonesia. The number of samples has been qualified using SEM model test [4].

2.2 Instrument

There were two instruments used to collect data for the purposes of HSC, the school conditions observation instrument assessed team from the ministry of education and culture and questionnaires filled by students. Questionnaires filled out by students reveal about clean life practices that reflect clean student habits, as well as their perceptions of the school's clean environment. In this research qualitative data has been collected about the effects of positive and negative school environment and teacher's attitude on the clean behavior of students. For this purpose 690 junior and senior high school students were chosen randomly and asked questions about the school environment attitude of their teachers during middle school and high school how these affected their clean behavior. Students selected to fill out the questionnaire at both junior and senior high school levels are

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the final grade students. To ensure the reliability and validity of the instrument, standardization has been conducted under HSC National Assessment Team that consists of Ministry of Education and Culture, Ministry of Religious Affairs, Ministry of Health and Ministry of Home Affairs.

2.3 Data Analysis

Data analysis was conducted using Structural Equation Modeling (SEM) method using software LISREL 8.30. This method identifies the strength of clean school environment as a independent (exogenous) variable on the students' clean behaviors as dependent (endogenous) variables. To know the strength of independent variable to dependent variable, teacher's behavior will be included as interventional variable. The observed variables in clean school environment were determined by the Missouri Department of Elementary and Secondary Education [5]. Nine clean school criteria were included in the observe variables. These nine clean school criteria generally consist of cleanliness of class, places of worship, canteens, toilets, and hand-washers. The teacher's behavior in creating a clean lifestyle in school is very important. The most important factor in education and teaching activities is the teacher. A teacher, in the most general terms, is a person working in educational institutes who enables students to reach cognitive, sensory and behavioral aim and gains within the range determined by the educational system [6]. The understanding of modern education in our day lays the duty and responsibility of being effective in not just the child's intellectual development but also character development solely on the shoulders of the teacher. The teacher's behavior is directly accepted and copied by students, which puts great responsibilities on the teachers. Studies performed in the current day clearly show the effect on students of mutual interaction in teacher-student relationships, teachers approach regarding students and especially the perception of this by students. Observed variables for student's clean lifestyle behavior is based on World Health Organization (WHO). According to WHO [7], In many situations, students may be required to carry out activities such as cleaning toilets, carrying water to or within the school, and collecting solid waste. Based on this, the observed variables on students' clean life habits are focused on keeping the classroom clean. Exogenous, endogenous, and interventional variables can be seen in Table 1. By using SEM method there were three phases of analysis. First, determining the level of closeness of the relationships among variables contained in the model using model estimation. Second, conducting goodness of fit test to see that the overall model is good and can be accepted. Third, identifying the interrelationship of observed variables into latent variables.

TABLE 1: LATENT AND OBSERVE VARIABLES

Latent Variables	Code	Observe variable
Clean school environment	X1a	Classroom cleanliness
	X1b	Classroom air ventilation system
	X1c	Classroom lightning
	X1d	Classroom tidiness
	X1e	Worship place cleanliness
	X1f	Worship place tidiness
	X1g	School toilet cleanliness
	X1h	School cafeteria cleanliness
	X1i	Hand wash cleanliness
Teacher's behavior on clean lifestyle	Y1a	Teacher's attitude towards students
	Y1b	Teacher's kindness towards students
	Y1c	Teacher's annoying attitude
Student's clean lifestyle behavior	Y3a	Put the trash into the garbage
	Y3b	Pick up and throw it in the trash whenever finds trash
	Y3c	The habit of throwing garbage into drawer
	Y3d	The habit of throwing garbage in the classroom

3 RESULTS

3.1 Model Estimation

Model estimation stage is performed to obtain the value or the factor load contained in the model. The estimation method used is Maximum Likelihood Estimation (MLE). The standardized solution results in the cross-processing diagram of the LISREL 8.30 program as shown in Fig. 1 to determine the level of closeness of the relationships among variables contained in the model. Through the measurement model using confirmatory factor analysis it can be seen the value of factor load which reflects how strong the observe variables measure each endogenous and exogenous latent variables.

3.2 Suitability Test

A model that has been estimated, performed a suitability test before the model is accepted as a representation of the model of student behavior. In Table 2 it can be seen that all test results have met the fit model. The P-value model with a value of 0.9000 has been able to explain the data comprehensively, since p-value is the probability of obtaining large deviations from the empirical data obtained with the theory built on SEM theory. The value of the RMSEA test result (Root Means Square Error of Approximation) is the value used to measure the deviation of parameter values on a model. The GFI value (Goodness of Fit Index) is a measure that shows how large the model is able to explain the diversity of data and should be between zero and one. According to Brown & Cudeck as quoted by Wijayanto^[8] the value of $RMSEA \leq 0.05$ denotes close fit whereas $0.05 < RMSEA \leq 0.08$ indicates good fit.

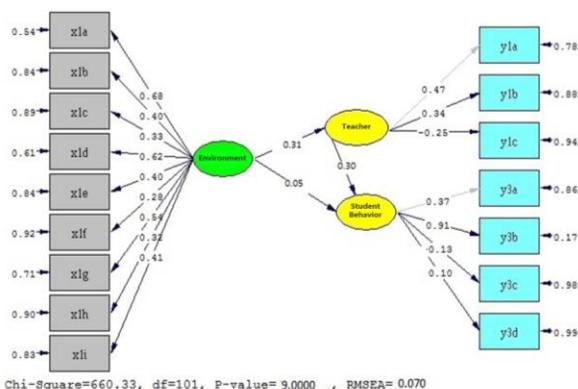


Fig. 1. Standardized Solution Path Diagram

TABLE 2: Goodness of Fit Model SEM

Goodness of Fit	Cut Value	Off	Result	Information
Significant Probability (p- value)	≥ 0,05	0,90	Good Fit	
Root Mean Square Error of Approximation (RMSEA)	≤ 0,08	0,07	Good Fit	
Root Mean Square Residual (RMR)	≤ 0,05	0,01	Good Fit	
Goodness of Fit Index (GFI)	≥ 0.90	0.90	Good Fit	
Adjusted Goodness of Fit Index (AGFI)	≥ 0.90	0.91	Good Fit	
Comparative Fit Index (CFI)	≥ 0.90	0.90	Good Fit	

3.3 Latent Variable Interrelationship Estimation

To see the significance of the relationship between variables in the model estimation stage, latent variable interrelationship estimation using T test was performed. The greater value of factor load, the stronger the indicator relationship with the latent variables. In addition to looking closely at the relationships among variables, the T-test on the cross-diagram makes it easier to interpret relationships among variables (Fig. 2). An observe variable have good validity to latent variable if the load factor value is greater than the critical value (or ≥ 1.96 or practically ≥ 2) and the standardized loading factor ≥ 0.50 [9]. The calculation results show that this model has degrees of freedom of 101. Because the free degrees are positive, it can be identified that the model is over-identified model. This means that the built model is appropriate [8]. Table 3 shows the evaluation results on the validity and reliability of each latent variable. Based on table 3 it is found that there are 16 indicators with 3 latent variables, all the indicators passed the validity test so that it can be concluded that all the respondent's answer to the questions used to measure each observe variable is consistent and reliable. Based on the value of Standardized Loading Factor (SLF) among the latent variables it is known that teacher's behavior is more able to influence the students' clean lifestyle behavior compared to the clean school environment. However, a combination of clean school environments and teacher's behaviors can improve the students' clean lifestyle behavior compared to the school clean environment (Table 4).

TABLE 3: INDICATOR VALIDITY

Latent Variables	Code	Observe variable	Standardized Loading Factor (SLF)	T-test
Clean school environment	X1a	Classroom cleanliness	0.68	16.82 *
	X1b	Classroom air ventilation system	0.40	9.25 *
	X1c	Classroom lightning	0.33	7.51 *
	X1d	Classroom tidiness	0.62	15.25 *
	X1e	Worship place cleanliness	0.40	9.24 *
	X1f	Worship place tidiness	0.28	6.44 *
	X1g	School toilet cleanliness	0.54	12.88*
	X1h	School cafeteria cleanliness	0.32	7.31*
	X1i	Hand wash cleanliness	0.41	9.59*
	Teacher's behavior on clean lifestyle	Y1a	Teacher's attitude towards students	0.47
Y1b		Teacher's kindness towards students	0.34	3.38*
Y1c		Teacher's annoying attitude	0.25	3.04*
Student's clean lifestyle behavior	Y3a	Put the trash into the garbage	0.37	2.00*
	Y3b	Pick up and throw it in the trash whenever finds trash	0.91	2.40*
	Y3c	The habit of throwing garbage into drawer	0.13	2.93*
	Y3d	The habit of throwing garbage in the classroom	0.10	2.24*

(*) Significant in α = 0.30

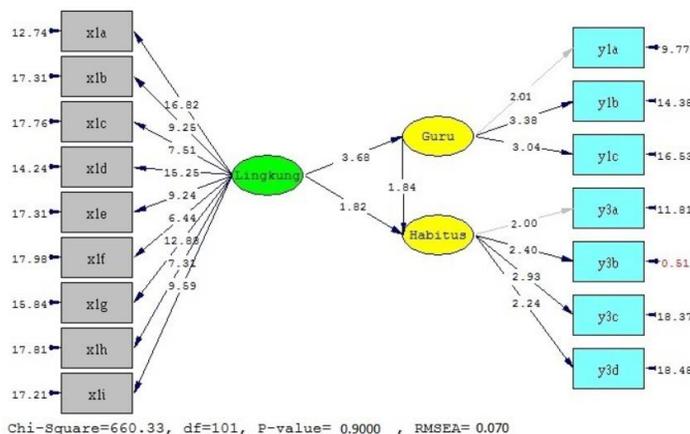


Fig. 2. T-test Path Diagram

TABLE 4: THE VALUE OF INTER-VARIABLE INFLUENCES

Inter-variables influences	Direct	Un-direct	Total
Clean school environment → Teacher's behavior	0.31176		0.31176
Clean school environment → Students' clean lifestyle habituation	0.05271	0.09360	0.14631

Teacher's behavior → Students' clean lifestyle habituation	0.30023	0.30023
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4 DISCUSSION

The results of statistical analysis show that the concept of school physical environment is not only limited to the classroom, but more generally on where students perform various daily activities when they follow the learning activities. Therefore, worship place, toilets, and cafeteria also become factor in school clean environment. The analysis result shows that the clean environment is not only about waste, but the clean condition of school buildings. It is not only involved school staffs but also students for keeping the school clean. Therefore, the clean school environment also has an important impact on students' habits. Based on the result, indicator variables that have the highest SLF value are class cleanliness, class neatness, and toilets cleanliness. Basically, home is the first place where students learn about cleanliness. These habits can be brought up to school if students are given the freedom to be creative and given responsibility. Students can maintain a sense of home by keeping selected personal items through artwork display [10]. According to Zomerplaag & Mooijman [11], late primary and secondary school (12-18 years) must ensure sufficient privacy for boys and girls. Segregation of boys' and girls' toilets is something that parents often require. The result of statistical analysis becomes an indicator that the clean environment reflects the convenience. Clean school environment doesn't only have concept of green school but also safe school. The fulfillment of the student's intellectual through the teachers is only possible if they allow student develop their personality in freely [12, 13]. Teachers with good knowledge and abilities could directly affects their students [14]. Based on the results of secondary data analysis, more than 80% of students said they never saw teachers and school littering. It is good behavior that can be emulated by students to maintain school cleanliness. Nearly 30% of students' day lives are spent in school. This time allocation has an important role for students' clean lifestyle behavior. Most student activities in schools are influenced by teacher's behavior. The presence of teachers is an important factor in school clean environments impact on the students' clean lifestyle behavior. In performing its role as an educator, teacher also give an example in maintaining environmental cleanliness. The results of further analysis indicate that the presence of teachers in helping students to meaning the environment therefore it will increase the influence of clean environment on students' clean lifestyle habituation. Without considering teacher' behavior factor, coefficient of clean environment influence on students' clean lifestyle habituation amounted 0.053. Considering the factor role of teachers' model as interventional variable, the variable of clean school environment was increased to 0.094. Increasing of coefficient value is due to two reasons. First, the clean school environment has a direct influence on teacher behaviors. The clean school environment is a reference for teachers to run their behaviour to form the students' clean lifestyle habituation. Second, the teachers' behavior variables have a direct influence on students' clean lifestyle behaviour. The influence of clean school environment on teachers' behavior and the influence of teachers' behavior on students' clean lifestyle behaviour was having greater value than the direct influence of clean school environment on students' clean lifestyle behavior.

4 CONCLUSION

The results of the analysis show that the clean school environment has a significant influence on students' clean lifestyle behaviour. Teacher's behaviour on clean lifestyle also has great impact on students' clean lifestyle behaviour and make the clean school environment impact on student behaviour becomes stronger.

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