

Environmental care behavior predictors: an empirical study of senior high school students in Lubuklinggau City

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ABSTRACT

As the environmental issues that occur are increasing, academics and practitioners seek the assistance of the education sector to participate in solving these issues by doing preventive measures. This was done through environmental education that integrates into the curriculum. Unfortunately, the current environmental education is indeed encouraging the students to have pro-environmental behavior, but only at school. Therefore, this article explores the antecedents of environmental behavior characters by proposing the education of environmental care values, teacher role models, peer interaction, reward and punishment, and symbols as variables that influence it. Samples consisted of 337 Senior High School Students in Lubuklinggau City were asked to fill out a questionnaire consisting of 78 statements and were analyzed using SEM-PLS. The results found that all the variables proposed positively affect the environmental care characters and environment. This practically brings consequences that all these factors must be nurtured, preserved, and developed following various eras and of course taking into account the local context.

Key words : Environmental education, Character education, Environmental care characters, Students, Senior high school

Introduction

Recently, various environmental issues that occur in the world have been tried to be discussed and studied in schools from elementary to high school levels using different ways, approaches, and methods (Burt *et al.*, 2019; Tabuenca *et al.*, 2019; Walter, 2009). This is because of an argument which states that intervention through the realm of education is essential to increase awareness and concern about envi-

ronmental issues so that students can learn environmental care behavior and practice it in their daily lives (Kopnina, 2013; Wurjaningrum *et al.*, 2020). At this point, several preconditions were proposed by various academics and practitioners. One of them is about environmental care character which is one of the keys to shape pro-environmental behavior. In several studies, environmental care character was mentioned to have a positive correlation with environmental care behavior (Corrêa and Bassani, 2015;

Fua *et al.*, 2018; Muharlisiani *et al.*, 2019).

Several studies have made the environmental care character as an antecedent of environmental sensitivity, attitudes, awareness, knowledge of environmental problems, and an intention to act in a pro-environmental manner (Handayani *et al.*, 2020; Sartibi *et al.*, 2020). All of them have been evaluated using different instruments. There is no similar measurement tool in studying this matter because the variables are very local and contextual; therefore the theoretical approach used is also different. Unfortunately, the factors that influence the character of environmental care has not yet been fully explored the variables that influence it.

In a study of environmental education, several models have been developed. The most common models found are those who investigate attitudes, intentions, and behaviors discussed from the theory of planned behavior (Gündüz and Aslanova, 2016; Sarsour *et al.*, 2014). In this model, responsible environmental behavior describes an individual's intention to behave to act with a full sense of responsibility towards the environment (Kukkonen *et al.*, 2018; Nurul Aini and Sari Hasibuan, 2020; Sarsour *et al.*, 2014). Another model is those who study environmental sensitivity as a key requirement in building individual behavior to behave and act in a pro-environmental manner (Fergus and Gray, 2014; Kou and Shen, 2014; Shen and Kou, 2014). To study this model, variables such as awareness and environmental knowledge are proposed. Others investigated environmental knowledge as an interdisciplinary knowledge built from the fields of nature, living environment, human ecology, and various other social sciences (Castro *et al.*, 2014; Ni *et al.*, 2018; Walter, 2009).

Move forward from the models developed by previous researchers, this study emphasizes the importance of environmental care character. This is because a character is the psychological, moral, or character traits that differentiate a person from others (character) or good values or characteristic (understand the value of kindness, want to do good deeds or act of kindness, really have a good life, and have a positive impact on the environment) which is embedded in oneself and is embodied in behavior (Fua, Rahma *et al.*, 2018; Muharlisiani *et al.*, 2019; Sartibi *et al.*, 2020). The overall behavioral patterns and abilities that exist in students as a result of the nature of their social environment to determine the pattern of activities in achieving their goals (Corrêa

and Bassani, 2015). In other words, by building character, the environmental education provided in schools will last more sustainably.

Practically, efforts to build the character of environmental care are given continuously through various ways and approaches. The most effective way is through the education of environmental care values (Okudolo and Ojatorotu, 2019; Yozgat and Karatas, 2011). The education of environmental care values is carried out continuously both inside and outside of the classroom. The education of environmental care values has been discussed in many works of literature as an antecedent of the environmental care character (Goldman *et al.*, 2013; Li and Ernst, 2015; Romero Parra, *et al.*, 2013). It is expected that through education of environmental care values, students can be aware of environmental values so that they understand what actions can and should not be done as humans towards the environment.

As the behavior of teachers has been widely studied as a factor in shaping student behavior, this study integrates these variables as forming environmental care character. It is interesting to study the interaction between teachers and students because teachers are the group that interacts the most with students at school (Fua *et al.*, 2018; Kim and Rouse, 2011; Koay, 2014). By behaving pro-environmentally, the teachers are expected to be able to set an example to students, and students are expected to follow the teachers' positive behavior.

Apart from teachers, peer interaction was practically and academically also found to influence student behavior (Adibsereshki *et al.*, 2010; Hutzler *et al.*, 2007; Martinez and Carspecken, 2006). It has been widely discussed in various studies to investigate student behavior in school, exploring what makes them behave and the answer is peer influence. In this context, a peer who has pro-environmental behavior will encourage an individual to also do similar behavior, and therefore investigating the influence of peer interaction with environmental care characters is interesting (Fua, Wekke *et al.*, 2018; Handayani *et al.*, 2020; Muflihaini and Suhartini, 2019).

Efforts to change student's behavior can be predicted by presenting reward and punishment (Wahyudin *et al.*, 2019). Both are often being discussed as factors that motivate the occurrence of the desired behavior. Reward and punishment specifically increase the degree or possibility on which they depend. Therefore, this study uses reward and pun-

ishment as variables that affect the character of environmental care. With reward and punishment, students can get motivated so that they do pro-environmental behavior and get reward and vice versa if they don't, they will get punishment (Juraid *et al.*, 2019).

Symbols containing words and images have also been shown in various studies to influence individual behavior. But, at which point these symbols affect their lowest point or they become meaningless is still a mystery (Hidayati *et al.*, 2020; Rahmawati *et al.*, 2020). However, in particular, many studies reveal that symbols that are manifested in various types of posters containing various forms of persuasion in the form of persuasive words and images can encourage someone to obey or behave as contained in the messages.

Literature Review and Hypothesis Development

The character of Environmental Care

Many environmental problems have been tried to be resolved through various interventions either carried out by the government, society, business sector, or those recently included in the education sector (Fua *et al.*, 2018; Muharlisiani *et al.*, 2019). The government, the public, and the private sector have carried out various interventions both in preventing or controlling environmental problems, and criticism of their activities is about the sustainability of such activities. This encourages the presence of the education sector to put more emphasis on preventive action by instilling environmental education (Jason 2003; Tabuenca *et al.*, 2019; Walter, 2009). This type of method is seen as more sustainable and has a long-term effect because it encourages students to have knowledge, attitudes, and intentions so that eventually they can have pro-environmental behavior such as by doing the 3R's of waste management (reduce, reuse, recycle), water-saving, and so on (Alim and Syamsuddin, 2018; Muharlisiani *et al.*, 2019; Tong *et al.*, 2020). This brings the discussion of environmental issues in environmental education.

Environmental education has been widely observed including in terms of curriculum, lesson content, and student activities at school by directly practicing what they learn (Bahzar, 2019; Goldman *et al.*, 2013; Gouramanis and Morales Ramirez, 2020). Several recent studies have shown that not all of these interventions have succeeded in getting students to have pro-environmental behavior outside of school

because they only do such activities in school to get good grades (Ablak and Ye°ilta°, 2020; Karagiannopoulou *et al.*, 2019; Szczytko *et al.*, 2018). Such criticism brings to a discussion of character education that caring for the environment which is considered more sustainable because character education involves cognitive, emotional, and physical aspects, so that noble character can be measured into a habit of the mind, heart, and hands.

Hypothesis Development

As character education of environmental care is important because it integrates cognitive, emotional, and physical aspects, therefore the goal is more long-term oriented. This study tries to find predictors. The predictors of this study are compiled from various empirical activities conducted by schools and the researchers look for various theoretical and conceptual foundations to formulate hypotheses.

Peer Interaction

By interacting with their peers, students are expected to be able to practice interacting with others, practice controlling their behavior and behavior towards others, develop abilities and skills, and share their feelings and problems to find solutions (Adibsereshki *et al.*, 2010; Bakar *et al.*, 2015; Szczytko *et al.*, 2018). Peer Interaction will provide opportunities for students to show their abilities to others and they will get feedback to evaluate these abilities. Peer interaction has been proven in several studies as the factor that affecting the character of environmental care (Fua, Rahma, *et al.*, 2018; Muharlisiani *et al.*, 2019; Sartibi *et al.*, 2020). In this case, the interaction being discussed is reciprocation between them of actions related to the environment. For this purpose, the researchers formulate a hypothesis:

H₁: Peer interactions have a significant and positive effect on the character of environmental care

Reward and punishment

As humans beings are opportunistic, rewards, and punishments guide their behavior. Rewards and punishment in some respects have been recognized as being able to encourage a person's behavior to follow the behavior that should be applied (Wahyudin *et al.*, 2019). In education, reward and punishment are often integrated into various ways to motivate students to perform certain behaviors (Bopp *et al.*, 2019; Noppakroh *et al.*, 2012). As rewards and punishments have been recognized in

several studies affecting the character of environmental care, this study formulates a hypothesis:

H₂: Reward and punishment have a positive and significant effect on the character of environmental care

Symbols

Symbols have been practically used to influence a person's behavior and have been academically proven in many studies (Corrêa and Bassani, 2015; Muharlisiani *et al.*, 2019). The symbols are manifested in various environmental care messages conveyed through the medium of posters placed in the school environment. In general, symbols contain a persuasive message to do or not do something which in this context is that activities caring for the environment are permissible and activities that damage the environment are unacceptable. Based on this the researchers formulate a hypothesis:

H₃: Symbols have a positive and significant effect on the character of environmental care

Education of environmental care values

This activity is a series of planned activities conducted by schools to develop a character of environmental care either integrated into subjects or monolithically through learning programs outside of the classroom (Goldman *et al.*, 2013; Li and Ernst, 2015; Pamela *et al.*, 2019). The education is intended to obtain a comprehensive understanding of the activities that are allowed and not allowed to be carried out to contribute to various environmental issues. Such education has been practically done many times and academically has been proven to influence the students' character of environmental care (Muflihaini and Suhartini, 2019; Muharlisiani *et al.*, 2019). Therefore, the researchers formulate a hypothesis:

H₄: The education of environmental care values have a positive and significant effect on the character of environmental care

Teacher Role Model

Teacher role models or examples have been widely explored in previous research as a factor affecting student morale, behavior, and character in various cases (Kim and Rouse, 2011; Koay, 2014; Rahmawati *et al.*, 2020). The teacher role model is the behavior of the teacher who shows a caring attitude, whether intentional or not. Exemplary comes from a human imitation of another human being who is considered

better (excellent model or example). The imitation process lasts a lifetime. In the realm of education, exemplary attaches to teachers because they serve as educators. In education, an example of exemplary is a form of behavior and attitudes of teachers who provide good examples to students. Therefore, the researchers formulate a hypothesis:

H₅: Teacher role models have a positive and significant effect on the character of environmental care values

Materials and Methods

Based on the research objectives to be achieved, the researchers used a quantitative research design. Considering the various types, characteristics, and variables that this research employed using the Structural-Equation Model Partial Least Square (SEM-PLS) (Hair *et al.*, 2012; Hair *et al.*, 2013). This study aimed to explore the antecedents of the character of environmental care of high school students. Therefore, the unit of analysis in this study is an individual.

In this measurement, the concern is that there is a close similarity between the social reality under study and the value obtained from the measurement of these variables. Therefore, a measurement instrument of the variable is considered suitable if the results obtained can reflect accurately the reality of the phenomenon to be measured. As explained above; therefore, the limitation and measurement of the variables to be analyzed in this study were conducted, which consisted of education of environmental care values (SI), teacher role models (TG), peer interaction (IT), reward and punishment (RP), symbols (SS) and environmental care characters (KPL). The question items are derived from these five variables and each item is provided with five choices of answer from strongly agree (5), agree (4), neither agree nor disagree (3), disagree (2), and strongly disagree (1).

The population in this study were 9 high school level public schools in Lubuklinggau City. The number of students from all schools was 5,634 people. The sample size is calculated using the Slovin formula and obtained a sample of 373 people. The sample is spread across all schools proportionally as follows.

This study used the purposive sampling technique. The sample only consisted of 11th and 12th-grade students. This decision was taken based on

Table 1. Research Samples

School Name	Number of Students	Percentage	Number of Samples
SMAN 1 Lubuklinggau	1.045	19%	69
SMAN 2 Lubuklinggau	944	17%	63
SMAN 3 Lubuklinggau	793	14%	53
SMAN 4 Lubuklinggau	743	13%	49
SMAN 5 Lubuklinggau	759	13%	50
SMAN 6 Lubuklinggau	504	9%	33
SMAN 7 Lubuklinggau	241	4%	16
SMAN 8 Lubuklinggau	361	6%	24
SMAN 9 Lubuklinggau	244	4%	16
JUMLAH	5.634	100%	373

Source: Processed by researchers, 2020.

the assumption that 10th students are still familiarizing themselves with the high school experience. Therefore, their knowledge of environmental education patterns was deemed not good enough.

The quantitative data analysis technique used in this study was PLS-SEM. Data calculation using this technique is conducted using the help of computer software. The result of the analysis using SEM technology is a good environmental education model. Structural Equation Modeling is an inferential statistical analysis used to map the relationship between latent variables.

Discriminant validity is a test to ensure that each concept of each latent variable is different from other variables. The test of discriminant validity uses the criteria presented by Fornell-Larcker and cross-loading. Fornell-Larcker is said to have passed discriminant validity if the square root value of AVE for the latent variable is higher than the correlation value between the latent variable and other latent variables. Meanwhile, cross-loading is said to have passed discriminant validity if the indicator measuring the correlation variable must be greater than the correlation between the indicator and other variables. After testing the validity of convergent validity and discriminant validity and declared that it has passed the test, then a reliability test must be conducted. The reliability test was conducted to test the statement on each indicator item whether it was reliable or not in the field. The reliability test was conducted by looking at the composite reliability and Cronbach's alpha values on the construct reliability and validity menu in the Smart PLS 3 program. According to J. Hair *et al.* (2013), this reliability test is said to have passed or met the criteria for reliability if the composite reliability and Cronbach's alpha

values are above 0.7.

A further step is the evolution of the structural model, which is a hypothesis testing or more commonly referred to as the Inner model test (Sarwono dan Narwati, 2015:72). From the hypothesis that has been determined in the study, the results will be known through testing whether the hypothesis is accepted or rejected. According to Bangun (2020), the inner model test is conducted with several tests, namely as follows:

a. R-Square

This R-Square test is used to see how big the effect of exogenous variables on endogenous variables, the R-square value is only owned by endogenous variables. In this study, the R-Square value can be seen in the environmental care characters (KPL) variable.

b. Path Coefficient

The value in the path coefficient test is the value used to show the direction of the relationship between exogenous variables and endogenous variables, whether it has a positive or negative relationship. The path coefficient is in the range of -1 to 1 which means that if the path coefficient value <0 , it indicates the direction of the negative relationships and vice versa if the path coefficient value >0 which means that it shows the direction of the positive relationship.

c. Significance test of direct effect

The significance test of direct effect can be seen at the P-value to see whether exogenous variables significantly affect endogenous variables. If the P-Value <0.05 , it means that the exogenous variables significantly affect the endogenous variables, and

vice versa, if the p-value is > 0.05 , there is no significant effect on the effect of the two variables.

Results

Respondent Demographics

The characteristics of the respondents in this study were based on chapter three that had been predetermined. Where the sampling used purposive sampling technique, namely the 11th and 12th-grade students that spread across 9 public high schools in Lubuklinggau City. Data were collected by distributing questionnaires. The total number of respondents who filled out the questionnaire was 373 respondents.

Characteristics of Respondents Based on Research Objects

Respondents based on the research object in this study consisted of 9 public high schools in Lubuklinggau City. The following is the data of the respondent based on the research object.

Based on the table, this study chose 9 public high schools in Lubuklinggau City with a population of 5634 people with a sample taken from these high schools as many as 373 people.

Structural Equation Model Partial Least Square

In this study, there are 78 question item indicators on the questionnaire, and the resulting data is not normally distributed. Therefore, this study using Partial Least Squares SEM (PLS-SEM) analysis tool. PLS-SEM calculations in this study use the SmartPLS 3 application to test the Evolution of Measurement Model and Evolution of Structural Model, the following are the results of the two tests:

Evolution of Measurement Model

Validity Test

1. Convergent Validity

a. Loading Factor

The loading factor is a value generated by each indicator to measure the variable. The value of the loading factor is said to be valid if each indicator has a value of more than 0.7. The following are the results of the loading factor test:

It can be seen from the table that all indicators or question items on the questionnaire, which consisted of 78 items have a value above 0.7. It means that all indicators in each variable can be said to be valid or have value in measuring variables.

b. AVE (Average Variance Extracted)

The AVE value (Average Variance Extracted) is the value that each variable has. The AVE value is said to be valid if the value is more than 0.5. The following are the results of the AVE value for each variable:

From the results of the calculation of the AVE value for each variable, it can be seen that the ave SO, TG, IT, RP, and SI values are above 0.5, that is, they have an average value of 0.7. It means that all variables in the study passed the validity test according to the AVE value.

2. Discriminant Validity

a. Fornell-Larcker

Fornell-Larcker is the square root value of the AVE value for latent variables which is higher than the correlation value between these latent variables and

Table 2. Respondents Based on Research Objects

School Name	Number of Students	Study Group	Percentage	Number of samples
SMAN 1	1045	30	19%	69
SMAN 2	944	28	17%	62
SMAN 3	793	25	14%	53
SMAN 4	743	24	13%	49
SMAN 5	759	24	13%	50
SMAN 6	504	20	9%	33
SMAN 7	241	11	4%	16
SMAN 8	361	15	6%	24
SMAN 9	244	11	4%	16
TOTAL	5634		100%	373

Source: School Administration, 2019

other latent variables. The following are the results of the Fornell-Larcker test:

It can be seen from the table that the AVE squared value of each latent variable is greater than the correlation value between these latent variables and other latent variables. For more details, it can be described as follows: The value of IT to IT is greater than the value of IT against KPL, RP, SI, SO, and TG, the value of KPL to KPL itself is greater than the value of KPL against IT, RP, SI, SO and TG, the value of the RP to the RP itself is greater than the value of the RP against IT, KPL, SI, SO and TG, the value of SI to SI itself is greater than the value of SI against IT, KPL, RP, SO and TG, the value of SO to SO itself is greater than the value of SO against IT, KPL, RP, SI and TG, and the value of TG to TG itself is greater than the value of TG against IT, KPL, RP, SI and SO

b. Cross Loading

Cross loading is a test of the indicator value that measures the variable and the value of the indicator against other variables. The cross-loading value is

Table 3. Loading Factor

	IT	KPL	RP	SI	SO	TG					
IT1	0.870	KPL1	0.885	RP1	0.850	SI1	0.891	SO1	0.902	TG1	0.841
IT2	0.857	KPL2	0.887	RP2	0.800	SI2	0.854	SO2	0.899	TG2	0.865
IT3	0.895	KPL3	0.886	RP3	0.853	SI3	0.889	SO3	0.831	TG3	0.766
IT4	0.898	KPL4	0.842	RP4	0.887	SI4	0.843	SO4	0.715	TG4	0.752
IT5	0.777	KPL5	0.901	RP5	0.913	SI5	0.910	SO5	0.866	TG5	0.807
IT6	0.826	KPL6	0.906	RP6	0.867	SI6	0.852	SO6	0.832	TG6	0.712
IT7	0.733	KPL7	0.908	RP7	0.834	SI7	0.889	SO7	0.894	TG7	0.886
IT8	0.895	KPL8	0.864	RP8	0.856	SI8	0.900	SO8	0.904	TG8	0.875
IT9	0.914	KPL9	0.864	RP9	0.840	SI9	0.899	SO9	0.862	TG9	0.902
IT10	0.816	KPL10	0.914	RP10	0.736	SI10	0.895	SO10	0.833	TG10	0.907
		KPL11	0.740	RP11	0.817	SI11	0.721			TG11	0.899
		KPL12	0.769								
		KPL13	0.705								
		KPL14	0.776								
		KPL15	0.913								
		KPL16	0.865								
		KPL17	0.833								
		KPL18	0.901								
		KPL19	0.891								
		KPL20	0.865								
		KPL21	0.810								
		KPL22	0.842								
		KPL23	0.911								
		KPL24	0.800								
		KPL25	0.898								

Source: Processed by researchers, 2020.

said to have passed the discriminant validity test if the correlation value between the indicators against the variables must be greater than the correlation value of the indicator against other variables. The results of the cross-loading test are as follows:

From the results of the cross-loading value, it can be seen that the value of each indicator against its own variable is greater than the value of each indicator against other variables. From the results of the cross-loading, it can be concluded that all indicators in the study passed the discriminant validity test.

Reliability Test

The reliability test is a test that is conducted to test

Table 4. AVE Value (*Average Variance Extracted*)

	Average Variance Extracted (AVE)
IT	0.723
KPL	0.734
RP	0.710
SI	0.755
SO	0.732
TG	0.706

Source: Processed by researchers, 2020.

Table 5. Fornell-Larcker Test

	IT	KPL	RP	SI	SO	TG
IT	0.850					
KPL	0.727	0.857				
RP	0.633	0.743	0.842			
SI	0.561	0.696	0.535	0.869		
SO	0.701	0.821	0.672	0.658	0.855	
TG	0.678	0.779	0.619	0.607	0.764	0.840

the statement on each item of indicator on the variable whether the statement in the questionnaire of this study is reliable or not. This reliability test is said to have passed if the Cronbach's alpha and composite reliability values are above 0.7. The following are the results of reliability testing on SmartPLS 3:

It can be seen from the results of data processing on SmartPLS 3 above that Cronbach's alpha value and composite reliability on each variable is above 0.7 with an average value of 0.9. It means that all SO,

TG, IT, RP, SI and KPL variables all pass the reliability test.

Evolution of Structural Model

In this study, the evolution of the structural model test was conducted on a model that was made to see the R-Square of endogenous variables, the path coefficient value, and the significance value of the direct effect. The following is the figure of a path diagram that has passed the validity and reliability test that will be tested for the Evolution of the structural model:

A. R-Square

The R-Square test is used to see how big is the effect of exogenous variables as a whole have on endogenous variables. The results of this R-square value will be multiplied by 100 to see the percentage of the effect. The following is the result of the R-square value:

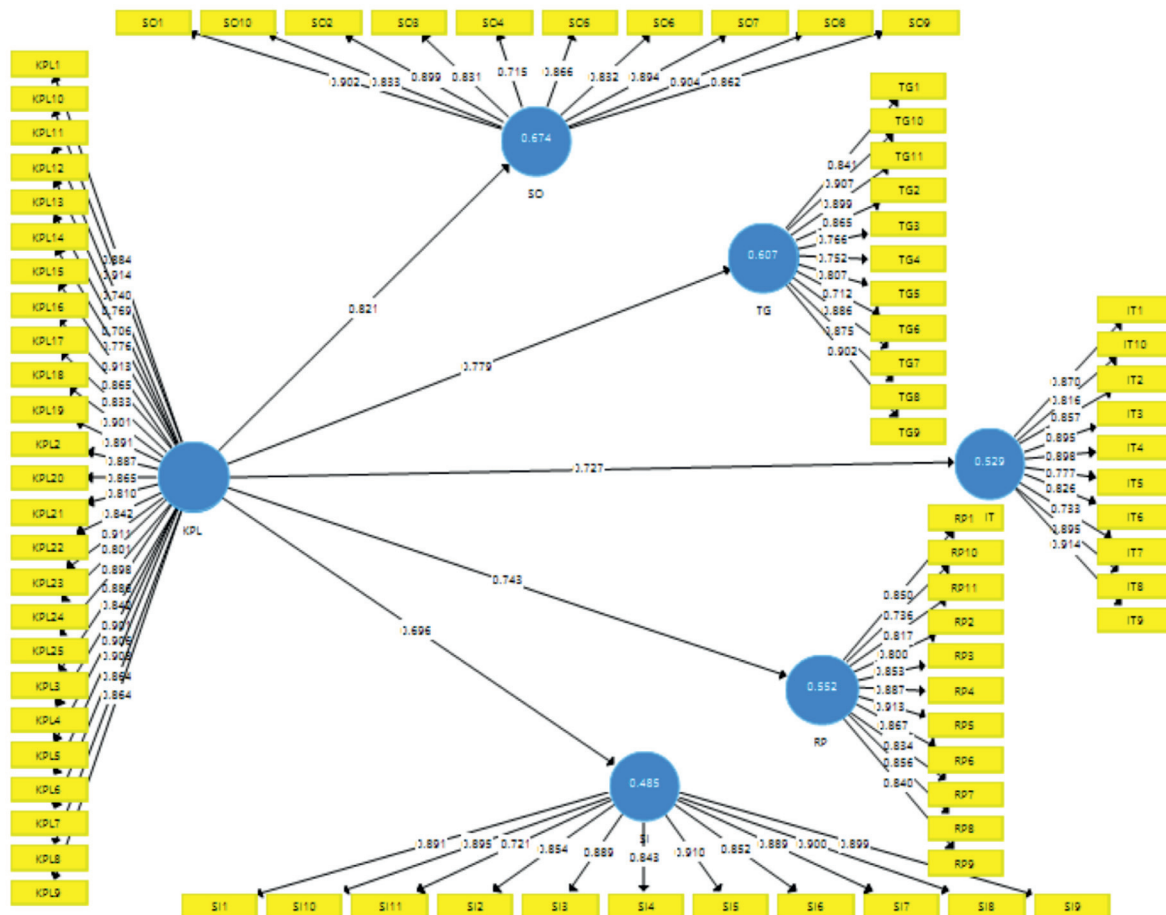


Fig. 1. Path Diagram

Source: Processed by researchers, 2020.

Table 6. Cross Loading Value

	IT	KPL	RP	SI	SO	TG
IT1	0,870	0,557	0,488	0,440	0,537	0,542
IT10	0,816	0,551	0,489	0,418	0,522	0,504
IT2	0,857	0,583	0,506	0,465	0,558	0,550
IT3	0,895	0,663	0,563	0,479	0,640	0,611
IT4	0,898	0,721	0,602	0,553	0,696	0,667
IT5	0,777	0,543	0,524	0,471	0,554	0,540
IT6	0,826	0,574	0,535	0,399	0,550	0,540
IT7	0,733	0,524	0,430	0,426	0,502	0,475
IT8	0,895	0,694	0,615	0,538	0,679	0,656
IT9	0,914	0,712	0,589	0,546	0,665	0,634
KPL1	0,639	0,885	0,648	0,631	0,748	0,700
KPL10	0,660	0,914	0,694	0,630	0,772	0,726
KPL11	0,573	0,740	0,545	0,568	0,600	0,604
KPL12	0,498	0,769	0,569	0,530	0,588	0,553
KPL13	0,539	0,705	0,506	0,580	0,556	0,606
KPL14	0,540	0,776	0,547	0,555	0,636	0,614
KPL15	0,680	0,913	0,684	0,630	0,772	0,725
KPL16	0,627	0,865	0,604	0,592	0,692	0,691
KPL17	0,604	0,833	0,590	0,602	0,684	0,630
KPL18	0,655	0,901	0,666	0,599	0,722	0,672
KPL19	0,648	0,891	0,680	0,634	0,758	0,712
KPL2	0,671	0,887	0,671	0,612	0,775	0,709
KPL20	0,667	0,865	0,689	0,619	0,728	0,672
KPL21	0,554	0,810	0,624	0,536	0,626	0,573
KPL22	0,596	0,842	0,632	0,557	0,697	0,656
KPL23	0,656	0,911	0,702	0,599	0,756	0,666
KPL24	0,599	0,800	0,577	0,567	0,673	0,635
KPL25	0,638	0,898	0,674	0,623	0,751	0,693
KPL3	0,658	0,886	0,685	0,587	0,726	0,719
KPL4	0,621	0,842	0,628	0,576	0,649	0,647
KPL5	0,641	0,901	0,648	0,608	0,726	0,679
KPL6	0,644	0,906	0,661	0,628	0,716	0,683
KPL7	0,645	0,908	0,667	0,616	0,741	0,706
KPL8	0,631	0,864	0,634	0,588	0,707	0,661
KPL9	0,652	0,864	0,643	0,633	0,723	0,721
RP1	0,493	0,593	0,850	0,428	0,550	0,484
RP10	0,513	0,547	0,736	0,445	0,559	0,511
RP11	0,530	0,609	0,817	0,452	0,599	0,530
RP2	0,474	0,565	0,800	0,375	0,514	0,435
RP3	0,529	0,634	0,853	0,454	0,602	0,508
RP4	0,592	0,726	0,887	0,490	0,639	0,572
RP5	0,576	0,731	0,913	0,531	0,655	0,588
RP6	0,540	0,632	0,867	0,454	0,539	0,542
RP7	0,488	0,569	0,834	0,385	0,472	0,487
RP8	0,552	0,640	0,856	0,460	0,550	0,531
RP9	0,561	0,598	0,840	0,463	0,520	0,525
SI1	0,456	0,604	0,470	0,891	0,545	0,490
SI10	0,522	0,687	0,504	0,895	0,629	0,613
SI11	0,424	0,427	0,348	0,721	0,460	0,414
SI2	0,432	0,563	0,432	0,854	0,527	0,462
SI3	0,469	0,594	0,468	0,889	0,571	0,539
SI4	0,478	0,533	0,426	0,843	0,546	0,506
SI5	0,577	0,706	0,542	0,910	0,650	0,601

Table 6. *Continued ...*

	IT	KPL	RP	SI	SO	TG
SI6	0,454	0,567	0,410	0,852	0,530	0,506
SI7	0,439	0,599	0,446	0,889	0,547	0,498
SI8	0,511	0,616	0,480	0,900	0,586	0,537
SI9	0,572	0,687	0,538	0,899	0,652	0,589
SO1	0,566	0,731	0,578	0,592	0,902	0,667
SO10	0,630	0,677	0,548	0,561	0,833	0,624
SO2	0,612	0,769	0,617	0,628	0,899	0,718
SO3	0,562	0,644	0,522	0,564	0,831	0,630
SO4	0,523	0,532	0,461	0,500	0,715	0,550
SO5	0,586	0,725	0,580	0,527	0,866	0,654
SO6	0,594	0,656	0,557	0,503	0,832	0,618
SO7	0,594	0,734	0,585	0,580	0,894	0,672
SO8	0,656	0,793	0,667	0,572	0,904	0,707
SO9	0,665	0,717	0,603	0,595	0,862	0,672
TG1	0,555	0,646	0,536	0,449	0,635	0,841
TG10	0,645	0,776	0,593	0,559	0,725	0,907
TG11	0,619	0,736	0,579	0,562	0,708	0,899
TG2	0,583	0,684	0,543	0,514	0,664	0,865
TG3	0,527	0,554	0,434	0,457	0,534	0,766
TG4	0,527	0,552	0,484	0,524	0,595	0,752
TG5	0,564	0,604	0,494	0,533	0,617	0,807
TG6	0,442	0,451	0,403	0,443	0,513	0,712
TG7	0,552	0,695	0,504	0,510	0,661	0,886
TG8	0,570	0,662	0,521	0,483	0,615	0,875
TG9	0,648	0,748	0,584	0,569	0,740	0,902

Source: Processed by researchers, 2020.

Table 7. *Construct Reliability*

	Cronbach's Alpha	Composite Reliability
IT	0.957	0.963
KPL	0.985	0.986
RP	0.959	0.964
SI	0.967	0.971
SO	0.959	0.964
TG	0.958	0.963

Source: Processed by researchers, 2020.

Table 8. *R-square Value*

	R Square
KPL	0.799

Source: Processed by researchers, 2020.

Based on the table, it can be seen the R-square value in the model in this study. Based on the analysis of the two tables above, it can be described as follows: KPL is influenced by SO, TG, IT, RP, and SI, then obtained the R-Square value of 0.799. It means the

character of environmental care is influenced by the education of environmental care values, teacher role models, peer interaction, reward and punishment, and symbols by 79.9%.

B. Path Coefficient

Path coefficient is an analysis used to show the direction of the relationship between exogenous variables and endogenous variables. In this study, the path coefficient was tested on both models. The results of the path coefficient test in this study are as follows:

Table 9. *Path Coefficient*

	KPL
IT	0.127
RP	0.240
SI	0.173
SO	0.291
TG	0.217
KPL	

Source: Processed by researchers, 2020.

Table 10. Significance Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
IT → KPL	0.127	0.124	0.049	2.584	0.010
RP → KPL	0.240	0.248	0.063	3.835	0.000
SI → KPL	0.173	0.173	0.048	3.586	0.000
SO → KPL	0.291	0.288	0.070	4.178	0.000
TG → KPL	0.217	0.213	0.058	3.722	0.000

Source: Processed by researchers, 2020.

Based on the table, can be seen the path coefficient value in the model in this study. Based on the analysis of the two tables above, it can be described as follows: IT, RP, SI, SO, TG variables have a path coefficient of value above zero on the KPL variable. It can be concluded that peer interaction, reward and punishment, symbols, education of environmental care values, and teacher role models have a positive effect on the environmental care character variables

C. Significance Test of Direct Effect/Hypothesis Testing

In this study, the significance test of the direct effect is to test the hypothesis of whether the hypotheses are rejected or accepted. Tests are conducted on the model to see the P-value of exogenous variables on endogenous variables. The exogenous variable is said to have a significant effect if the P-value is below 0.05. The following are the results of the significance test for the research model:

Based on the table of the model of significance test above, it can be concluded that:

1. Peer interaction has a positive and significant effect on the character of environmental care with a P-value of 0.010
2. Reward and punishment have a positive and significant effect on the character of environmental care with a P-value of 0.000
3. Symbols have a positive and significant effect on environmental the character of environmental care with a P-value of 0.000
4. Education of environmental care values have a positive and significant effect on the character of environmental care with a P-value of 0.000
5. Teacher role models have a positive and significant effect on the character of environmental care with a P-value of 0.000

Discussion

The objective of this study was to explore the antecedents of the character of environmental care by proposing peer interaction, reward and punishment, symbols, education of environmental care values, and teacher role models variables. This research was conducted due to criticism toward the environmental education model which has been unsustainable so far, to encourage discussion about the importance of environmental care characters to be internalized to students. Therefore, the students are able to love, care, and have a sense of awareness of the environment not only at school but also outside of school in real life.

The results of the study show that from the five variables that have been proposed, all of them are positive and significant for the character of environmental care. In more detail, the researchers found that peer interaction has a positive and significant effect on the character of environmental care. Peer interaction provides an opportunity for students to show their abilities to others and they will get feedback to evaluate these abilities. Peer interaction has been proven in several studies to be a factor influencing the character of environmental care consistent with the results of this study (Burt *et al.*, 2019; Szczytko *et al.*, 2018).

Reward and punishment were also found to have a positive and significant effect on the character of environmental care. In association with environmental education, reward and punishment are often integrated into various ways to motivate students to engage in environmental care behavior and avoid environmentally destructive behavior. This is in line with previous studies which found that rewards and punishments affect the character of environmental care (Fua, Rahma *et al.*, 2018; Fua, Wekke *et al.*, 2018; Muharlisiani *et al.*, 2019).

Similar to the previous studies, symbols have a positive and significant effect on the character of environmental care. Symbols that are manifested in various environmental care messages conveyed to students through the medium of posters placed in the school environment have been shown to positively and significantly shape the character of environmental care (Corrêa and Bassani, 2015; Sartibi *et al.*, 2020).

Furthermore, the extension education of environmental care values was found to have a positive and significant effect on the character of environmental care. The extension education was conducted to obtain a deep understanding of the activities that are allowed and not allowed to contribute to various environmental issues which in this study affects the character of environmental care. This is in line with various previous studies (Muflihaini and Suhartini, 2019; Sumarmi *et al.*, 2019).

Lastly, teacher role models also have a positive and significant effect on the character of environmental care. As the teacher role models have been explored in previous studies as a factor that influences the morale, behavior, and character of students in various cases, this study found that the teacher role model affects the character of environmental care. In the realm of education, an exemplary attaches to the teacher because they serve as educators. In education, an example of exemplary is a form of teachers' behavior and attitudes to provide good examples to students (Kim and Rouse, 2011; Koay, 2014; Rahmawati *et al.*, 2020).

Conclusion and Implications

Due to the criticism toward environmental education which affects pro-environmental behavior among students only when they are in school, this study highlights the importance of instilling character of environmental care to make pro-environmental behavior more sustainable to be applied both inside and outside of school. For this reason, this study explores the antecedents of the character of environmental care by proposing peer interaction, reward and punishment, symbols, education of environmental care values, and teacher role models variables. All of the variables proposed have a positive and significant effect on the character of environmental care.

The research findings have an academic consequence that the character of environmental care is

formed by various variables in this study. Meanwhile, because all variables have a positive and significant effect, practically, all factors must be nurtured to achieve the character of environmental care. Furthermore, everything must be carried out together and in line, also developed by taking into account the local context.

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