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Uluslararası Sosyal ve Beşeri Bilimler Araştırma Dergisi

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DOES SUSTAINABLE LEADERSHIP HAVE A MEDIATING ROLE IN THE RELATIONSHIP BETWEEN TEACHERS' ENVIRONMENTAL IDENTITY AND ENVIRONMENTAL ATTITUDE?

ÖĞRETMENLERİN ÇEVRE KİMLİĞİ VE ÇEVRESEL TUTUMU ARASINDAKİ İLİŞKİDE SÜRDÜRÜLEBİLİR LİDERLİĞİN ARACILIK ROLÜ VAR MIDIR?

ABSTRACT

The objective of this study is to investigate whether sustainable leadership has a mediating role in the relationship between teachers' environmental identity and environmental attitude. For this purpose, the data were gathered through surveys from 449 different branch teachers working in public schools. The survey items include demographic information questions, Environmental Identity Scale, Environmental Attitude Scale, and Sustainable Leadership Scale. The data were analyzed by SPSS 24.0 and SmartPLS 3.3.3 programs. Whereas frequency analysis was used to determine demographic characteristics of the data, the Partial Least Squares Structural Equation Modeling (PLS-SEM) method was used to examine the relationships among the variables and the mediating role. According to the results of the study, there were relationships among environmental identity, environmental attitude, and sustainable leadership. However, the mediating role of sustainable leadership could not be confirmed.
Keywords: Environmental Identity, Environmental Attitude, Sustainable Leadership.

ÖZET

Bu çalışmanın amacı öğretmenlerin çevre kimliği ile çevresel tutumu arasındaki ilişkide sürdürülebilir liderliğin aracılık rolü olup olmadığını saptamaktır. Bu amaçla, devlet okullarında görev yapan 449 farklı branş öğretmeninden anket yoluyla veri toplanmıştır. Anket maddeleri demografik bilgi soruları, Çevre Kimliği Ölçeği, Çevresel Tutum Ölçeği ve Sürdürülebilir Liderlik Ölçeği içermektedir. Veriler SPSS 24.0 ve SmartPLS 3.3.3 programları ile analiz edilmiştir. Verilerin demografik özelliklerini belirlemek için frekans analizi, değişkenler arasındaki ilişkileri ve aracılık rolünü incelemek için Kısmi En Küçük Kareler Yapısal Eşitlik Modellemesi (PLS-SEM) yöntemi kullanılmıştır. Araştırmanın sonuçlarına göre, çevre kimliği, çevresel tutum ve sürdürülebilir liderlik arasında ilişkiler vardır. Bununla birlikte, sürdürülebilir liderliğin aracılık rolü teyit edilememiştir.
Anahtar Kelimeler: Çevre Kimliği, Çevresel Tutum, Sürdürülebilir Liderlik.

1.   INTRODUCTION

The increase in human population, the rapid and destructive development of industry and technology with the period of industry 4.0 have caused environmental damage and environmental problems in the world. Although it is seen that environmental problems are mostly an industrial and technological issue, it is partly an attitudinal and behavioral issue as well. The immediate or potential utility of the natural environment has led it to be seen as valuable by the people (Clayton & Opotow, 2003: 4). Since people have started to value the environment, this value has given an insight to identity, attitudes, behaviors, ideas, personal and professional lives related to the environment. This awareness has helped people to concentrate more attention on the way that they care about environmental issues (Clayton, 2012; Efe & Baran, 2017). Adopting an environmentally sensitive living area depends on the change of behavior and this change occurs through various factors that support environmental knowledge such as environmental identity (Kızılay & Önal, 2019: 272). Environmental identity refers to the aspect of an individual's identity that covers his or her relationship with nature and shows the ways in which people orient themselves and are oriented towards the natural world (Clayton & Opotow, 2003: 2; Young, Conner & Pettit, 2020: 3050). Environmental identity meets the meaning that an environmentally friendly person is someone who is described by environmentalism in the cultural environment (Kashima, Paladino & Margetts, 2014: 64). According to Schultz and Tabanico (2007: 1221) environmental identity is essentially the belief for people that the natural environment in which they live is an important part of who they are. According to Nisbet, Zelenski and Murphy (2009), environmental identity shows an individual's relationship and loyalty to the environment. Thus, it is possible for people to reduce and prevent environmental problems by sharing a common environmental identity. The late realization of environmental problems has delayed the emergence of an environmental identity by the society (Öztarakçı, 2019: 18). With the recognition of environmental identity, it was observed that environmental identity plays an important role in learning and school (Tugurian & Carrier, 2017). It supports the learning and knowledge for people to adopt an environmentally friendly way of life. While doing this, it fills the gap between knowledge and behavior through factors such as belief, value and attitude (Önal, Kılınç & Saraçoğlu, 2020: 750). In the published literature, there is a consensus on the decision that environmental identity has a higher correlation with and is a better predictive factor of environmental behavior in comparison to environmental attitude (Blatt, 2013; Clayton, 2003; Kempton & Holland, 2003; Stapleton, 2015; Stets & Biga, 2003). Here, environmental attitude is seen as one's object that is either the natural environment itself or behavior towards conservation (Kaiser, Oerke & Bogner, 2007: 243). Within a broader sense, it is such a collection that includes beliefs, affect, and behavioral intentions of an individual who possesses them regarding the environment (Milfont & Duckitt, 2004). According to Erten (2005: 91), environmental attitude is all the positive and negative attitudes and thoughts of people caused by environmental problems such as fear, anger, anxiety, value judgements, and readiness to solve environmental problems towards environmentally friendly behaviors. Individuals' experiences of nature and environmental education are effective in forming their attitude towards the environment (Tanık Önal & Büyük, 2018). Singh and Gupta (2013) suggested that improving environmental attitude was seen as one of the important steps in achieving a sustainable environment. To achieve a sustainable environment, Larijani and Yeshodhara (2008) set strategies for an education system that can change teachers' environmental attitudes in a favorable way. These strategies include encouraging teachers to help with the development of environmental issues, supporting teachers to participate in seminars and conferences related to discussions of environmental problems, providing courses and programs about environmental education to teachers and making studies related to the environment in a curriculum that covers all levels of education. Teachers can help students to connect their lives with others. Thus, teachers can strengthen students to be aware of their own power and support them to take steps in the direction of changing the world in a positive way. Specifically, Hargreaves and Fink (2012) stated that sustainable leadership is one of the key forces that help to achieve long-term changes and continuity. The concept of sustainable leadership has arisen since using the terms sustainability and leadership together (Nartgün, Limon & Dilekçi, 2020: 142). It was developed during the 1980s, based on sustainability literature in the field of environment, as alarms were increased about human impacts on the world (Cherkowski, 2010: 26). Sustainable leadership is related not only leader's role in profit maximization but also his or her ability to manage human resources in relation to the environment, society, and long-term development objectives (Mukherjee, 2020: 8). It is the ability to transfer resources to the future by protecting and improving values (Yollu, 2017: 14). Hargreaves and Fink (2012) outline the seven principles for sustainable leadership under main concepts based on educational change. These concepts are depth (sustainable leadership matters), length (how

long sustainable leadership lasts), breadth (how widely sustainable leadership spreads), justice (sustainable leadership contributes rather than gives harm to the environment), diversity (sustainable leadership provides environmental diversity), resourcefulness (sustainable leadership improves resources and does not destroy them) and conservation (sustainable leadership learns from the advances of the past and transforms itself for a better future). When the published literature is reviewed, it is seen that studies, which investigate teachers' environmental identity (Gkargkavouzi, Paraskevopoulos & Matsiori, 2018; Kızılay & Önal, 2019; Önal et al., 2020; Öztarakçı, 2019; Pektaş & Şentürk, 2020; Rathore, Eames & Kelly-Ware, 2020; Saraç & Sarıkaya, 2020) and environmental attitude (Arık & Yılmaz, 2017; Artvinli, Aydın & Terzi, 2019; Aznar-Diaz, Hinojo-Lucena, Caceres-Reche, Trujillo-Torres & Romero-Rodriguez, 2019; Efe & Baran, 2017; Esa, 2010; Lahiri, 2011; Larijani & Yeshodhara, 2008; Rao & Suribabu, 2018; Şama, 2003; Saraç & Kan, 2015; Shobeiri, Omidvar & Prahallada, 2006; Tanık Önal & Büyük, 2018) were conducted mostly on teacher candidates rather than experienced teachers. These studies in the published literature demonstrate that teacher candidates' and teachers' environmental identity and environmental attitude were related to different variables but ignored the concept that has not been studied so far, and that is sustainable leadership. Although there is great concern about sustainable leadership based on educational organizations in the literature (Agsonsua, Kositpimanwech & Yuenyong, 2019; Chaudhry, Ahmed & Noureen, 2020; Cherkowski, 2010; Goolamally & Ahmad, 2014; Hardie, 2015; Hargreaves & Fink, 2003, 2012; Nartgün et al., 2020; Paweenwat, Dhammopissamai & Suwannoi, 2019; Williams, 2013; Yaakob et al., 2020; Yollu, 2017). This concern has not yet been seen in the context of environmental approaches. Furthermore, there is no study in the published literature that examines teachers' environmental identity and environmental attitude via the mediating role of sustainable leadership. Therefore, this study aims to investigate the mediating role of sustainable leadership on the relationship between teachers' environmental identity and environmental attitude. Through this study, it is believed that the current gap in the published literature based on this subject will be removed. Since the reduction and prevention of environmental problems are mostly based on future generations' environmental awareness (Phenice & Griffore, 2003), these generations should learn about the natural world and show their positive perspectives, attitudes and actions about the environment in early school years (Wilson, 1996). Taking into consideration these views, it is clear that teachers have an essential role to provide their students with needed knowledge, skills, attitudes and values in order to help students to become environmentally conscious individuals. In other words, teachers have the privilege to educate individuals that will become parents, professionals, doctors, lawyers, laborers, leaders and even teachers of the future's world (Lahiri, 2011: 39). Even though the initiatives of teachers are not mostly recognized in the world, teachers are one of the hopes for creating environmentally conscious societies. Hence, this study put forward its importance in this context.

2. MATERIALS AND METHODS

2.1. Research Model and Hypotheses

The mediation model of this study is illustrated in Figure 1 below. The research model below was developed to show whether or not sustainable leadership has a mediating role in the relationship between teachers' environmental identity and environmental attitude.
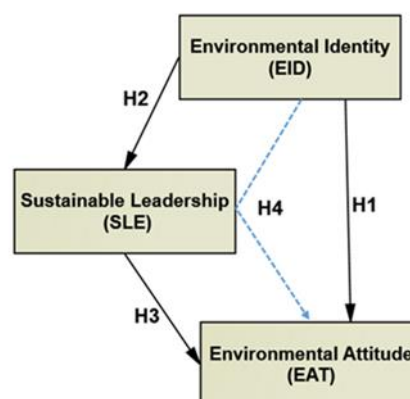

Figure 1. Research model

The hypotheses developed within the research model are as follows:

H1: EID has a positive effect on EAT.

H2: EID has a positive effect on SLE.

H3: SLE has a positive effect on EAT.

H4: SLE has a mediating role in the relationship between EID and EAT.

2.2. Population, Sample, and Data Collection

The population of the research has been determined as the teachers working in pre-school, primary school, secondary school and high schools in Adana, which are affiliated with the Ministry of National Education. Since it is not possible to reach all teachers, a sample of teachers working in the selected schools was studied. Therefore, 50 schools from different education levels (pre-school, primary school, secondary school and high school) were selected using a convenience sampling method. Then, online survey forms were sent to the principals of these schools, and they were asked to share the survey forms with the teachers working in these schools. 600 online survey forms were sent to those school principals using a random sampling method. The data collection process was checked as thoroughly as possible. As a result of this process, 453 survey forms were returned. Later, during data entry, it was seen that 4 survey forms were filled inappropriately and were excluded from the analysis. As a result of all these procedures, the analyses were done on a sample of 449 people. According to Yazıcıoğlu and Erdoğan (2004: 49–50) who determined the size of the population that can be represented with a reliability of 0.95 and a sampling error of 0.05, it is indicated that a sample of 394 individuals can represent a population of more than one million people (Meydan, 2010: 132). Hence, it was decided that the research sample size of 449 people is sufficient.

2.3. Data Collection Tools

In this study, a structured online survey was used as a data collection. This survey consists of demographic information questions, one dimension (13 items) which is called 'environmental identity' of "The Environmental Identity Scale", one dimension (5 items) which is called 'environmental attitude' of "The Environmental Attitude Scale" and "The Sustainable Leadership Scale." The Environmental Identity Scale used in the study was developed by Clayton (2003), adapted to Turkish by Clayton and Kılınç (2013) who converted this scale to the 7-point Likert scale ranging from (1) never true to (7) always true. This scale which includes 24 items, has been used in different studies before, and its reliability and validity have been tested. Tanık (2012) who did both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA), determined four dimensions which are 'environmental identity', 'desire to be close to nature', 'resemblance to nature' and 'environmentally friendly behaviors.' The Environmental Attitude Scale was developed by Berberoğlu and Tosunoğlu (1995) to measure the environmental attitudes of university students. This scale consists of 21 items. It is a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree and it has reverse-coded items. The Sustainable Leadership Scale was developed by Mukherjee (2020) and has 10 items. It is a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1).

2.4. Data Analysis Method

The data obtained from the survey forms were analyzed using SPSS 24.0 and SmartPLS 3.3.3 programs. SPSS 24.0 program was used for frequency analysis of the demographic characteristics obtained from surveys. The SmartPLS 3.3.3 program was used for reliability and factor analysis of the measurement model, Partial Least Squares Structural Equation Modeling (PLS-SEM) path analysis and mediation effect analysis of the research model.

2.5. Analysis of the Data

In an attempt to test the reliability and structural validity of the scales, factor analysis was applied to the measurement model. Using PLS-SEM, factor analysis of the obtained data was applied in the SmartPLS 3.3.3 program. The inner model of the measurement model was given in Figure 2. Based on this model, EID (13 indicators), EAT (5 indicators), and SLE (10 indicators) were tested to determine the reliability and validity of the measurement model.
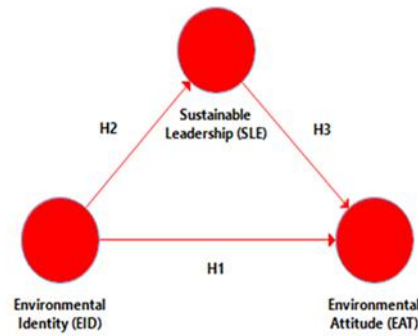
Figure 2. SmartPLS-SEM-inner model

While the internal consistency reliability criterion is provided only when Cronbach's Alpha, Composite Reliability (CR) and rho_A coefficient ≥0.70 (Hair, Hult, Ringle & Sarstedt, 2017; Henseler, Hubona & Ray, 2016), the convergent validity criterion is provided when outer loadings ≥0.708 (Hair, Black, Babin, Anderson & Tatham, 2006) and Average Variance Extracted (AVE) ≥0.50 (Chin, 1998). If AVE coefficients provide the threshold value, outer loadings of more than 0.40 can be accepted (Hair et al., 2006). In order to provide these criteria, indicators whose outer loadings range between 0.40 and 0.70 were excluded from the measurement model one by one and the analysis was repeated after the elimination of each indicator until the threshold values were reached (Yıldız, 2020). When the results of the test were examined, it was seen that the internal consistency reliability and convergent validity criteria of the measurement model were not provided due to low factor (outer) loadings belonging to the Sustainable Leadership Scale. Therefore, 2 indicators (SLE9 and SLE10) were removed from the scale because their factor loads ranged between 0.40 and 0.70. The last form of the measurement model obtained after outer loadings were removed is shown in Figure 3. This figure (Figure 3) is the outer model of the data based on the measurement model. All analyses in Smart PLS 3.3.3 were carried out over the measurement model in Figure 3 and the factors of this model.
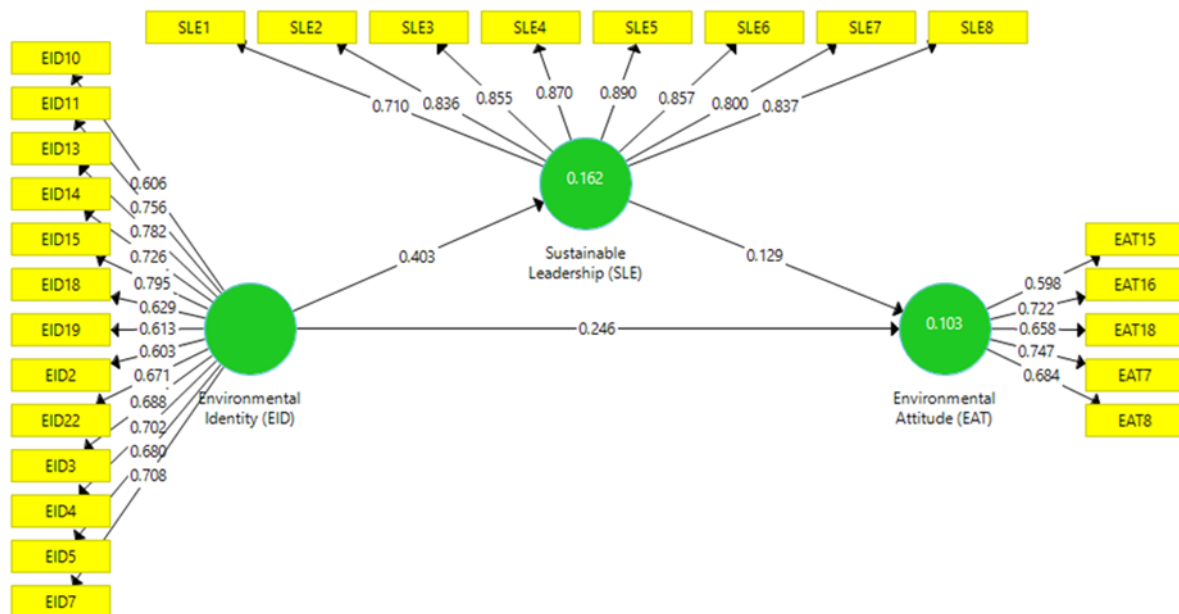
Figure 3. SmartPLS-SEM-outer model

2.5.1. Internal Consistency Reliability and Convergent Validity Analysis

While the criterion suggested by Hair et al. (2017) and Henseler et al. (2016) was used in determining the internal consistency reliability, the criterion suggested by Chin (1998) and Hair et al. (2006) was used in determining the convergent validity of the measurement model. The internal consistency and convergent validity values were obtained by factor analysis and are shown in Table 1.

According to Table 1, the internal consistency reliability was provided due to the Cronbach's Alpha, CR, and rho_A coefficients being more than 0.70. Although there are factor loadings that are less than 0.708 in Table 1, these factor loadings are acceptable since the AVE coefficients provided the threshold value (Hair et al., 2006). Therefore, it can be said that convergent validity was provided.

2.5.2. Discriminant Validity Analysis

In the determination of discriminant validity, the "Cross Loadings" condition and the "Fornell-Larcker Criterion" proposed by Fornell and Larcker (1981) and the "Heterotrait-Monotrait Ratio (HTMT)" (HTMT coefficients) suggested by Henseler, Ringle and Sarstedt (2015) were used. The Cross Loadings of the measurement model are shown in Table 2. As seen in Table 2, each indicator of the scales had the highest value of factor load under its own variable, and it was determined that the difference between the factor load in its own variable and the factor load in other variables is not less than 0.1. Therefore, it can be indicated that the condition of Cross Loadings is fulfilled.

Table 1. Measurement model factor analysis results.

Variable	Item	Factor Loading	Cronbach's Alpha	rho_A	CR	AVE
Environmental Identity (EID)	EID2	0.603	0.91	0.91	0.92	0.50
	EID3	0.688				
	EID4	0.702				
	EID5	0.680				
	EID7	0.708				
	EID10	0.606				
	EID11	0.756				
	EID13	0.782				
	EID14	0.726				
	EID15	0.795				
	EID18	0.629				
	EID19	0.613				
	EID22	0.671				
Sustainable Leadership (SLE)	SLE1	0.710	0.94	0.94	0.95	0.70
	SLE2	0.836				
	SLE3	0.855				
	SLE4	0.870				
	SLE5	0.890				
	SLE6	0.857				
	SLE7	0.800				
	SLE8	0.837				
Environmental Attitude (EAT)	EAT7	0.747	0.72	0.72	0.81	0.50
	EAT8	0.684				
	EAT15	0.598				
	EAT16	0.722				
	EAT18	0.658				

The results of the analysis made according to the Fornell-Larcker Criterion are presented in Table 3. The values in bold in Table 3 are the square root values of AVE. When the values in the table are examined, it is seen that the AVE square root value of each structure is higher than the correlation coefficients of other structures. This is the criterion proposed by Fornell-Lacker and it is seen that this criterion is provided on the measurement model.

The results of the analysis made according to the HTMT coefficients are given in Table 4. When the coefficients are examined, it is seen that the HTMT coefficients do not exceed 0.85 and 0.90 values. Since the SmartPLS 3.3.3 program paints the values other than these values with green (Henseler et al., 2015), it is seen that the threshold value is provided for the HTMT criterion.

Providing the desired threshold values for Cross Loadings, Fornell-Larcker and HTMT criteria is proof that the discriminant validity condition is fulfilled (Yıldız, 2020: 71). In other words, all results of Table 2, Table 3 and Table 4 showed that the discriminant validity of the measurement model is provided.

2.5.3. Correlation and Fit Indexes

Correlations between variables, and fit summary values are presented in Table 5. According to this table, it is seen that all variables are correlated. In Table 5, fit summary values are presented as Root Mean Square Theta (RMStheta), Standardized Root Mean Square Residual (SRMR), Chi-Square and Normed Fit Index (NFI).

Table 2. Cross loadings of the measurement model.

Item	Environmental Attitude (EAT)	Environmental Identity (EID)	Sustainable Leadership (SLE)
EAT15	**0.598**	0.168	0.131
EAT16	**0.722**	0.168	0.155
EAT18	**0.658**	0.185	0.171
EAT7	**0.747**	0.256	0.135
EAT8	**0.684**	0.226	0.184
EID10	0.133	**0.606**	0.201
EID11	0.163	**0.756**	0.304
EID13	0.218	**0.782**	0.272
EID14	0.230	**0.726**	0.240
EID15	0.228	**0.795**	0.370
EID18	0.158	**0.629**	0.259
EID19	0.159	**0.613**	0.176
EID2	0.231	**0.603**	0.270
EID22	0.211	**0.671**	0.360
EID3	0.163	**0.688**	0.285
EID4	0.248	**0.702**	0.257
EID5	0.243	**0.680**	0.215
EID7	0.251	**0.708**	0.320
SLE1	0.082	0.301	**0.710**
SLE2	0.166	0.322	**0.836**
SLE3	0.187	0.323	**0.855**
SLE4	0.219	0.336	**0.870**
SLE5	0.257	0.371	**0.890**
SLE6	0.197	0.331	**0.857**
SLE7	0.155	0.320	**0.800**
SLE8	0.221	0.372	**0.837**

Table 3. Fornell-Larcker criterion results.

	EAT	EID	SLE
EAT	**0.684**		
EID	0.298	**0.692**	
SLE	0.228	0.403	**0.834**

Table 4. HTMT coefficients.

	EAT	EID	SLE
EAT			
EID	0.359		
SLE	0.272	0.426	

For the RMStheta, values below 0.12 are determined as good fit values (Henseler et al., 2015). If the SRMR value is less than 0.08, it can be stated as a good fit (Hu & Bentler, 1999). When the NFI value is more than 0.90, the model is accepted as a well-matched model (Çakır & Adıgüzel, 2020). Nonetheless, this value was found to be at 0.86 in the study. Following these values, it can be said that all fit indexes were determined as good fits for the model except for the NFI value.

Table 5. Variables correlation and fit index.

	Correlations		
	EAT	EID	SLE
EAT	1		
EID	0.298	1	
SLE	0.228	0.403	1
RMStheta: 0.109; **SRMR:** 0.056; **Chi-Square:** 889.792; **NFI:** 0.857			

2.5.4. Structural Model

VIF coefficients for linearity are calculated by analyzing the relationship of the model whose reliability and validity analysis has been completed. Before hypothesis testing, it should be proven that there is no linearity between variables (Yıldız, 2020). The research model, which was used as a measurement model until this stage, is used as a structural model after this stage.

2.5.4.1. Linearity Analysis

The high correlation between variables is called linearity (Hair et al., 2006). The existence of linearity may cause standard errors to grow, the factor loadings or correlation coefficients to be miscalculated, and the signs to change (Hair et al., 2017). Two values are used to test linearity (Yıldız, 2020). These are the Variance Inflation Factor (VIF) and Tolerance. According to Hair et al. (2017), VIF ≥ 5 or Tolerance ≤ 0.20 indicates a linearity problem. The VIF coefficients were examined in the analysis. If the VIF coefficients are less than 5, it is decided that there is no linearity problem. The VIF coefficients are presented in Table 6, and it is seen that the VIF coefficients of the model are less than 5. Therefore, it was determined that the model was found to have no linearity problem in the study.

Table 7. Statistical results of the indicators.

Indicators	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
EAT15	0.598	0.590	0.065	9.144	**0.000**
EAT16	0.722	0.718	0.055	13.124	**0.000**
EAT18	0.658	0.652	0.057	11.623	**0.000**
EAT7	0.747	0.743	0.049	15.387	**0.000**
EAT8	0.684	0.686	0.060	11.414	**0.000**
EID10	0.606	0.602	0.050	12.077	**0.000**
EID11	0.756	0.756	0.033	22.796	**0.000**
EID13	0.782	0.781	0.030	26.087	**0.000**
EID14	0.726	0.721	0.041	17.609	**0.000**
EID15	0.795	0.795	0.023	34.486	**0.000**
EID18	0.629	0.625	0.033	18.816	**0.000**
EID19	0.613	0.615	0.053	11.470	**0.000**
EID2	0.603	0.604	0.045	13.376	**0.000**
EID22	0.671	0.675	0.034	19.947	**0.000**
EID3	0.688	0.689	0.039	17.447	**0.000**
EID4	0.702	0.701	0.032	21.914	**0.000**
EID5	0.680	0.678	0.040	17.125	**0.000**
EID7	0.708	0.708	0.027	26.133	**0.000**
SLE1	0.710	0.709	0.033	21.586	**0.000**
SLE2	0.836	0.835	0.019	42.974	**0.000**
SLE3	0.855	0.854	0.019	45.193	**0.000**
SLE4	0.870	0.870	0.018	48.375	**0.000**
SLE5	0.890	0.891	0.013	68.412	**0.000**
SLE6	0.857	0.857	0.023	36.899	**0.000**
SLE7	0.800	0.800	0.028	28.333	**0.000**
SLE8	0.837	0.838	0.024	34.785	**0.000**

R^2 (rate of explanation) is a coefficient that indicates what percentage of endogenous variables were explained by exogenous variables (Yıldız, 2020). When the R^2 values of the model were examined, it was found that the environmental attitude was explained by 10% and the sustainable leadership was explained by 16%. In Table 6, f^2 and Q^2 coefficients were also given. While the f^2 coefficient indicates effect size, the Q^2 coefficient shows prediction relevance of the model.

According to Table 6, it can be said that sustainable leadership had a medium effect size (f^2=0.19>0.15), and both the environmental attitude (Q^2=0.04>0) and the sustainable leadership (Q^2=0.11>0) had prediction relevance (Hair et al., 2017). In order to understand whether the model is ready for hypothesis tests, it was checked whether or not the factor loadings are statistically significant. The p values of the factor loadings are presented in the dark color in Table 7. According to the p values of the factor loadings in Table 7, it can be seen that all factor loadings are statistically significant (p≤0.05) for 95% CI.

Table 6. Structural model coefficients.

Variables		VIF	R2	f2	Q2
Environmental Identity (EID)	Environmental Attitude (EAT)	1.193	0.103	0.057	0.044
Sustainable Leadership (SLE)		1.193		0.015	
Environmental Identity (EID)	Sustainable Leadership (SLE)	1.000	0.162	0.193	0.110

3. RESULTS AND DISCUSSION

The demographic information for the sample in this study is shown in Table 8. As seen in table 8, out of 449 participants 184 (41%) were male and 265 (59%) were female. A majority of teachers were 41 to 50-year-olds (48.3%); other groups included 23 to 30-year-olds (5.6%), 31 to 40-year-olds (33.8%), 51 to 60-year-olds (11.4%) and 61-year-olds and above (0.9%).

Table 8. Frequency results of demographic information.

Characteristics	Answers	Frequency (n)	Percentage (%)
Gender	Men	184	41
	Women	265	59
Age (Years)	23 to 30	25	5.6
	31 to 40	152	33.8
	41 to 50	217	48.3
	51 to 60	51	11.4
	61 and above	4	0.9
Marital Status	Single	46	10.2
	Married	373	83.1
	Divorced/Widowed	30	6.7
Education Level	Bachelor's Degree	362	80.6
	Master's Degree	79	17.6
	PhD	8	1.8
Position	Principal	50	11.1
	Vice Principal	37	8.3
	Teacher	362	80.6
Job Experience (Years)	1 to 9	59	13.1
	10 to 19	174	38.8
	20 to 29	190	42.3
	30 to 39	24	5.4
	40 and above	2	0.4
Teaching Level	Pre-School	48	10.7
	Primary School	177	39.4
	Secondary School	88	19.6
	High School	136	30.3
Branch	Pre-School Teacher	49	10.9
	Primary School Teacher	158	35.2
	Branch Teacher	207	46.1
	Technical and Special Education Teacher	35	7.8
Settlement	Metropolitan	234	52.1
	City	118	26.3
	District	86	19.2
	Town	4	0.8
	Village	7	1.6
Total		**449**	**100.0**

A large percentage of teachers were married (83.1%) while 10.2 percent were single and 6.7 percent were divorced or widowed. Most of the teachers had bachelor's degrees (80.6%) while others had master's degrees (17.6%) and PhDs (1.8%). A small number of teachers had management positions as principals (11.1%) and vice-principals (8.3%). A large percentage of teachers had work experience from 20 to 29 years (42.3%); other categories included 1 to 9 years (13.1%), 10 to 19 years (38.8%), 30 to 39 years (5.4%), and 40 years and above (0.4%). A large group of teachers was teaching at primary schools (39.4%), whereas others were categorized at pre-school (10.7%), secondary school (19.6%), and high school (30.3%) levels. Most of the teachers were branch teachers (46.1%), while others were pre-school teachers (10.9%), primary school teachers (35.2%), and technical and special education teachers (7.8%).

Branch teachers consisted of Turkish (7.8%), Maths (5.6%), Foreign Languages (6.5%), Social Sciences (5.3%), Physical Sciences (7.8%), Visual Arts (1.1%), Music (0.4%), Physical Education (1.8%), Philosophy (0.7%), Technology and Design (2.2%), Religious Culture and Ethics (4.0%) and Psychological Counseling and Guidance (2.9%). More than half of teachers lived in metropolitan areas (52.1%) for a long period; other groups lived in small cities (26.3%), districts (19.2%), towns (0.8%), and villages (1.6%).

The path coefficients and the test results of the structural equation model created to test the hypotheses of the research are shown in Table 9 and Figure 4. In Table 9, path coefficients of the structural equation model were shown by β coefficients. Due to T statistics values of path coefficient values are greater than 1.96, p values of coefficient values are less than 0.05, CI (2.5%) and CI (97.5%) are not included 0; it can be stated that all relationships are supported and H1, H2, and H3 are accepted according to a 95% trust level in the model (Çakır, 2019; Yıldız, 2020). These results can also be seen in the structural equation model in Figure 4. Four results can be seen in Figure 4. These are the p values of the factor loadings, path coefficients, p values of path coefficients and R^2 values. The values written on the arrows between the latent variables and indicators indicate p values of the factor loadings. The values written on the arrows between the three latent variables show the path coefficients, and p values of the path coefficients in parentheses. These values written in the latent variable are R^2 values.

Table 9. Test results of the hypotheses and path coefficients.

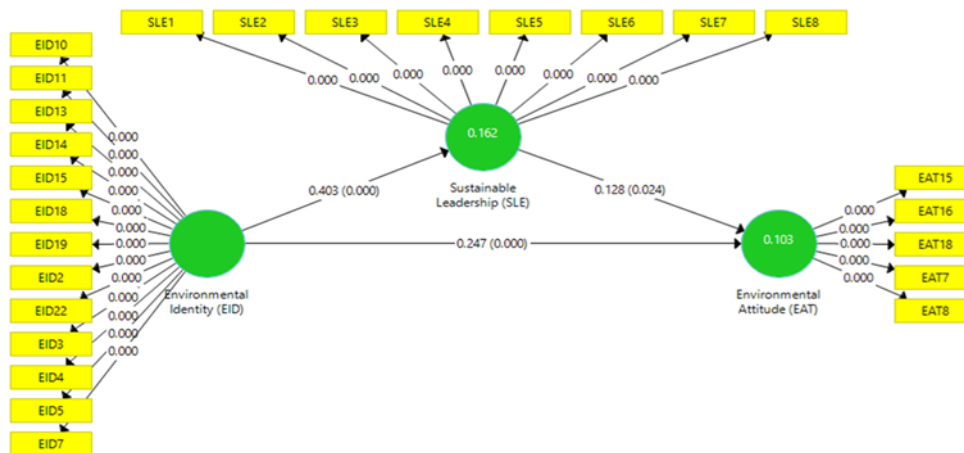| Hypothesis	Path	ß	Mean (M)	STDEV	T Statistics	P Values	CI (2.5%)	CI (97.5%)	Decision
H1	EID -> EAT	0.247	0.258	0.057	4.345	0.000	0.148	0.366	Accept
H2	EID -> SLE	0.403	0.411	0.038	10.682	0.000	0.339	0.480	Accept
H3	SLE -> EAT	0.128	0.131	0.055	2.326	0.024	0.017	0.245	Accept

Figure 4. SmartPLS-SEM-outer model path coefficients and p values.

The results of the first condition to determine the mediating role based on Baron and Kenny (1986) are shown in Figure 5. According to Figure 5, it can be seen that environmental identity has a positive effect on environmental attitude without the mediator variable (sustainable leadership). As seen in Figure 5, the relationship between EID and EAT is statistically significant (β=0.306, p=0.00<0.05). The values written on the arrows between the latent variable and indicators show T values of the factors. The value written in the latent variable indicates the R^2 value (R^2=0.093).

The second, third, and fourth conditions of the mediating role analysis are summarized in Figure 6 and Table 10. As seen in Figure 6, it can be indicated that the relationship between EID and SLE (p=0.00<0.05) and between SLE and EAT (p=0.024<0.05) are statistically significant. It can be stated that these results provided the second and the third conditions. When the mediator variable was added to the analysis, it was seen that the Beta coefficient decreased from β=0.306 to β=0.247 on the relationship between environmental identity and environmental attitude. This result provided the fourth condition and indicates a partial mediating role.

T values of the factors and R^2 values can also be seen in Figure 6. The results of the direct, indirect and total effects can be seen in Table 10. According to Table 10, a=0.403 indicates the path coefficient between environmental identity and sustainable leadership, b=0.128 indicates the path coefficient between sustainable leadership and environmental attitude, and c=0.306 indicates the direct effect of environmental identity on environmental attitude when sustainable leadership was not included in the analysis.

Figure 5. The results of 1st condition for the mediating role.
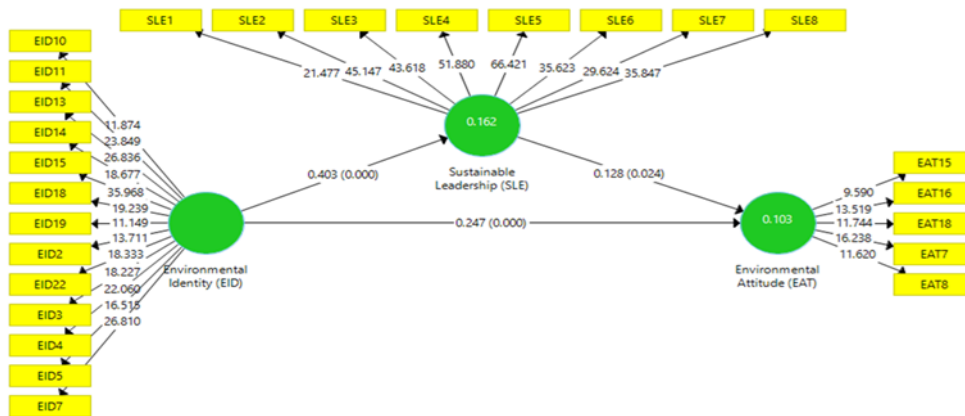

Figure 6. The results of 2nd, 3rd, and 4th conditions for the mediating role.

Table 10. The results of the mediating role.

Hypothesis	Path	a	b	c	a*b	a*b+c	VAF	T Statictic	P Value	CI (2.5%)	CI (97.5%)	Decision
H4	EID -> SLE -> EAT	0.403	0.128	0.306	0.052	0.358	0.13	2.106	0.036	0.009	0.102	**Reject/No Mediator Effect**

According to a, b, and c path coefficients in Table 10, a*b indicates the indirect effect and a*b+c indicates the total effect. Although it can be stated that sustainable leadership has a mediating role in the relationship between teachers' environmental identity and environmental attitude based on the conditions of Baron and Kenny (1986), the significance of the mediating role should be tested by calculation of the VAF (Variance Accounted for) coefficient (Hair et al., 2017). According to Hair et al. (2017), the VAF coefficient is calculated by the formula as VAF = (a*b)/(a*b)+(a*b+c). Calculating the VAF with this formula, VAF= 0.052/0.052+0.358 = 0.052/0.410=0.13. According to Hair et al. (2017), VAF>0.80 indicates full mediator effect, 0.20≤VAF≤0.80 indicates partial mediator effect, and VAF<0.20 indicates no mediator effect. It can be seen that calculated as VAF=0.13<0.20. Therefore, it can be said that the mediating role of sustainable leadership between teachers' environmental identity

and environmental attitude was not statistically significant. Thus, H4 is rejected. So, it is decided that sustainable leadership does not have a mediating role in the relationship between teachers' environmental identity and environmental attitude in the study.

In the mediator effect analysis, it is expected that R^2 increases when the mediator variable is added to the model (Yıldız, 2020). While R^2 was 0.093 in Figure 5, it was 0.103 in Figure 6. This result indicates that the R^2 increased only 1% in the model. Since there is no study examining the relationships between these variables on teachers in the relevant literature, the study results of the relationship among variables and the mediating role can not be compared with the previous studies. However, in the published literature, there are different results related to teachers' environmental identity, environmental attitude and sustainable leadership levels. According to Gkargkavouzi et al. (2018) teachers had high levels of environmental identity and greater connectedness to nature as a result of their environmental knowledge and environmentally friendly behaviors. Artvınli et al. (2019) studied the environmental attitude level of primary school teacher candidates and indicated this level as moderate because of the inability of teacher candidates to put theoretical environmental education into practice on an intended level. In a study, Esa (2010), carried out within the context of the Malaysian education system, it was shown that there is a strong correlation between environmental knowledge and attitude, and this relationship affects behaviors towards the environment positively. In contrast to this study, the study of Pe'er, Goldman and Yavetz (2007) found that there is a weak correlation between knowledge and behavior and between attitude and behavior. Nartgün et al. (2020) carried out a study that demonstrated that sustainable leadership predicts perceived school effectiveness, and there is a significant correlation between sustainable leadership and perceived school effectiveness at a high level. Agsonsua et al. (2019) examined the ideas about sustainable leadership of private school principals in Thailand and saw that the level of sustainable leadership of private principals is high. The authors concluded that private schools have to invest in their institutions and develop themselves in order to be sustainable, secure and to survive, and draw the attention of students and parents.

4. CONCLUSION

This study aims to investigate the mediating role of sustainable leadership in the relationship between teachers' environmental identity and environmental attitude. According to the results based on this purpose, it was confirmed that environmental identity has a positive effect on environmental attitude and sustainable leadership. It was also proven that sustainable leadership has a positive effect on environmental attitudes. However, the mediating role of sustainable leadership was not found to have and effect on the relationship between teachers' environmental identity and environmental attitude. This may have arisen from the fact that sustainable leadership includes many perspectives and purposes which are not only related to the environment and its development, but also to diversity and sustainability of education for students. Although it was seen that sustainable leadership was affected by environmental identity and affected environmental attitude, it may not have a partial or full mediating role in the relationship between environmental identity and environmental attitude. Nevertheless, teachers' environmental identity which is influenced by different cultures could be equally important (Rathore et al., 2020). Their attitudes towards the environment can be different because of religion, culture and values (Larijani & Yeshodhara, 2008). Therefore, environmental attitude is an important factor affecting teachers' tendency towards environmental issues (Kim & Fortner, 2006) and environmental problems can be solved through the changing of understanding and attitudes with positive perspectives (Şama, 2003). In conclusion, creating sustainable change which focuses on environmental developments that increase students' learning skills and knowledge can be realized by sustainable leadership (Davies, 2007; Williams, 2013).

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