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RESEARCH ARTICLE

RELATIONSHIP BETWEEN INDIGENOUS KNOWLEDGE, SOCIOECONOMIC STATUS, AND SELF-EFFICACY WITH ENVIRONMENTAL SANITATION BEHAVIOR

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Abstract

This research aim to investigate the relationship between indigenous knowledge, socioeconomic status and self-efficacy with environmental sanitation behavior at Muara Angke, Penjaringan, North Jakarta. The method used was survey with a correlational technique, involving 100 samples. The data was then analyzed using regression and correlation test. The results revealed that there are linear and significant relationships between indigenous knowledge, socioeconomic status, self-efficacy, and environmental sanitation behavior. Therefore, it may be beneficial to consider those variables when stakeholders want to improve environmental sanitation behavior in the community. Further research is needed for variable other than those mentioned in this research, such as ethics, personality, etc.

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Introduction:-

In general, a healthy environment is an environment that can provide stability while helping maintain the health of all the population living there (Notoatmodjo, 2014). Creating a clean and healthy environment needs a lot of effort. Thus, the awareness of the importance of a healthy environment needs to be build up. One of the important elements of a healthy environment is sanitation.

Understanding of the importance of sanitation is closely related to the health of the people. According to Entjang (2000) in places where the sanitation is poor, with lots of flies and mosquitos, careless sewage and garbage disposal and lack of clean water, the morbidity-mortality rate is high. Conversely, in places with good sanitation, the morbidity-mortality rate is usually low (Rismawati, 2013).

The result of a study conducted by Mara et al. (2010) showed that inadequate sanitation played a part in at least one-third of annual death in low and middle-income countries. Meanwhile, Prüss-Üstün et al. (2008) stated a significant correlation between poverty and poor sanitation, which leads to diseases, especially in developing countries. Merchant et al. (2003) stated that interventions done to improve sanitation could significantly improve the population's health and well-being by preventing and reducing the risk of diseases associated with poor sanitation.

The research results mentioned above encouraged the writer to conduct research to investigate the relationship between environmental sanitation behavior and indigenous knowledge, socioeconomic status, and self-efficacy at Muara Angke, North Jakarta. Muara Angke was chosen because according to the observation results, the sanitation in Muara Angke is quite poor; lack of wastewater treatment facility and toilet is really apparent. Also, the population

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there don't really apply environmental sanitation behavior, with most of them still choosing to dump their waste at the river, not wash hands before and after eating, etc.

This study's research questions are: (a) Is there a relationship between indigenous knowledge and environmental sanitation behavior?; (b) Is there a relationship between socioeconomic status and environmental sanitation behavior?; (c) Is there a relationship between self-efficacy and environmental sanitation behavior?; (d) Is there a relationship between indigenous knowledge, socioeconomic status and self-efficacy (simultaneously) with environmental sanitation behavior?

According to WHO (2017), environmental sanitation is a set of actions to collect and dispose all kinds of waste within the environment to protect and promote health and quality of life. Notoatmodjo (2007) stated that environmental sanitation behavior is the actions that are done to improve and maintain the standard of environment that is adequate to support the population. It means that environmental sanitation behavior does not only relate to prevent diseases, but it is also important to maintain socioeconomic values and aesthetic values.

According to Solso (1991), the purpose of knowledge is to obtain certainty and eliminate prejudice. Meanwhile, Suriasumantri (2006) stated that knowledge is the product of thinking and imagining which enable people to rediscover themselves and live their life better.

Mpofu and Miruka (2009) stated that indigenous knowledge is a non-formal knowledge developed outside the formal education system that resides in a person's mind. Meanwhile, Sithole (2007) stated that indigenous knowledge is mostly stored in people's minds and passed on by word of mouth rather than in written form, making it vulnerable to change".

According to Santrock (2004), socioeconomic status is the position of someone in a group based on work, economic condition, and education. There are several factors that may determine the socioeconomic status of an individual in a community, including education, employment, income, wealth, participation in social activities, etc.

Schermerhorn et.al.(2010) stated that self-efficacy is an individual belief about the likelihood of successfully completing a specific task". Mcshane and Glinow (2010) stated that self-efficacy is related to personal beliefs regarding competencies and abilities". Lastly, according to Kreitner and Knicky (2008), self-efficacy is someone's belief regarding his/her chances to complete a task.

Research Method: -

The method used in this research was a survey with correlational technique, which is used to investigate the relationship between variables and the significance of the relationship (using correlation coefficient).

The relationship between each variable is illustrated in Figure 1.

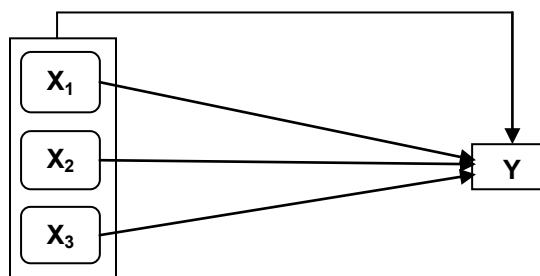


Figure 1:-Theoretical Framework.

Notes :
 X_1 = Indigenous knowledge
 X_2 = Socio-economic status
 X_3 = Self-efficacy

Y = Environmental sanitation behavior

The sampling was taken using simple random sampling, with 100 households picked as respondents. The data then analyzed using regression and correlation test. Prior to data analysis, a normality test was performed using Liliefors test, and a homogeneity test using the Bartlett test.

Discussion: -

The relationship between indigenous knowledge and environmental sanitation behavior was calculated using simple regression analysis. The results of the regression analysis is the formula of $\hat{Y} = 79.137 + 0.999X_1$. The results of the tests are presented in Table 1

Table1:- The significance and linearity test on the regression model.

$$\hat{Y} = 79.137 + 0.999X_1.$$

Varians	Degree of Freedom	Sum of Squares	Mean Squares	F _{count}	F _{table in α}	
					0.05	0.01
Total	99				0.05	0.01
Coefficient (a)	1					
Regression (b/a)	1	1,643.552	1,643.552	7.69**	2.70	3.99
Residue	98	20,948.558	213.761			
Error	13	4,857.851	373.681	1.47 ^{ns}	1.84	2.35
	85	16,090.707	189.302			

Notes:**p:0,01 (very significant)ns: non significant

Table 1 shows that there is a very significant relationship between indigenous knowledge and environmental sanitation behavior. The fact that $F_{count} > F_{table}$ means that the relationship between indigenous knowledge and environmental sanitation behavior is linear. In other words, the better the indigenous knowledge, the better the environmental sanitation behavior will be.

The coefficient correlation (which showed the significance of the relationship between indigenous knowledge and environmental sanitation behavior (r_{y1}) was recorded at 0.270. The results of the test are presented in Table 2.

Table 2:- Significance of Partial Correlation Coefficient($r_{y1.23}$).

Sample (n)	Correlation coefficient (zero)	Second order correlation	t _{count}	t _{table in α}	
				0.05	0.01
100	0.270	0.232	2.77**	1.66	2.38

** p < 0,01

The results of t test showed that $t_{count} > t_{table}$ at $\alpha = 0.01$ ($2.77 > 2.38$), meaning that the correlation coefficient between indigenous knowledge and environmental sanitation behavior is very significant. In other words, there is a very significant positive relationship between indigenous knowledge and environmental sanitation behavior.

The coefficient of determinant of the relationship between indigenous knowledge and environmental sanitation behavior (on the second order correlation of 0.232) of 5.38% ($0.232 \times 2 \times 100\% = 5.38\%$) means that 5.38% of the variation in environmental sanitation behavior can be explained using the indigenous knowledge variable.

The relationship between socioeconomic status and environmental sanitation behavior was calculated using simple regression analysis. The results of the regression analysis is the formula of $\hat{Y} = 86.563 + 0.514X_2$. The results of the tests are presented in Table 3.

Table 3:- The significance and linearity test on the regression model.

$$\hat{Y} = 86.563 + 0.514X_2.$$

Varians	Degree of Freedom	Sum of Squares	Mean Squares	F _{count}	F _{table in α}	
					0.05	0.01
Total	99				0.05	0.01
Coefficient (a)	1					
Regression (b/a)	1	1,238.589	1,238.589	5.68**	2.70	3.99
Residue	98	21,353.521	217.893			

Error	3 95	847.460 20,506.061	282.487 215.853	1.31 ^{ns}	1.84	2.35
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Notes: **p:0,01 (very significant)ns: non significant

Table 3 shows that there is a very significant relationship between socioeconomic status and environmental sanitation behavior. The fact that $F_{count} > F_{table}$ means that the relationship between socioeconomic status and environmental sanitation behavior is linear. In other words, the better the socioeconomic status, the better the environmental sanitation behavior will be.

The coefficient correlation (which showed the significance of the relationship between socioeconomic status and environmental sanitation behavior (r_{y2}) was recorded at 0.234. The results of the test are presented in Table 4.

Table 4:- Significance of Partial Correlation Coefficient ($r_{y2.13}$).

Sample (n)	Correlation Coefficient (zero)	Second order correlation	t_{count}	$t_{table \text{ in } \alpha}$	
				0.05	0.01
100	0.234	0.222	2.38*	1.66	2.38

* $p < 0,05$

The results of t test showed that $t_{count} > t_{table}$ at $\alpha = 0.05$ ($2.38 > 1.66$), meaning that the correlation coefficient between socioeconomic status and environmental sanitation behavior is very significant. In other words, there is a very significant and positive relationship between socioeconomic status and environmental sanitation behavior.

The coefficient of determinant of the relationship between socioeconomic status and environmental sanitation behavior (on the second order correlation of 0.222) of 4.93% ($0.222 \times 2 \times 100\% = 4.93\%$) means that 4.93% of the variation in environmental sanitation behavior can be explained using the socioeconomic status variable.

The results matched the results of Inah et al. (2017) and Prahlad (2015) which showed that sanitation is greatly influenced by economic status and income, among others.

The relationship between self-efficacy and environmental sanitation behavior was calculated using simple regression analysis. The results of the regression analysis is the formula of $\hat{Y} = 75.525 + 0.184X_3$. The results of the tests are presented in Table 5.

Table 5:- The significance and linearity test on the regression model.

$$\hat{Y} = 75.525 + 0.184X_3$$

Varians	Degree of Freedom	Sum of Squares	Mean Squares	F_{count}	$F_{table \text{ in } \alpha}$	
Total	99				0.05	0.01
Coefficient (a)	1					
Regression (b/a)	1	1,465.084	1,465.084	6.79**	2.70	3.99
Residue	98	21,127.026	215.582			
Error	59	12,073.726	204.639	0.88 ^{ns}	1.68	2.10
	36	9,053.300	232.136			

Note : **p: 0,01 (very significant)ns: non significant

Table 5 shows that there is a very significant relationship between self-efficacy and environmental sanitation behavior. The fact that $F_{count} > F_{table}$ means that the relationship between self-efficacy and environmental sanitation behavior is linear. In other words, the better the self-efficacy, the better the environmental sanitation behavior will be.

The coefficient correlation (which showed the significance of the relationship between self-efficacy and environmental sanitation behavior (r_{y3}) was recorded at 0.255. The results of the test are presented in Table 6.

Table 6:- Significance of Partial Correlation Coefficient ($r_{y3.12}$).

Sample	Correlation coefficient	Second order	t_{count}	$t_{table \text{ in } \alpha}$
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(n)	(zero)	correlation		0.05	0.01
100	0.255	0.229	2.61**	1.66	2.38

The results of t test showed that $t_{count} > t_{table}$ at $\alpha = 0.01$ ($2.61 > 2.38$), meaning that the correlation coefficient between self-efficacy and environmental sanitation behavior is very significant. In other words, there is a very significant and positive relationship between self-efficacy and environmental sanitation behavior.

The coefficient of determinant of the relationship between self-efficacy and environmental sanitation behavior (on the second order correlation of 0.229) of 5.24% ($(0.229)^2 \times 100\% = 5.24\%$) means that 5.24% of the variation in environmental sanitation behavior can be explained using the self-efficacy variable.

The relationship between indigenous knowledge, socioeconomic status, and self-efficacy (simultaneously) with environmental sanitation behavior was calculated using multiple regression analysis. The result of the calculation is the formula of $\hat{Y} = 55.229 + 0.818X_1 + 0.145X_2 + 0.157X_3$. The results of the tests are presented in Table 7.

Table 7:- The significance and linearity test on the regression model.

$$\hat{Y} = 55.229 + 0.818X_1 + 0.145X_2 + 0.157X_3$$

Varians	Degree of Freedom	Sum of Squares	Mean Squares	F _{count}	F _{table in α}	
					0.05	0.01
Total	99					
Regression	3	3,703.110	1,234.370	6.27**	2.70	3.99
Residue	96	18,889.000	196.760			

** $p < 0,01$ (very significant)

Table 7 shows that $F_{count} > F_{table}$, meaning that there is a positive and significant relationship between indigenous knowledge, socioeconomic status, and self-efficacy (simultaneously) with environmental sanitation behavior.

The results of the multiple correlation coefficient analysis for the relationship between indigenous knowledge, socioeconomic status, and self-efficacy (simultaneously) with environmental sanitation behavior are showed in Table 8.

Table 8:- Significance of Multiple Correlation Coefficient ($R_{y,123}$).

Sample (n)	Correlation Coefficient (zero)	Second order correlation	F _{count}	F _{table in α}	
				0.05	0.01
100	0.405	0.164	6.28**	2.70	3.99

** $p < 0,01$

In conclusion, there is a linear and significant relationship between indigenous knowledge, socioeconomic status, self-efficacy and environmental sanitation behavior. In other words, the better those variables, the better the environmental sanitation behavior will be.

The coefficient of determinant of the relationship between indigenous knowledge, socioeconomic status, and self-efficacy (simultaneously) and environmental sanitation behavior (on the second order correlation of 0.164) of 2.69% ($(0.164)^2 \times 100\% = 2.69\%$) means that 2.69% of the variation in environmental sanitation behavior can be explained using the indigenous knowledge, socioeconomic status, and self-efficacy variables (simultaneously).

Conclusion and Recommendation:-

Conclusion:-

The results of the research show that there is a positive and significant relationship between indigenous knowledge, socioeconomic status, and self-efficacy with environmental sanitation behavior. It means that if we want to improve environmental sanitation behavior, those variables must be considered.

Recommendation:-

Further research are needed on variables that did not mentioned in this research, including personality, ethics, and others. In addition, there are other methods that might be worth considering to use, including path analysis, factor analysis dan SEM (Structural Equation Modeling).

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