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Creating an Environmental Attitude Scale

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Öz

Bu çalışmanın amacı bir çevre tutum ölçeği geliştirmektir. Çevre tutum ölçeği (ÇTÖ) başlangıçta 24 maddeli hazırlanmıştır. Geliştirilen ÇTÖ likert tipte maddelerden oluşmaktadır. Çalışmanın örneklemini Eğitim Fakültesi ve Fen Edebiyat Fakültesinde öğrenim görmekte olan 239 üniversite öğrencisi oluşturmaktadır. Açımlayıcı faktör analizi için principal axis factor yöntemi ve orthogonal döndürme (varimax) tekniği kullanılmıştır. Dört madde ölçeğin amacına hizmet etmediğinden ölçekten çıkarılmıştır. Faktör analizi aynı yöntemlerle tekrar yapılmış ve ölçek tek faktörlü, 20 maddeli Cronbach's alpha değeri =.971'e sahip olarak geliştirilmiştir. ÇTÖ'nün nihai hali dokuz (9) ters maddeye sahiptir. Doğrulayıcı faktör analizi farklı bir örneklemle (N=132) yapılmıştır. Hata terimlerinin kovaryat edilmesi sonucunda ÇTÖ modeli doğrulayıcı faktör analizi tarafından doğrulanmıştır.

Anahtar Kelimeler: tutum, çevre tutum, doğa tutum, ölçek, ölçek geliştirme.

Abstract

The aim of this study is to create an environmental attitude scale. The Environmental Attitude Scale (EAS) was prepared with 24 items. The prepared EAS consists items with likert type. The sample of the study consists of 239 university students studying at Faculty of Education and, Faculty of Arts and Sciences. Principal axis factoring with orthogonal rotation (varimax) was used for exploratory factor analysis. Four items did not serve the purpose of the scale, so they were omitted from the created scale. Factor analysis was reconducted with same procedure is and one factor emerged with 20 items along with Cronbach's alpha =.971 Finalized EAS consists of nine (9) reverse coded items. A confirmatory factor analysis is applied with a different sample (N=132). After covariating the error terms model was approved by confirmatory factor analysis.

Key Words: *Teacher training, policy and practices, value transformation*

GİRİŞ

Different scales and measurement instruments are used to asses individuals' perceptions on a specific subject. Moreover, developing measurement instruments helps not only diversity in measurement but also assessing different aspects of individuals and using proper means since every measurement instrument has different aspect of interested domain (Chen, 2006; Deshpande, 2004). One of these domains is related to the nature and its relation with person. This relation is defined not only in behavior but also in attitude, thus leading the way to use surveys, observations and scales to understand the human behavior since its consequences directly affect the nature (Uzunöz, 2011). Paradigm of attitude shifted from a narrow conceptual understanding to towards a broader understanding such as from water and air pollution to biodiversity or chemicals which are not easily broken down in nature and show their effect in long term. Consequently, the urge of new measurement instruments or reevaluate the created ones naturally impulse the researchers (Dunlap, Van Liere, Mertig & Jones, 2000). For example, one study might focus the on main reason on of an individual's whether for his/her attitude is related to his/her own sake or for humanity (Thompson & Barton, 1994), and another study might focus on individual's attitude and its relation with consumer behaviors (Grunert & Juhl, 1995), or how socioeconomic status of individuals affect their environmental attitudes (Balderjahn, 1988). More studies are being done across the countries to reveal the underlying factors whether those factors are universal or not (Schultz & Zelezny, 1999). Main idea of concerning one's attitude on nature lies on the thought that the more intense emotion on the environment the more appropriate behavior they will exhibit. In

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fact personal values have more effect than knowledge and thus affect the behavior and the attitude (Grob, 1995).

Increasing technological lifestyle has changed the way of living and hence people's interaction with environment which might be through the digital world or the artificial structures. Studies already indicate that living styles of people, beliefs and their attitudes created artificial habitats. Thus, changes in the mentioned topics/subjects might play a key role either causing or preventing environmental issues. Efforts to increase the environmental awareness and positive environmental attitudes should concern these subjects which are also concern of scientific researches (Şeker & Sert, 2019; Topkaya & Doğan, 2020). For example, a study revealed that 42% of the people gain information through television programs, 69% find government efficiency inadequate in preserving environment, 7% has membership of an environmental organization (Güneş, Eser, Çevik, Kundakçı & Kapamaz, 2019). Another study revealed that people with more positive attitude towards environment have tendency of choosing natural places for vacation. It is also noted that such cases might happen due to social norms or approvement by others (Atay, Soylu & Gökdemir, 2019). Attention towards environment happens due to several factors. Consequences of other people actions on an individual's life, reference points for actions, norms or interpersonal behaviors might be listed as factors (Heberlein, 1972).

Social, cultural and economic factors have impact on environmental attitudes along with living place of childhood era (rural or urban), parents' education level, organization membership types (Kahriman Pamuk, 2019). Increase in education level also shows a positive relationship with positive environmental attitude (Kılıç & Girgin, 2019a; Kılıç & Girgin, 2019b) and in Turkey; new universities were opened in every province center since 2008. Moreover, environmental attitude is not an individual's attitude but has a sociological perspective. Thus, being in a social structure, whether involving actively in the structure or participating in it emotionally, also affects environmental attitudes. Influences of identities are effective on attitudes and behaviors (Stets & Biga, 2003). Environment and sociology is two interlinked topics and as a consequence, courses are offered for graduate and undergraduate students (Scarce & Mascarenhas, n.d). Chaisty & Whitefield (2015) already studied effect of social change and its relationship with environmental attitude. Researchers state that political values may also affect the attitudinal change. Governments' decisions related to environmental issues are not only related to preserving environment but also environmental protection provides feedback to economic productivity, social integration and income generation. Thus, governments try to influence their citizens attitudes and hence behaviors (Schmithuesen, 2004) since, economy and environmental attitude has positive relationship (Franzen & Vogl, 2013). For example, the most voted party in Turkey has already addressed the need for environmental places and such places are promised to people as election promises which are important due to its effect (TCC, 2018).

Be that as it may, environmental attitude and environmental education place itself within education context (Eagles & Demare, 1999). Schools are an important factor increasing the positive environmental awareness attitude if students pass through real life or environmental education context (Coertjens, Pauw, Maeyer & Petegem, 2010). Thus, environmental education and developing positive attitudes towards environment has already started from early childhood education level (Yılmaz, Yılmaz-Bolat & Gölcük, 2020). Social and technological changes also influenced the instructional techniques for environmental education. For example, Karasaç (2019) studied effect of mobile learning environments on environmental education. Benzer, Güven Yıldırım & Önder (2019) studied effect of educational films on attitudes towards and awareness of environmental problems. Aslan Efe, Yücel & Efe (2020) studied effect of making documentaries on prospective science teachers' attitudes towards the environment for sustainable development. Using technology also increase the globalization and Mol (2006) states that globalization through interaction, exchange and social learning drives societies to meet at one common environmental attitude since societies have the ability

of learning from each other. However, attitude is a psychological construct thus knowledge or information does not explain the behavior. Hence, environmental education or knowledge obtained by other means is only effective if it is effective on psychological construct (McGuire, 2015). Since social sciences include human behaviors, questionnaires are heavily used to collect data and understand human psychological attributes to take a glance upon the domain of interest (Deshpande, 2004; Hinkin, 1998; Wong & Lian, 2003). For these reasons using and creating effective measures might be essential for the purposes (Hinkin, 1998; Hinkin, Tracey, Enz, 1997).

Published studies by Turkish researchers related to environmental attitude are vast. For example, fifteen articles were published just in 2019. Karasaç (2019) used a scale developed in 2007 with five factor structure; Dinavasova (2019) used a scale developed in 2006 with two factor structure; Yiğit (2019) used a scale ,with no factor structure information, developed in 2005; Artvinli, Aydın & Terzi (2019) used a scale with two factor structure developed in 2000 and adapted to Turkish in 1998;2008;2009; Kılıç & Girgin, 2019a and Kılıç & Girgin, 2019b used a scale with two factor structure developed in 2014 and adapted to Turkish in 2018; Karaküçük, Ayyıldız Durhan, Akgül, Aksın & Özdemir (2019) used a scale with three factor structure developed in 1994 and adapted to Turkish in 2007; Türk and Çakır (2019) used a scale with five factor structure developed in 1973 and adapted to Turkish in 2013; Karaçar (2019) used a scale with two factor structure developed in 2000 and adapted to Turkish in 2009; Demirtaş and Çinici (2019) used a scale with three factor structure developed in 2011; Yüksel and Kaya (2019) used a scale with no factor structure information, developed in 2003; Gazeloğlu (2019) used a scale, designed with four factor structure, of different combinations of different environmental attitude scales developed in 1999; 2009; 2010 and 2011; Büyükkaynak and Aslan (2019) used a scale with two factor structure developed in 2006; Oğuz and Yılmaz (2019) used a scale, designed with four factor structure, of different combinations of different environmental attitude scales developed in 1999; 1999; 2007 and 2009; Başaran Uğur, Bektaş & Güneri (2019) used a scale with three factor structure developed in 2011. However, taking a glance upon the studies reveals two problems.

First, due to rapid change of societies and attitudes a new instrument might be helpful to keep the pace on. Second, although there are different environmental attitude scales in the literature, most of them are based on past experiences and have more than one factor structure. However, Clark & Watson (1995) report that a good scale has one factor structure. Milfont & Duckitt (2010) report although there are many environmental attitude scales in the literature, most scales are multidimensional and literature lacks one-dimensional environmental attitude scales. Thus, the purpose of the study is to create an environmental attitude scale (EAS) with one factor structure.

Method

Research Design and Sample

Creating new environmental attitude scale: To achieve the purpose of the study, literature research was done for different environmental attitude scales and the obtained scales were analyzed. To create a new scale, some guide lines were determined. The created guideline was based on suggestions acquired from literature (Brinkman, 2009; Deshpande, 2004; Hinkin, 1998; Hinkin et. al., 1997; Johanson & Brooks, 2010;). Those guidelines are;

a) Not to cause any bias, content and language must be familiar with students' schemes

b) Items must include a single topic and asses a single behavior or response

c) Items used must not sound abstract or vague so that questions could not be interpreted in different ways.

d) Leading questions should be avoided

e) Sensitive questions or sentences, double negative questions should be avoided

f) Intervals between the questions should not awake the feeling for the respondents that their answers are being/will be checked

Among Thurstone's method of equal-appearing intervals, Likert scale, Semantic differential scales, it was determined that a likert type scale would be more beneficial for the purpose of the study since it ensures much easy compilation and generalize the scale to population (Brinkman, 2009; Johanson & Brooks, 2010; Lovelace & Brickman, 2013). Within the light of literature, different environmental attitude and related manuscripts and scale development articles were analyzed and candidate pool of items was selected for the scale and then maximum number of items was determined so that respondents would not get bored and would respond the scale within attention time to ensure content adequacy. By placing 5 level of response for an item it was ensured that internal consistency reliability was increased and sufficient variances were obtained (Aydede Yalçın & Çaycı, 2018; Bozdemir & Faiz, 2018; Brinkman, 2009; Chen, 2006; Çavuşoğlu et. al., 2017; Doğuç & Arıkan, 2018; Hinkin, 1998; Hinkin et al., 1997; Kaiser, Merten & Wetzel, 2018; Kefeli, Taş & Yalçın, 2018; Liu, Hsueh & Chen, 2018; Lovelace & Brickman, 2013; Otto, Kröhne & Richter, 2018; Rao & Suribabu, 2018; Tuncel, 2018; Ulas Kadıoğlu & Uncu, 2018; Uzunöz, 2011). Since Hinkin (1998) points out that most respondents tend to choose options at the edges reversed coded sentences were appropriately used to trigger vigilance of respondents

The created environmental attitude scale: The prepared scale was analyzed by instructors and educators with the experience of teaching and having researches on related issues since specialists on content domain could value the prepared scale (Hinkin et al., 1997). After determining the items, their number and its content, a pilot study was done with a few students. The feedback obtained from students indicated draft scale had no problematic issues then the scale was finalized. The initial Environmental Attitude Scale (EAS) consisted of 24 items. The created EAS consists of twelve reversed questions (items) which are EAS1, EAS2, EAS3, EAS4, EAS6, EAS8, EAS10, EAS14, EAS15, EAS17, EAS21 and EAS22.

Determining the sample size and sampling: Choosing a sample size is controversial throughout the literature. Some researchers argue about arbitrary sampling which presents high communalities without cross loadings while others argue on item-ratio. Debate on item-ratio suggests proportion from 1:2 to 1:10 for item and sampling ratio (Anthoine, Moret, Regnault, Sébille & Hardouin, 2014; Hinkin, 1998; Hinkin et al., 1997). The finalized scale was applied to 239 university students who were studying at Education, Arts and Sciences faculties. Thus, item respondent ratio exceeded 10 and it was concluded that sample size was good enough for scale development purpose.

Data and Its Analysis: Ethical approvement was provided by Scientific Research and Publication Ethics Committee on 25/03/2020 with E.4758 file number. The EAS was handed out to volunteered respondents. In order to ensure anonymity, no information was asked from the participants.

Data Analysis: Initial analyses were done with respect to internal consistency, communalities and factor loadings. Discarding of items was based on three criteria. Items whose corrected-item total correlation value was below .2 whose factor loadings were below .4 and whose communalities were below .5 were analyzed (Field, 2013; Johnson & Morgan, 2016). After carefully examining the items which were regarded the most problematic were omitted from the EAS. This procedure was repeated every time when a single item was discarded to ensure to provide the best scale model. Hence, EAS2, EAS4, EAS14 and EAS16 were omitted from the scale. Final environmental attitude scale consisted of 20 items. Reliability analysis of the scale was done and initial Cronbach's α was found as =.971 "highly reliable" (Kalaycı, 2010)

Exploratory Factor Analysis (EFA): A principal axis was conducted on 20 items with orthogonal rotation (varimax) through SPSS program to reveal the factors within the created

scale. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO=.964 ("marvelous" according to Kalaycı, 2010) which is above the acceptable limit of .5 (Field, 2013) and Bartlett's test of sphericity was found to be significant X2(190) = 4592,540 ; p= .00 < .05). An initial analysis was run to obtain eigenvalues for each factor in the data. One factor emerged having an eigenvalue of 13,001 over Kaiser's criterion of 1 and in explained % 63,287 of the variance. Since, only one factor emerged, no parallel analysis was done for interpretation of the retaining factors (Field, 2013; Johnson & Morgan, 2016). The scree plot (Figure 1) was obtained and it was decided that the scale had one factor with respect to convergence of scree plot and Kaiser's criterion on this value.

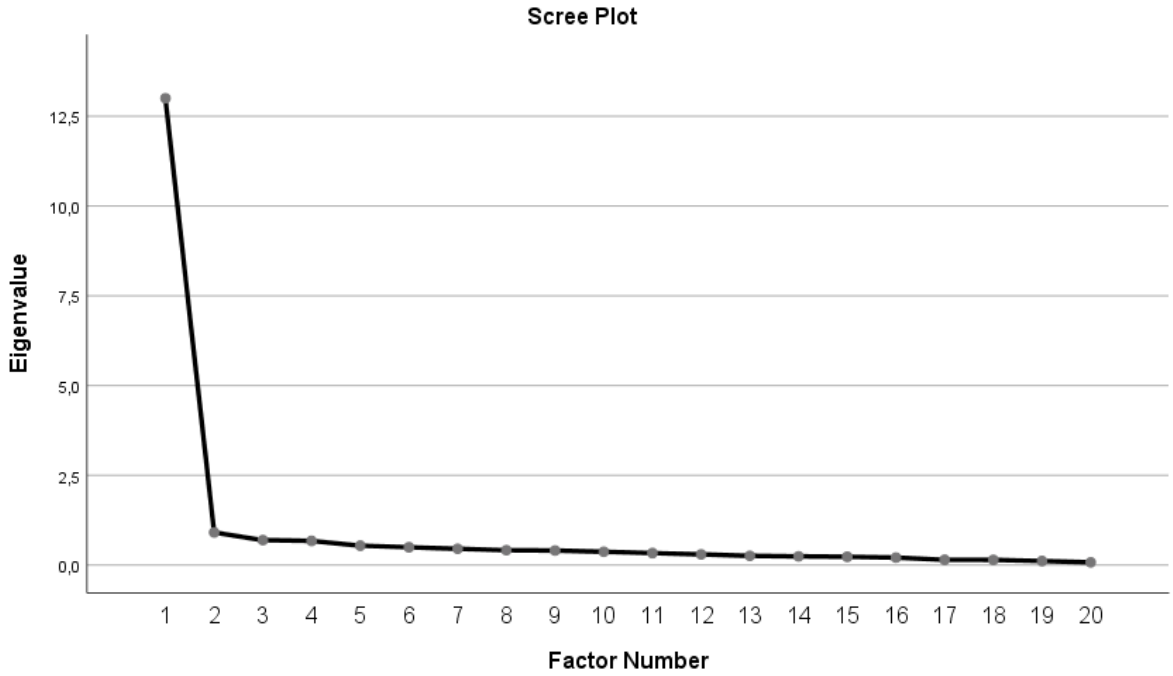

Figure 1. Scree plot

Factor analysis with respect to varimax rotation was carried out for further analysis. Table 1 shows the factor loadings and extracted communalities after rotation.

Table 1. Extracted communalities and factor loadings

Item	h^2	Factor
EAS1	,486	,697
EAS3	,465	,682
EAS5	,747	,864
EAS6	,789	,888
EAS7	,626	,791
EAS8	,585	,765
EAS9	,640	,800
EAS10	,668	,817
EAS11	,774	,880
EAS12	,475	,689
EAS13	,487	,698
EAS15	,700	,837

EAS17	,796	,892
EAS18	,495	,703
EAS19	,646	,804
EAS20	,789	,888
EAS21	,431	,656
EAS22	,603	,777
EAS23	,614	,783
EAS24	,843	,918

For detailed analysis of items on discrimination value, an independent t samples test was run for each item. Lower and upper %27 of the samples were compared through independent t samples test. This analysis shows items' discrimination value of individuals with higher attitudes than lower attitudes and is used by many scientists in scale developments (Moore & Foy, 1997). Items' old and new codings, mean, standard deviation, corrected item-total correlation values and tup-down(%27) results are shown in Table 2.

Table 2. Item-total correlation and $t_{up\text{-}down(\%27)}$ results

Item Old Coding	Item New Coding	Mean	Standard Deviation	Corrected-item total correlation	$t_{up\text{-}down(\%27)}$
EAS1	EAS1	3,38	1,646	,688	19,003*
EAS3	EAS2	3,56	1,550	,671	13,932*
EAS5	EAS3	3,60	1,522	,850	30,894*
EAS6	EAS4	3,76	1,700	,875	28,036*
EAS7	EAS5	3,63	1,776	,779	22,085*
EAS8	EAS6	3,65	1,482	,752	15,742*
EAS9	EAS7	3,71	1,688	,789	21,754*
EAS10	EAS8	3,77	1,623	,805	24,393*
EAS11	EAS9	3,65	1,511	,866	24,114*
EAS12	EAS10	3,32	1,396	,680	16,034*
EAS13	EAS11	3,52	1,584	,688	16,351*
EAS15	EAS12	3,55	1,648	,825	28,357*
EAS17	EAS13	3,71	1,598	,879	28,717*
EAS18	EAS14	3,41	1,414	,691	17,530*
EAS19	EAS15	3,50	1,522	,792	20,490*
EAS20	EAS16	3,77	1,646	,875	32,527*
EAS21	EAS17	3,35	1,564	,647	14,234*
EAS22	EAS18	3,52	1,478	,765	20,080*
EAS23	EAS19	3,48	1,529	,773	23,620*
EAS24	EAS20	3,72	1,702	,904	65,682*

* p < .05

The finalized EAS consists of 20 items and 9 items are reverse coded items. Reversed coded items are EAS1, EAS2, EAS4, EAS6, EAS8, EAS12, EAS13, EAS17 and EAS18 (Appendix A). For international readers an English translation of EAS was provided by the researcher and given in the Appendix B. To ensure content adequacy, English translation was checked by professionals with adequate proficiency in English. Created EAS has one factor structure thus serves its purpose as "Environmental Attitude".

Confirmatory Factor Analysis: For confirmatory factor analysis data were collected from a different sample. The sample consisted of 132 students who applied pedagogical education program. Johanson & Brooks (2010) point out that literature on social researches suggest N=100 for sampling. For a comprehensive item analysis N=100 to 200 also should be conducted since standard errors for Cronbach's alpha increases as the sample size decreases. However, it is also noted that regardless of the number of items, mean interitem correlation is nominal between N= 30 to 200. A similar approach was suggested by Hinkin (1998) and Hinkin et al., (1997) recommending a sample size of 150. Nonetheless, researchers mention to note the difference between statistical and practical significance since attaining statistical difference increases as the sample size increases. Larger samples are in fact useful to detect small fluctuations. However, as sample size increases, practical meaning of the results may distort, so decision on sample size must be taken with caution. Thus, it was concluded that N=132 would be sufficient enough to carry out confirmatory factor analysis (CFA).

Confirmatory factor analyses (CFA) were run through Amos 24.0 software. Initial analysis results revealed that χ2/DF ratio is 1,467; SRMR value is .0857; GFI value is .831; AGFI value is .791; IFI value is 0.690; NNFI (TLI) value is 0.624; CFI value is .664 and RMSEA value is .060. Due to low values of indices, it was decided to look for nested models and examine the error terms and to covariate them (Newsom, 2017). Covariated error terms are e3-e8; e5-e10; e1-e2 and e4-e9.

After covariating the error terms, the obtained values are; χ2/DF ratio is 1,233; SRMR value is .0795; GFI value is .862; AGFI value is .825; IFI value is 0.852; NNFI (TLI) value is 0.813; CFI value is .837 and RMSEA value is .042. The confirmatory factor analysis result is shown in Figure 2.

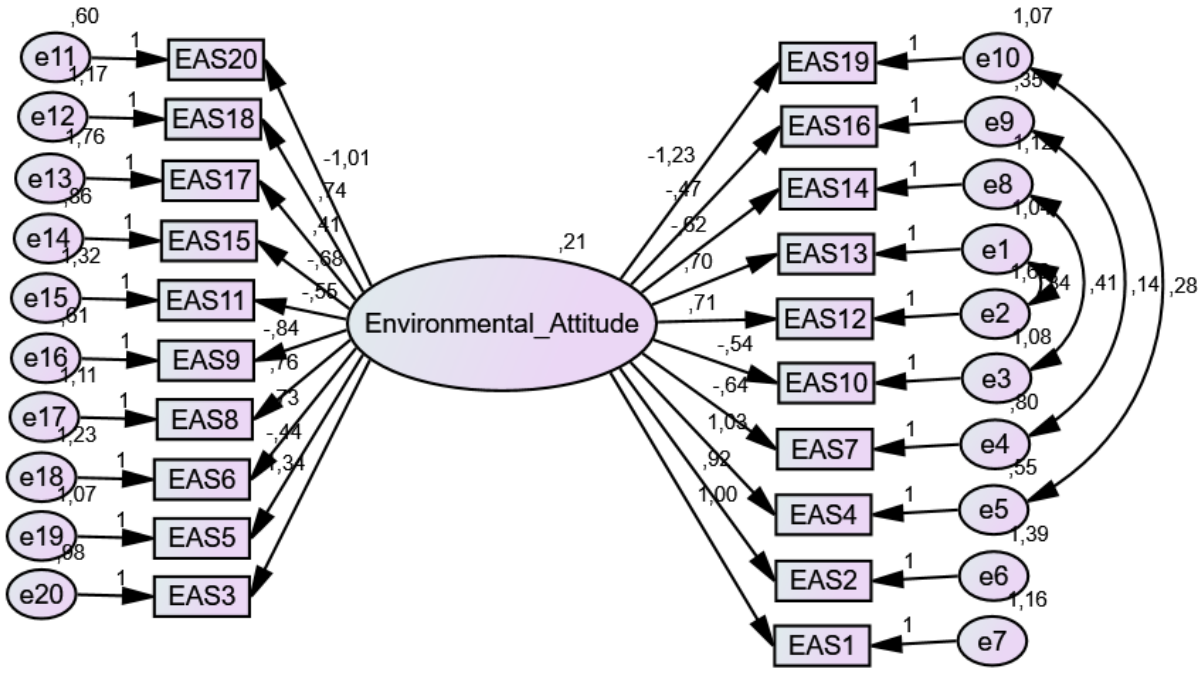

Figure 2. CFA diagram and results

χ2/DF ratio below .2 indicates good fit. Thus model has good fit with respect to χ2/DF ratio (1,233). Values above .8 for AGFI and CFI indicate good fit whereas a value above .8 for TLI indicates acceptable fit. CFA shows EAS model has fit value of .825 for AGFI, .813 for TLI and .837 for CFI. Thus, the model has good fit with respect to indicated fit values (Browne and Cudeck, 1993; Carlback & Wong, 2018; Garson, 2006 as cited in Chinda, Techapreechawong & Teeraprasert, 2012; Sica & Ghisi, 2007; Shadfar & Malekmohammadi, 2013).

Pedroso et. al.(2016) also state a RMSEA value below .05 indicate good fit. Thus, the model has good fit with respect to RMSEA (.042) value. EAS' CFA results indicate model's SRMR value is .0795 and SRMR value below .08 indicates good fit. Thus, the model has good fit with respect to SRMR value (Carlback & Wong, 2018). Both GFI (.862) and IFI (.852) values indicate that model has good fit since they are above .85 (Kline, 2011 cited in; Kaya & Altinkurt, 2018; Vassallo & Saba, 2015).

DISCUSSION

The lowest t values are obtained from EAS2 (13,932), EAS11 (16,351), EAS14 (17,530) and EAS17 (14,234). The more insight approach may claim that students feel that they have power over nature and they can shape it through means. For example, EAS2 (13,932) clearly implies that humans do not need to fit nature since they can control it. EAS11 (16,351) already hints that idea of students on "Existing laws are inadequate in conservation of environment" is related to having power on nature, enable humans to restore it whenever necessary (Wang, Hong, Lin & Tsai, 2020). Personal values may also affect the environmental attitudes. For example, a more materialistic approach and focusing on money could cause a person to neglect a sustainable lifestyle (Witt, Boer & Boersema, 2014). Such cases may also drive the idea that organizations should take responsibilities and simply restore nature as hinted by the t value of EAS17 (14,234). Similar approach might be seen through the t value of EAS10 (16,034) and EAS14 (17,530). The difference among the up-down (%27) groups on EAS13 (28,717) already points that students also think nature could preserve itself. For this reason, ideas on their individual responsibilities also exhibit similar pattern (EAS15; 20,490). There are many reasons that could be listed for the factors affecting the attitudes such as trade, judiciary, government & citizen rights (Kelemen, 2001), socioeconomic levels (Aydede Yalçın & Çaycı, 2018). Even, being psychologically well might affect the attitude and pro-environmental behaviors (Wang, et. al., 2020). Nevertheless, it is believed that a qualitative study would reveal the underlying factors better than quantitative studies. For instance, a quantitative study carried out by Sakurai et. al., (2020) revealed that although people acknowledge the importance of preservation of nature and ecosystem, they still tend to avoid taking responsibilities due to various concerns including security or avoiding life threatening cases.

It is worth noting that highest t value (65,682) is obtained through EAS20 "turning off the lights". On the other hand, t value (32,527) of EAS16 "turning off the tap" did not yield such a high value. Although two statements may seem to asses similar attitudes, they did not produce similar t values. It is believed that such a result occurred due to Turkish culture. "Turning off the lights" is a frequently encountered example told by parents (especially mothers) to their children. Even, such examples might be seen in Turkish movies. However motive for that is more related to economy rather than an environmental attitude. Bills for the electricity are considered high when compared to water bills, thus families respond to unnecessary lights as "money wasters" and hence, parents frequently advise their children to turn off the lights. Additionally, several researchers argue that females usually have more positive attitudes towards environment than males (Aydede Yalçın & Çaycı, 2018; Bozdemir & Faiz, 2018). For this reason, some researchers suggest establishing cooperative groups for environmental education and distributing the girls to those groups to make the boys gain more positive values (Çavuşoğlu, Altay, Nuriyeva & Öngör, 2017). Tuncel (2018) on the other hand, points out that "turning the lights off" might be easily linked to environment due to campaigns such as "earth hour". Similarly, Jechow (2019) indicates that "earth hour" campaign significantly reduced the

light pollution.

There are many factors which might affect attitudes of the students. Even curriculum changes may have an impact on environmental attitudes (Çavuşoğlu et. al., 2017). On the other hand, Price (2019) indicates changes in community environmental attitudes shape the curriculum. Thus, reliable scales should be used in assessing the attitudes. Clark & Watson (1995) report that a good scale through factor analysis should reflect unidimensionality. Milfont & Duckitt (2010) report although there are many environmental attitude scales in the literature, most scales are multidimensional and literature lacks one-dimensional environmental attitude scales. Thus, it is believed that the created EAS having both one factor structure and high internal consistency (α=.971) proves itself as a powerful scale for the purpose. In addition EAS might be used in different states since an English translation provided. However, reliability and factor structure of the scale should be restudied. Hence, EAS with different samples are also welcome to compare results and to validate its purpose. For this purpose, the created EAS is given in the appendixes.

REFERENCES

Anthoine, E., Moret, L., Regnault, A., Sébille, V., & Hardouin, J.-B. (2014). Sample size used to validate a scale: a review of publications on newly-developed patient reported outcomes measures. *Health and quality of Life Outcomes*, *12*, 2. http://doi.org/10.1186/s12955-014-0176-2

Artvinli, A., Aydın, R. & Terzi, İ. (2019). Environmental attitude levels of primary teachers candidates. *Osmangazi Journal of Educational Research, 6* (2), 62-78.

Aslan Efe, H., Yücel, S. & Efe, R. (2020). Belgesel çekme etkinliğinin fen bilgisi öğretmen adaylarının sürdürülebilir kalkınma için çevreye yönelik tutumları üzerindeki etkisi. *YYÜ Eğitim Fakültesi Dergisi, 17* (1), 436-454. DOI:10.33711/yyuefd.692958

Atay, L., Soylu, Y. & Gökdemir, S. (2019). Çevre endişesi, çevresel fedakarlık, normlar ve yer tutumununçevre dostu davranışa etkisi: Kapadokya/Göreme milli parkı örneği. *Seyahat ve Otel İşletmeciliği Dergisi, 16* (3), 398-417. DOI: https://doi.org/10.24010/soid.655546

Aydede Yalçın, M.N. & Çaycı, B. (2018). Öğretmen adaylarının çevresel farkındalıklarının sosyo-demografik özellikleri açısından incelenmesi. *Trakya Eğitim Dergisi, 8* (3), 578-590, Doi: 10.24315/ trkefd.316242

Balderjahn, I. (1988). Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns. *Journal of Business Research, 17* (1), 51–56. doi:10.1016/0148-2963(88)90022-7

Başaran Uğur, R., Bektaş, O. & Güneri, E. (2019). Sınıf ve fen bilgisi öğretmen adaylarının sürdürülebilir çevre tutum düzeyleri [Classroom and science teachers' sustainable environment attitude levels]. *Uluslararası Sosyal Araştırmalar Dergisi [The Journal of International Social Research], 12* (63), 775-788. DOI: http://dx.doi.org/10.17719/jisr.2019.3275

Benzer, S., Güven Yıldırım, E. & Önder, A.N. (2019). The impact of educational films on attitude and awareness towards environmental problems. *Trakya Journal of Education, 9* (4), 757-770. DOI: 10.24315/tred.526233

Bozdemir, H. & Faiz, M. (2018). Öğretmen adaylarının çevreye yönelik ekosentrik, antroposentrik ve antipatik tutumları. *Sakarya University Journal of Education, 8* (1), 61-75. Doi: 10.19126/suje.330546

Brinkman, W-P. (2009). *Design of a questionnaire instrument, handbook of mobile technology research methods*. ISBN 978-1-60692-767-0, pp. 31-57 Netherlands: Nova Publisher

Browne, M.W. & Cudeck, R., 1993. *Alternative ways of assessing model fit*. In: Bollen, K.A. and Long, J. S. (Eds.) Testing structural equation models, Beverly Hills, CA: Sage

Büyükkaynak, E. & Aslan, O. (2019). Matematik ve fen bilimleri eğitimi öğretmen adaylarının çevreye yönelik tutumları [Mathematics and science education teacher candidates' attitudes towards the environment]. *Uluslararası Sosyal Araştırmalar Dergisi [The Journal of International Social Research], 12* (63), 797-807. DOI: http://dx.doi.org/10.17719/jisr.2019.3276

Carlback, J. & Wong, A. (2018). *A study on factors influencing acceptance of using mobile electronic identification applications in Sweden.* Retrieved from http://www.diva-portal.org/smash/get/diva2:1214313/FULLTEXT01.pdf (03 April 2019)

Chaisty, P., & Whitefield, S. (2015). Attitudes towards the environment: are post-Communist societies (still) different? *Environmental Politics, 24* (4), 598–616. DOI:10.1080/09644016.2015.1023575

Chen, S. (2006). Development of a instrument to assess views on nature of science and attitudes toward teaching science. *Science Education, 90* (5), 803-819. DOI: **10.1002/sce.20147**

Chinda, T., Techapreechawong, S., & Teeraprasert, S. (2012). *An investigation of relationships between employees' safety and productivity.* Retrieved from http://www.ppml.url.tw/EPPM/conferences/2012/download/SESSON4_A/10%20E145.pdf (12 October, 2019).

Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7* (3), 309-319.

Coertjens, L., Pauw, J.B, De Maeyer, S.D. & Petegem, P.V. (2010). Do schools make a difference in their students' environmental attitudes and awareness? Evidence from pisa 2006. *International Journal of Science and Mathematics Education, 8* (3), 497-522 DOI: https://doi.org/10.1007/s10763-010-9200-0

Çavuşoğlu, F., Altay, B., Nuriyeva, G. & Öngör, B. (2017). İlköğretim öğrencilerinin çevre bilgi ve tutumlarının değerlendirilmesi. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 20* (4), 254-259.

Demirtaş, F , Çinici, A . (2019). sekizinci sınıf öğrencilerinin ekolojik ayak izleri ile sürdürülebilir çevre tutumlarının çeşitli değişkenler açısından incelenmesi. *Atatürk Üniversitesi Kazım Karabekir Eğitim Fakültesi Dergisi , (38)* , 46-65 . DOI: 10.33418/ataunikkefd.549459

Deshpande, L. (2004). *Challenges in measurement of scientific attitude*. Paper presented at epiSTEME-1: An International Conference to Review Research on Science Technology And Mathematics Education (137-138), Goa, India.

Dinavasova, J. (2019). *Bireylerin çevresel tutumlarının sürdürülebilir tüketim davranışına etkisi üzerine bir araştırma*. Unpublished Master Thesis. Marmara University, Istanbul, Turkey

Doğuç, E. & Arıkan, G. (2018). Sağlik yönetimi öğrencilerinin çevresel tutum ve davranişlarinin incelenmesi (Gazi üniversitesi örneği) [Investigation of environmental attitudes and behaviors of health management students (Gazi university sample)]. *International Journal of Economic and Administrative Studies, 2018* (17. UİK Özel Sayısı), 293-306 DOI: 10.18092/ulikidince.431281

Dunlap, R.E., Van Liere., K.D., Mertig, A.G. & Jones, R.E. (2000). Measuring endorsement of the new ecological paradigm: A revised NEP scale. *Journal of Social Issues, 56* (3), 425-442. DOI: /10.1111/0022-4537.00176

Eagles, P. F. J. & Demare, R. (1999). Factors influencing children's environmental attitudes, *The Journal of Environmental Education, 30* (4), 33-37, DOI: 10.1080/00958969909601882

Field, A. (2013). *Discovering statistics using ibm spss statistics (4th Edition).* London: SAGE

Franzen, A., & Vogl, D. (2013). Two decades of measuring environmental attitudes: A comparative analysis of 33 countries. *Global Environmental Change, 23* (5), 1001–1008. DOI:10.1016/j.gloenvcha.2013.03.009

Garson, G.D., 2006. *Structural equation modeling*. North Carolina: G. David Garson and Statistical Associates Publishing

Gazeloğlu, C. (2019). Akademisyenlerin çevresel davranışlarının istatistiksel yöntemlerle belirlenmesi [The determination of academicians environmental behaviors by statistical methods]. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi [Adıyaman University Journal of Social Sciences]. 11* (31), 461-487. DOI: https://dx.doi.org/10.14520/adyusbd.409017

Grob, A. (1995). A structural model of environmental attitudes and behaviour. *Journal of Environmental Psychology, 15* (3), 209-220. https://doi.org/10.1016/0272-4944(95)90004-7

Grunert, S.C. & Juhl, H. J. (1995). Values, environmental attitudes and buying of organic foods. *Journal of Economic Psychology, 16* (1), 39-62. https://doi.org/10.1016/0167-4870(94)00034-8

Güneş, S., Eser, S., Çevik, C., Kundakçı, F. & Kapamaz, E. (2019). *18 yaş ve üzeri kişilerin çevre farkındalığı ile çevreye yönelik davranış durumları ve ilişkili faktörler.* 3 uluslararası 21. Ulusal Halk Sağlığı Kongresi [3th international 21st National Public Health Congress], 188-193. Antalya

Heberlein, T. A. (1972). The Land Ethic Realized: Some Social Psychological Explanations for Changing Environmental Attitudes. *Journal of Social Issues, 28* (4), 79–87. DOI:10.1111/j.1540-4560.1972.tb00047.x

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 2* (1), 104-121 DOI:10.1177/109442819800100106

Hinkin, T. R., Tracey, J. B., & Enz, C. A. (1997). Scale construction: Developing reliable and valid measurement instruments. *Journal of Hospitality & Tourism Research, 21*(1), 100-120. doi:10.1177/109634809702100108

Jechow, A. (2019). Observing the Impact of WWF Earth Hour on Urban Light Pollution: A Case Study in Berlin 2018 Using Differential Photometry. *Sustainability, 11,* 750.

Johanson, G.A., & Brooks, G.P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement, 70* (3), 394-400. DOI: 10.1177/0013164409355692

Johnson, R.L. & Morgan, G.B. (2016). Survey scales: Investigating scale quality. New York, NY: The Guilford Press.

Kahriman Pamuk, D. (2019). Okul öncesi öğretmen adaylarının sürdürülebilir kalkınmaya yönelik tutumlarının belirlenmesi. *Turkish Journal of Primary Education, 4* (2), 72-84.

Kaiser, F.G., Merten, M. & Wetzel, E. (2018). How do we know we are measuring environmental attitude? Specific objectivity as the formal validation criterion for measures of latent attributes. *Journal of Environmental Psychology, 55*, 139-146.

Kalaycı, Ş. (2010). *Spss uygulamalı çok değişkenli istatistik teknikleri*. (5. Baskı). Asil Yayın Dağıtım Ltd. Şti. Ankara.

Karaçar, E . (2019). Ilgaz dağı milli parkını ziyaret eden turistlerin çevreye yönelik tutumları [Environmental attitudes of tourists visiting national park of ilgaz mountain]. *Safran*

Kültür ve Turizm Araştırmaları Dergisi [Saffron Journal of Culture and Tourism Researches] , 2 (2) , 211-224. Retrieved from https://dergipark.org.tr/en/pub/saktad/issue/48413/595349

Karaküçük, S , Ayyildiz Durhan, T , Akgül, B , Aksin, K , Özdemir, A . (2019). Oryantiring Sporcularında Ekosentrik, Antroposentrik, Antipatik Yaklaşımların Rekreasyon Fayda ile İlişkisi [The Relationship Between Recreation Benefit And Ecocentric, Anthroposentric, Antipatic Approaches in Orienteering Athletes]. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi [Gazi University Journal of Gazi Educational Faculty] , 39* (3) , 1263-1288 . DOI: 10.17152/gefad.578109

Karasaç, E. (2019). *Mobil uygulama destekli çevre eğitiminin beşinci sınıf öğrencilerinin akademik başarılarına, teknolojiye ve çevreye karşı tutumlarına etkisinin incelenmesi.* Unpublished Master Thesis. Marmara University. İstanbul, Turkey

Kaya, Ç. & Altinkurt, Y. (2018). Öğretmenlerin psikolojik sermayeleri ile tükenmişlik düzeyleri arasındaki ilişkide psikolojik ve yapısal güçlendirmenin rolü [Role of Psychological and Structural Empowerment in the Relationship between Teachers' Psychological Capital and Their Levels of Burnout]. *Eğitim ve Bilim, 43* (193), 63-78, DOI: http://dx.doi.org/10.15390/EB.2018.6961

Kefeli, N., Taş, E. & Yalçın, M. (2018). Kelime oyunları ile fen öğretiminin öğrencilerin çevreye yönelik tutumuna etkisi [The effect of teaching science with word games on the attitudes of students towards environment]. *International e-Journal of Educational Studies (IEJES), 2* (3), 44-52. DOI: 10.31458/iejes.388619

Kelemen, R.D. (2001). The limits of judicial power. *Comparative Political Studies, 34* (6), 622-650. doi:10.1177/0010414001034006002

Kılıç, Ç. & Girgin, S. (2019a). 2-ÇDM tutum ölçeğinin üniversite öğrencilerine uyarlanması ve çevreye yönelik tutumun çeşitli değişkenler açısından değerlendirilmesi [adaptation of 2-MEV attitude scale to university students and evaluation of the attitude towards environment in terms of various variables]. *GEFAD [GUJGEF], 39* (3), 1203-1233.

Kılıç, Ç. & Girgin, S. (2019b). Ortaokul öğrencilerinin çevreye yönelik tutumlarının 2-ÇDM tutum ölçeği kullanılarak çeşitli değişkenler açısından değerlendirilmesi [Investigation of Secondary School Students' Attitudes Towards Environment in terms of Several Variables by Using 2-MEV Attitude Scale]. *Eğitim ve Toplum Araştırmaları Dergisi [Journal of Research in Education and Society], 6* (2), 215-232.

Kline, R. B. (2011). *Principles and practice of structural equation modeling (3rd edition).* New York: The Guilford Press

Liu, K.S., Hsueh, S-L. & Chen, H-Y. (2018). Relationships between environmental education, environmental attitudes, and Behavioral intentions toward ecolodging. *Open House International, 43* (2), 5-12.

Lovelace, M. and Brickman, P. (2013). Best practices for measuring students' attitudes toward learning science. *CBE-Life Sciences Education*, *12* (4), 606-617. DOI: 10.1187/cbe.12-11-0197

McGuire, N.M. (2015). Environmental education and behavioral change: an identity based environmental education model. *International Journal of Environmental & Science Education, 10* (5), 695-715. DOI: 10.12973/ijese.2015.261a

Milfont, T. L., & Duckitt, J. (2010). The environmental attitudes inventory: A valid and reliable measure to assess the structure of environmental attitudes. *Journal of Environmental Psychology, 30* (1), 80–94. DOI:10.1016/j.jenvp.2009.09.001

Mol, A. P. J. (2006). From Environmental Sociologies to Environmental Sociology? *Organization*

& Environment, 19 (1), 5–27. DOI:10.1177/1086026605285643

Newsom, J.T. (2017). *Nested models, model modifications, and correlated errors.* Retrieved from http://web.pdx.edu/~newsomj/semclass/ho_nested.pdf (3 February, 2020).

Oğuz, Y , Yılmaz, V . (2019). Çevre Bilincinin Yeşil Yıldızlı Otel Tercihine Etkisi: ESOGÜ Turizm Fakültesi Öğrencileri Örneği. *Eskişehir Osmangazi Üniversitesi İktisadi ve İdari Bilimler Dergisi, 14* (1) , 51-66. DOI: 10.17153/oguiibf.411968

Otto, S., Kröhne, U. & Richter, D. (2018). The dominance of introspective measures and what this implies: The example of environmental attitude. *PLoS ONE 13* (2), : e0192907. DOI: https://doi.org/10.1371/journal.pone.0192907

Pedroso, R., Zanetello, L., Guimaraes, L., Pettenon, M., Goncalves, V., Scherer, J., Kessler, F., & Pechansky, F. (2016). Confirmatory factor anlaysis (CFA) of the crack use relapse scale (CURS). *Archives of Clinical Psychiatry, 43* (3), 37-40.

Price, G.G. (2019). *Community environmental attitudes and the Victorian school curriculum: An historical narrative of their connections from 1835 to 2000*. Unpublished Doctorate Thesis. Melbourne Graduate School of Education, The University of Melbourne, Victoria, Australia.

Rao, B.S. & Suribabu, M. (2018). Different dimensions of environmental attitude of prospective secondary school teachers. *Research and Reflections on Education, 18* (1), 1-10

Sakurai, R., Tsunoda, H., Enari, H., Siemer, W.F., Uehara, T. & Stedman, R.C. (2020). Factors affecting attitudes toward reintroduction of wolves in Japan. *Global Ecology and Conservation, 22*, e01036, DOI: https://doi.org/10.1016/j.gecco.2020.e01036

Scarce, S. & Mascarenhas, M. n.d *Environmental sociology syllabi and instructional materials.* https://www.asanet.org/sites/default/files/savvy/images/members/docs/pdf/teaching/SylEnvironmental03.pdf#page=173 (20 March 2020)

Schmithuesen, F. (2004). *Forest Policy Developments in Changing Societies – Political Trends and Challenges to Research. Published in: Towards the Sustainable Use of Europe's Forests: Forest Ecosystem and Landscape Research.* EFI Proceedings No 49 (2004): 87-99, Joensuu, Finland

Schultz, P.W. & Zelezny, L. (1999). Values as predictors of environmental attitudes: evidence for consistency across 14 countries. *Journal of Environmental Psychology, 19* (3), 255-265. https://doi.org/10.1006/jevp.1999.0129

Shadfar, M. & Malekmohammadi, I. (2013). Application of Structural Equation Modeling (SEM) in restructuring state intervention strategies toward paddy production development. *International Journal of Academic Research in Business and Social Sciences, 3* (12), 576-618. DOI: 10.6007/IJARBSS/v3-i12/472

Sica, C. & Ghisi, M. (2007). *The Italian versions of the Beck Anxiety Inventory and the Beck Depression Inventory-II: Psychometric properties and discriminant power.* In M.A. Lange (Ed.), Leading - Edge Psychological Tests and Testing Research (pp. 27-50). New York: Nova

Stets, J. E., & Biga, C. F. (2003). Bringing Identity Theory into Environmental Sociology. *Sociological Theory, 21* (4), 398–423. doi:10.1046/j.1467-9558.2003.00196.x

Şeker, F. & Sert, H. (2019). Fen bilimleri dersinde kuş eğitiminin başarı ve çevreye yönelik tutuma etkisi [The effect of bird education in science lesson on student achievement and attitude toward environment]. *Online Fen Eğitimi Dergisi [Online Science Education Journal], 4* (2), 166-182.

TCC (Türkiye Cumhuriyeti Cumhurbaşkanlığı). (2018). *Millet bahçeleri projemiz milletimiz tarafından büyük bir şevkle sahiplenilmiştir*.

https://www.tccb.gov.tr/haberler/410/99683/-millet-bahceleri-projemiz-milletimiz-tarafindan-buyuk-bir-sevkle-sahiplenilmistir- (27 March 2020)

Thompson, S. C. G. & Barton, M.A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology, 14* (2), 149-157. https://doi.org/10.1016/S0272-4944(05)80168-9

Topkaya, Y., & Doğan, Y. (2019). 7. sinif sosyal bilgiler dersindeki "çevre sorunlari ve çevreyle ilgili örgütler" konularinin öğretilmesinde eğitici çizgi romanlarin etkisi: karma bir araştirma [the effect of educational comics on teaching environmental issues and environmental organizations topics in 7th grade social studies course: a mixed research]. *Eğitim ve Bilim [Education and Science], 45* (201). 167-188. DOI:http://dx.doi.org/10.15390/EB.2019.8575

Tuncel, G. (2018). Alternative environmental applications in developing "sensitivity to natural environment" value in social studies. *International Journal of Geography and Geography Education, 38*, 91-103.

Türk, Z. & Çakır, F. (2019). Ekoturistlerin Çevresel Tutum ve Davranışları ile Ekoturizm Aktiviteleri Arasındaki İlişkiye Yönelik Bir Araştırma: Fethiye ve Ortaca Ekoçiftlikleri Örneği. *Üçüncü Sektör Sosyal Ekonomi Dergisi [Third Sector Social Economic Review], 54* (4), 1671-1684.

Ulas Kadıoglu, B. & Uncu, F. (2018). Health Sciences students' attitudes towards environmental problems. *Journal of Current Researches on Health Sector, 8* (2), 285-296

Uzunöz, A. (2011). Reliability and validity towards environment attitude scale for secondary school students. *Educational Research and Reviews, 6* (16), 893-901. DOI: 10.5897/ERR11.236

Vassallo, M., & Saba, A. (2015). Does money for grocery expenditure sway Italian consumers' motivational values in predicting Attitude towards eco-sustainable food products?. *Contemporary Management Research, 11* (1), 3-22. DOI:10.7903/cmr.13840

Wang, H-H., Hong, Z-R., Lin, H-S. & Tsai, C-Y. (2020). The relationships among adult sustainability attitudes, psychological well-being, nature relatedness, and interest in scientific issues. *Current Psychology*. DOI: https://doi.org/10.1007/s12144-020-00708-1

Watkins, M. W. (2000). *Monte carlo PCA for parallel analysis* [computer software]. State College, PA: Ed & Psych Associates.

Witt, A.H., Boer, J. & Boersema, J.J. (2014). Exploring inner and outer worlds: A quantitative study of worldviews, environmental attitudes, and sustainable lifestyles. *Journal of Environmental Psychology, 37*, 40-54. DOI: https://doi.org/10.1016/j.jenvp.2013.11.005

Wong., M. & Lian, S. (2003). *Development of a self-efficacy scale for assessing secondary school students' science self-efficacy beliefs*. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.472.8479 Retrieved October 2014

Yılmaz, S., Yılmaz-Bolat, E. & Gölcük, İ. (2020). Erken çocukluk döneminde uygulanan çevre eğitim programının çocukların çevreye karşı tutumları üzerindeki etkisi. *YYÜ Eğitim Fakültesi Dergisi, 17* (1), 557-578. DOI: 10.33711/yyuefd.693833

Yiğit, K. (2019). *Sürdürülebilir yaşam için geri dönüşüm eğitiminin 8. sınıf öğrencilerinin çevre bilincine etkisi.* Unpublished Master Thesis. Marmara University, Istanbul, Turkey

Yüksel, Y.E. & Kaya, M.T. (2019). Environmental attitude of pre-service teachers: a case study at Afyonkarahisar. *Turkish Studies, 14* (2), 139-149. DOI: 10.7827/TurkishStudies.14847

APPENDIX A: EAS Original

	ÇEVRE TUTUM					
1	İhtiyaçlarımız için doğal çevre göz ardı edilebilir (önemsenmeyebilir)	**1**	**2**	**3**	**4**	**5**
2	İnsan doğayı doğru biçimde şekillendirebilir bu yüzden Doğaya uyum sağlamamız gerekmiyor	**1**	**2**	**3**	**4**	**5**
3	Çevre probleminin çözümünde yer almak isterim	**1**	**2**	**3**	**4**	**5**
4	Bazı canlı türlerinin yok olması önemli değildir	**1**	**2**	**3**	**4**	**5**
5	Doğal kaynakların tükenmesi gelecekteki önemli bir problemdir	**1**	**2**	**3**	**4**	**5**
6	Hayvan severlerin tepkilerini gereksiz bulurum	**1**	**2**	**3**	**4**	**5**
7	Birçok çevre probleminin (kirlilik, nesil tükenmesi, ozon delinmesi) önemli olduğunu düşünüyorum	**1**	**2**	**3**	**4**	**5**
8	Sadece bazı türlerin yok olması önemlidir	**1**	**2**	**3**	**4**	**5**
9	Çevre probleminin çözülmesinde katkım olması gerektiğini düşünüyorum	**1**	**2**	**3**	**4**	**5**
10	Hava kirliliği ile ilgilenirim	**1**	**2**	**3**	**4**	**5**
11	Var olan yasalar çevrenin korunmasında yetersiz kalmaktadır	**1**	**2**	**3**	**4**	**5**
12	Gıda problemini çözmek için ormanlık alanlar tarlaya dönüştürülmeli	**1**	**2**	**3**	**4**	**5**
13	Doğanın kendini yenileyebilme özelliğinin olması, çevre sorunlarıyla ilgilenmemi gereksiz kılar	**1**	**2**	**3**	**4**	**5**
14	Su kirliliği ile ilgilenirim	**1**	**2**	**3**	**4**	**5**
15	Kişisel sorumluluğum çevrenin korunmasında önemlidir	**1**	**2**	**3**	**4**	**5**
16	Gereksiz yere akan çeşmeyi kapatırım	**1**	**2**	**3**	**4**	**5**
17	Çevrenin temizlenmesi belediyenin işidir(sorumluluğundadır)	**1**	**2**	**3**	**4**	**5**
18	Yeni yolların (otoyolların) yapılması doğayı etkilemez	**1**	**2**	**3**	**4**	**5**
19	Fosil yakıtları yerine alternatif kaynaklara yönelinmeli	**1**	**2**	**3**	**4**	**5**
20	Gereksiz yere yanan ışıkları kapatırım	**1**	**2**	**3**	**4**	**5**

APPENDIX B: EAS English

	ENVIRONMENTAL ATTITUDE					
1	Natural environment might be ignored (neglected) for our needs	**1**	**2**	**3**	**4**	**5**
2	We do not need to fit to nature since humans can shape it correctly	**1**	**2**	**3**	**4**	**5**
3	I would like to involve in the solution of environmental problems	**1**	**2**	**3**	**4**	**5**
4	Extinction of some species is not important	**1**	**2**	**3**	**4**	**5**
5	One of the important problems in the future will be depletion of natural sources	**1**	**2**	**3**	**4**	**5**
6	I think animal lovers' reactions are unnecessary	**1**	**2**	**3**	**4**	**5**
7	I think most environmental problems (pollution, extinction, ozone layer depletion) are important	**1**	**2**	**3**	**4**	**5**
8	Only extinction of some species is important	**1**	**2**	**3**	**4**	**5**
9	I think I should contribute in the solution of environmental	**1**	**2**	**3**	**4**	**5**

	problems					
10	I take interest in air pollution	**1**	**2**	**3**	**4**	**5**
11	Existing laws are inadequate in conservation of environment	**1**	**2**	**3**	**4**	**5**
12	To solve food crisis, forest lands must be transformed to crop fields	**1**	**2**	**3**	**4**	**5**
13	It is unnecessary for me to take interest in environmental problems since nature has the ability of regeneration	**1**	**2**	**3**	**4**	**5**
14	I take interest in water pollution	**1**	**2**	**3**	**4**	**5**
15	My personal responsibilities are important in conserving the environment	**1**	**2**	**3**	**4**	**5**
16	I turn off the tap if water flows unnecessarily	**1**	**2**	**3**	**4**	**5**
17	Cleaning surroundings is responsibility of municipal authority	**1**	**2**	**3**	**4**	**5**
18	Building new roads (highways) does not affect nature	**1**	**2**	**3**	**4**	**5**
19	Alternative sources should be used instead of fossil fuels	**1**	**2**	**3**	**4**	**5**
20	I turn off light which are kept on unnecessarily	**1**	**2**	**3**	**4**	**5**