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A Research on the Environmental Identities and Environmental Risk Perceptions of Classroom and Science Teachers According to Different Variables

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ABSTRACT

Environmental identity in human environmental behaviour expresses the extent to which the person relates to the environment while defining himself or herself. The relationship between human and the environment is mutual, and human's understanding of environment is essential to the environment. Perception of environmental risk is subjective because it is about personal view of environmental risk. The purpose of this study is to evaluate classroom teachers' and science teachers' perceptions of environmental risks based on several variables. For this purpose, a total of 309 classroom and science teachers participated in the study. The instruments used for data collection were the Environmental Identity Scale and the Environmental Risk Perception Scale. Both descriptive and inferential analyses were conducted on the data obtained. The analyses conducted revealed that environmental identity and environmental risk perception were high among teachers, there were no differences between subjects, and there was a positive relationship between environmental identity and environmental risk perception.

Keywords:
Environmental identity, environmental behavior, environmental risk perception, nature connectedness

1. Introduction

The human-environment relationship is among the most studied subjects in environmental education. Human behavior is important in the reciprocal relationship between humans and the environment. Wherever a person is, they are physically and socially in contact with the environment. Human relations cannot be explained independently of context, place, and environment. Environmental research presents the effects of individuals on the environment or their perceptions about the environment. People's actions on a local or global scale, the effects of these actions on the environment, and many threats to the sustainable environment originate from human behavior (Yaşaroğlu, 2020). Therefore, it is crucial to examine the environmental behaviors of humans to adopt healthier approaches to the environment and make environmental education activities more effective.

The importance of human behavior on the environment increases the importance of environmental education. Environmentally friendly behaviors help to provide a more livable world and a sustainable environment. Environmental identity and environmental risk affect environmental behavior, as will be discussed in detail in the theoretical part. Another factor is teachers' environmental risk perceptions and environmental identities as an important figure in environmental education because teachers' attitudes also affect teacher motivation

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for education. This study is about environmental identities and environmental risk perceptions of classroom and science teachers.

Environmental education is important for raising an environmentally conscious, sensitive, and responsible generation. The proficiency levels of educators who will give environmental education are also significant (Öztürk et al., 2015). Raising individuals who are conscious about and sensitive to the environment, who have environmental knowledge, and who can also be active participants in environmental problems is one of the effective ways to find solutions to environmental problems.

Perceiving and making sense of the immediate phenomena around the individuals is an effective agent in developing positive attitudes towards the environment (Yücel & Özkan, 2018). In addition, the aim of environmental education should be the development of behaviors to protect the environment. People should be raised as individuals who have a high perception of environmental risk, and they should turn this perception into attitudes and behaviors. Environmental education should be provided at an early age for an environmentally sensitive and conscious society (Tümer & Sümen, 2020; Yaşaroğlu, 2012).

1.1. Environmental Identity

Identity is defined as a collection of signs, qualities, and characteristics that show what kind of a person is as a social being (TDK, 2020). The identity of humans as social beings significantly affects our communication and interaction with our social and physical environments. Environmental identity is an important factor used in environmental studies to understand environmental-human interaction.

Identities define social roles, and these roles require several responsibilities. Environmental identity can describe how abstract global issues become urgent and personal for an individual. Environmental identity also determines the course of action in line with their sense of self. Understanding identity and its role in mediating behavior towards the natural world helps us understand research results and enables us to draw important practical implications. The better we understand what makes people passionate about the environment, the better we understand the psychological mechanisms that promote protective environmental policies and behaviors (Clayton & Opotow, 2004).

Environmental identity defines who people are while reflecting the extent to which people place environmental protection at the center of their lives and the extent to which they express environmental protection through their behavior (Gatersleben et al., 2012). Blatt states that people can define themselves in different ways about their identities related to nature by using studies in fields such as deep ecology, environmental ethics, ecopsychology, environmental education research, and history of science. In an extensive list, Blatt notes that humans can define themselves as an essential or insignificant part of nature, as someone who harms nature, as superior to nature, as conquerors of nature, as independent or separate from nature, as separate but connected to nature, as dependent on nature, as protectors of nature, and as defenders of nature. Our environmental identity can contain one or more of these feelings, which we think may conflict with each other (Blatt, 2013).

A critical aspect of identity is it being linked to the natural world. As humans, we try to express our environmental identity by making connections (place identity) to certain natural objects such as pets, trees, or geographic locations (Clayton, 2003). Research also proved that the physical environment has strong connections with the sense of self and that identity is an important behavioral mediator (Devine-Wright & Clayton, 2010). On the other hand, Clayton et al. associated environmental identity with general environmental anxiety and with the sense of connection with animals (Clayton et al., 2011).

Along with environmental identity, it is necessary to include place identity and green self-identity in environmental identity. “Place identity”, which is one of these concepts, is a cognitive mechanism according to most studies and is a component of self-concept or personal identity. Place identity also develops environmentally responsible behaviors and plays a vital role in developing pro-environmental behaviors (Hernández Bernardo et al., 2010). Another concept is the green identity. “Green” self-identity, in other words, to which extent do the individuals consider themselves as environmentalists, generally predicts pro-environmental intentions and behaviors (Lalot et al., 2019). In fact, green identity as a concept can be associated with being more environmentalist. Lalot et al. revealed an overall positive correlation between self-identity and pro-environmental intentions in four empirical studies evaluating green self-identity and measuring

green and non-green behaviors in a person's past life. In addition, the environmental identities of the participants were also found to be high in this study (Lalot et al., 2019).

Environmental identity is an important predictor of the intention to actualize pro-environmental behaviors. If the environmental self-identity is strong, a person's judgments, attitudes, and intentions are pro-environmental and environmentally friendly (Carfora et al., 2017; Gatersleben et al., 2012; Van der Werff et al., 2014). Many studies show that environmental identity is effective on pro-environmental behaviors. Although Payne (2001) claims that research on environmental identity is insufficient, the number of studies has increased in recent years, especially within the scope of environmental psychology (Devine-Wright & Clayton, 2010). Studies have shown that a solid environmental self-identity increases behaving pro-environmentally and increases motivation (Ajibade & Boateng, 2021; Carfora et al., 2007; Clayton et al., 2011; Gatersleben et al., 2012; Kashima et al., 2014; Van der Werff et al., 2014; Whitmarsh & O'Neill, 2010), it contributes to energy savings (Bonan et al., 2021) and is also associated with support for animal rights (Clayton et al., 2011). There is an urgent need for people to take action to reduce the environmental damage caused by climate change and other environmental crises they face. Accordingly, it is suggested that the relationship between nature attachment and environmental activism can be understood as a result of collective identity processes (Schmitt et al., 2018).Understanding what makes people passionate about the environment also makes it easier to understand the psychological mechanisms that encourage protective environmental policies and behaviors (Clayton & Opotow, 2004). This leads us to environmental education. Environmental education is an element that affects the formation or strengthening of environmental identity. One study shows that the Environmental Science course affects the environmental identities of students. It has been observed that many students taking the course care about environmental identity as they gain knowledge about environmental problems and become aware of the environmental effects of their behavior (Blatt, 2013). In another study, a group of young people travelling to South Asia to participate in a global education program focusing on the effects of climate change shows that these experiences and interactions effectively develop environmental identity. Social interactions with different types of people have been shown to have characteristic effects on the development of young people's environmental identities (Stapleton, 2015).Environmental Risk

In general, risk is a situation, event, or activity that has uncertain or negative consequences and affects something people value. The two critical components of risk are the severity and uncertainty of the negative outcome or loss. To characterize an outcome as negative involves assessing the events, namely judgment. Perception of risk refers to people's subjective judgments about the risk associated with any situation, event, activity, or technology (Böhm & Tanner, 2019). As an emotion, risk expresses our quick, instinctive, and intuitive reactions to danger (Slovic et al., 2004). In other words, risk is the subjective judgment of individuals about the severity and characteristics of threat. For a risk to be a problem for an individual, it must first be perceived as a problem (Böhm & Tanner, 2019; Kahyaoğlu, 2012).

Environmental risks differ from other risks in various ways. First, environmental risks are characterized as complex causal relationships and high complexities and uncertainties, requiring multiple outcomes. Second, environmental risks stem from the collective behaviors of individuals rather than single acts. Therefore, problems may not be solved easily since many people should respond collectively. Third, the consequences of environmental risks are generally delayed, and they are geographically dispersed. The people who cause a risk and those who suffer from the consequences may differ. Hence, environmental risks cause ethical problems (Böhm & Tanner, 2019).

Different factors affect risk perception. The perceptions of regular participants and experts were examined in a study investigating ecological risks related to human activities that may adversely affect water resource environments. Four factors were determined in this study: ecological impact, human benefits, controllability, and knowledge (McDaniels et al., 1997). It was stated that higher risk perception might positively impact increasing people's willingness to deal with environmental risks (De Dominicis et al., 2015). Personal and sentimental values and ethos affect the awareness of ecological risks (Böhm & Tanner, 2019; Slimak & Dietz, 2006). For example, in a study, it was found that there is a moderately significant positive correlation between the human-centered approaches of primary school teacher candidates and their environmental risk perceptions and environmental behaviors (Kaya et al., 2012). Environmental education is another factor affecting environmental risk. In a study conducted with university students, a significant and positive relationship was found between environmental education and environmental risk perceptions of students.

The students who participated in the research stated that taking at least one environmental course during their university education affected all aspects of their environmental risk perceptions (Durmuş-Özdemir & Şener, 2016).

A study measuring flood risk perceptions in a residential area in Italy concluded that flood risk perception alone explained most of the variance in preventive behaviors to cope with flood risk (De Dominicis et al., 2015). This shows that a high perception of environmental risk increases the probability of exhibiting environmentalist behaviors. It was found out in another study conducted with university students that the most frequently consulted sources of information about risk perceptions were the internet and social networks. Nevertheless, information from internet resources and social networks was associated with an even higher risk perception (Carducci et al., 2019).

Place attachment is another factor of environmental risk. A study on environmental risk showed that place attachment is an important variable (De Dominicis et al., 2015). Another study determined that security feelings about a place cause environmental risk perception to be higher (Quinn et al., 2019). This can be interpreted as the higher the importance of the place, the higher the reflexes to protect it are. Likewise, people's responsibility to protect their family and friends also significantly affects their individual risk perceptions (Liu et al., 2020).

This study evaluates classroom and science teachers' environmental identities and environmental risk perceptions. In primary schools in Turkey, life sciences are given as a course in the first three grades, and science is taught in the third and fourth grades. Classroom teachers' environmental identities and environmental risk perceptions should be evaluated since environmental issues are also covered within the scope of life sciences courses. However, no studies in the literature directly evaluate risk perceptions and environmental identities of classroom teachers. On the other hand, comparing the environmental identities and environmental risk perceptions of science teachers using the findings obtained from the study with classroom teachers can also contribute this research to the literature.

1.2. Research Problems

This study aims to assess environmental identities and perceptions of environmental risks by classroom and science teachers using several variables. Within this objective, answers to the following questions were sought:a. What are the environmental identity and environmental risk perceptions of classroom teachers and science teachers?

b. Do classroom and science teachers' environmental identities and environmental risk perceptions differ according to gender, subject, and natural disaster experiences?

c. What is the relationship between the environmental identities and environmental risk perceptions of teachers?

Today, with the introduction of information and communication technologies into every aspect of daily life, it is seen that we are in rapid change through the formation of a digital world. The digital world consists of every activity carried out in the cyber world (Kabakçı Yurdakul et al., 2013). Digitizing in every aspect gathered momentum with the pandemic experienced in 2020 in the whole world. Online classes during the pandemic resulted in increased screen time, and AAP recommends that parents be more lenient about this subject (AAP, 2020). Increased screen time has also been reported in Turkey due to COVID-19 (BAU, n.d.). Research indicates that students' screen time increased five hundred times with the pandemic period in Turkey (Hürriyet, 2021). One of the most fundamental reasons for the increase in screen time is the transformation to home-based online education instead of face-to-face education. Face-to-face education at schools officially stopped in Turkey when the first COVID-19 case was declared, and online education started. Other countries experienced similar events; for example, China introduced similar measures as well (Wang et al., 2020).

2. Methodology

2.1. Research Model

Since this study aims to determine the environmental identity and risk perceptions of classroom and science teachers, the correlational study method, one of the quantitative research method modelswas used.

Correlational research is a survey type that allows the researcher to determine the size and degree of a current relationship between two or more continuous quantitative variables. Correlation research involves collecting data from a sample of individuals or objects to determine the degree of relationships between two or more variables for the probability of making predictions based on these relationships (Lavrakas, 2008).

2.2. Research Sample

The study group of this research consisted of 197 classroom teachers and 112 science teachers, who were included in the group using the convenience sampling method, working in a province in the Eastern Anatolia Region (n= 309). Convenience sampling is a technique that aims to include close, easily accessible, or suitable people in the research and is frequently used in social research (Bailey, 1994; Bhattacherjee, 2012; Bryman, 2012; Howitt, 2016).

The demographic information of the teachers who participated in the study shows that 63.75% of 309 teachers were classroom teachers, and 36.25% were science teachers. 180 (58.25%) were female, and 129 (41.75%) were male. According to seniority, 136 teachers have 1-3 years, 97 teachers 3-5 have years, 43 teachers have 5-7 years, and 33 teachers have seven years or more experience. Finally, 161 teachers (52.10%) stated that they had experienced a natural disaster, while 148 teachers (47.90%) indicated that they did not experience any natural disasters.

2.3. Data Collection Tools and Procedure

A data collection tool consisting of three sections was used as a data collection tool in the research. The first section consists of questions written by the researchers to collect demographic information about classroom and science teachers. The second part of the data collection tool is the Environmental Identity Scale (EIS), and the third part is the Environmental Risk Perception Scale (ERPS). Descriptive information on scales is provided below.

Environmental Identity Scale: The EIS developed by Clayton (2003) and adapted to Turkish by Clayton and Kılınç (2013), consists of 24 5-point Likert-type items and 4 sub-dimensions. The items in the scale consist of items at the level of individuals' relations with the natural environment to determine the environmental identities of the participants. The scale consists of the following sub-dimensions: "Environmental Identity", "Desire to be Nature-Connected", "Resemblance to Nature", and "Environmental Behavior". Participants who filled out the scale were asked to rate each item between 1 (Strongly Disagree) and 5 (Strongly Agree). Clayton (2003) found Cronbach's Alpha reliability coefficient of the scale to be 0.90, while Clayton and Kılıç found it between .60 and .80 for four factors. In this study, the internal consistency coefficients of the sub-dimensions were calculated as between .62 and .92.

Environmental Risk Perception Scale: The ERPS was developed by Slimak and Dietz (2006), and adapted to Turkish by Altunoğlu and Atav (2009). The 5-point Likert scale was adapted to Turkish as a 7-point Likert scale. It consists of 23 items and four sub-dimensions: ecological risks, chemical waste risk, resource depletion risk, and global environmental risks. Participants were asked to rate the items in a scale between 1 (Not at all Important) and 7 (Very Important). Slimack and Diez calculated the Cronbach's Alpha internal consistency coefficients of sub-dimensions as0.64 and .91; Altunoğlu and Atav calculated it as .69 and .82. In this study, the reliability coefficients for the sub-dimensions were calculated as between .65 and .87.

The data were collected in 2020 – 2021. The scales were converted into online forms after obtaining the necessary permissions. The online forms prepared were sent to the classroom and science teachers by the researchers using digital environments, and the teachers were asked to fill out the form. It took three weeks for the teachers to fill out the form. Ethical rules were followed in all processes of this article.

2.4. Data Analysis

The obtained forms were checked physically after the teachers filled out the online forms. It was observed that the forms were correctly and appropriately filled. The data were transferred to the SPSS program, and analyses were carried out using 309 data collection tools. Both descriptive and inferential statistics were used in the analysis of the data. Descriptive statistics such as arithmetic mean and standard deviation were used to analyze the scale and its sub-dimensions. In the inferential analysis, the normality distribution of the data was

tested first, and analyses were carried out on the data that were not found to have a normal distribution (Table 1). Accordingly, Kruskal-Wallis and Mann-Whitney-U tests were applied according to the gender, subject of the teachers, and whether or not the teachers experienced natural disasters. In addition, the Spearman correlation coefficient (*r*) was calculated to determine the environmental risk perceptions of teachers according to their environmental identities.

Table 1. *Kolmogorov Simirnov Tets Results for Normality*

Variables	Statistic	df	p
Environmental Identity	.13	309	.00*
Desire to be Nature-Connected	.19	309	.00*
Resemblance to Nature	.13	309	.00*
Environmental Behavior	.18	309	.00*
Ecological Risks	.18	309	.00*
Chemical Waste Risk	.21	309	.00*
Resource Depletion Risk	.08	309	.00*
Global Environment Risk	.22	309	.00*

*p < .05

2.5. Ethical

This study was performed in compliance with ethical procedures. The approval of the ethics committee was required. It was granted by the decision of the Ethics Committee of Bingöl University on 30.12.2020 under the number E-23859.

3. Findings

This section presents the descriptive findings of the scales, the difference in environmental identity and risk perceptions according to the subject, gender, seniority, and natural disaster experience, and the mutual relationship between environmental identity and environmental risk perceptions. The environmental identities and environmental risk perceptions of classroom teachers (n= 197) and science teachers (n= 112) were analyzed in accordance with the first problem.

The analysis showed that the desire to be nature-connected ($\overline{X}$ = 4.40; ss=.64) and environmental identities ($\overline{X}$ = 4.30; ss=.64) of classroom teachers (n= 197) were extremely high (Strongly Agree). Resemblance to nature ($\overline{X}$ = 4.15 ss=.66) and environmental behavior ($\overline{X}$ = 4.04; ss=.77) were high (Agree). It was seen that the level of environmental identity ($\overline{X}$ = 4.30; ss=.64), desire to be nature-connected ($\overline{X}$ = 4.40; ss=.64), resemblance to nature ($\overline{X}$ = 4.15 ss=.66), and environmental behavior ($\overline{X}$ = 4.04; ss=.77), sub-factors of environmental identity, of science teachers (Strongly Agree) were extremely high.

When the environmental risk perceptions of teachers were analyzed, it was concluded that the classroom teachers thought that the resource depletion risk ($\overline{X}$ = 5.43; ss= 1.13) as important, and ecological risks ($\overline{X}$ = 6.25; ss=.86), chemical waste risk ($\overline{X}$ = 6.34; ss=.82) and global environment risks ($\overline{X}$ = 6.22; ss= .82) as very important. Similarly, science teachers thought that resource depletion risk ($\overline{X}$ = 5.57; ss= 1.11) as important, ecological risks ($\overline{X}$ = 6.37; ss=.68), chemical waste risk ($\overline{X}$ = 6.51; ss=.63) and global environment risks ($\overline{X}$ = 6.34; ss= .75) as very important.

There is no significant difference in environmental identity (U=11342.50, p > 0.05), desire to be nature-connected (U=11462.50, p > 0.05), to nature (U=10462.50, p > 0.05), and ecological behavior (U=10799.50, p > 0.05) according to the results of the Mann Whitney U test, which was conducted to test the differences in environmental identity and environmental risk perception among teachers based on gender. A significant difference in favor of women regarding perceptions of global environmental risks (U=9348.50, p<0.05) and ecological risks (U=9870.00, p<0.05) was found in environmental risk perceptions. There is no significant difference between the chemical waste risk (U=10354.50, p<0.05) and the resource depletion risk (U=10643.500, p>0.05).

Table 2. *U-Test Results on Differences in Environmental Identity and Environmental Risk Perception by Gender*

Factor	Gender	n	Mean of Ranks	Total of Ranks	U	p
Environmental Identity	Female	180	156.49	28167.50	11342.500	.727
	Male	129	152.93	19727.50		
Desire to be Nature-Connected	Female	180	115.82	28047.50	11462.500	.845
	Male	129	153.86	198.4750		
Resemblance to Nature	Female	180	161.38	29047.50	10462.500	.134
	Male	129	146.10	18847.50		
Environmental Behavior	Female	180	159.50	28710.50	10799.500	.282
	Male	129	148.72	19184.50		
Ecological Risks	Female	180	164.67	29640.00	9870.000	.022*
	Male	129	141.51	18255.00		
Chemical Waste Risks	Female	180	161.98	29155.50	10354.500	.091
	Male	129	145.27	18739.50		
Resource Depletion Risk	Female	180	160.37	28867.00	10643.000	.209
	Male	129	147.50	19028.00		
Global Environment Risk	Female	180	167.56	30161.50	9348.500	.002*
	Male	129	137.47	17733.50		

*p<.05

Table 3. *U-Test Results on the Difference in Environmental Identity and Environmental Risk Perceptions by Subject*

Factor	Subject	n	Mean of Ranks	Total of Ranks	U	p
Environmental Identity	Classroom Teacher	197	150.87	29720.50	10217.500	.276
	Science Teacher	112	162.27	18174.50		
Desire to be Nature-Connected	Classroom Teacher	197	152.11	29965.50	10462.500	.438
	Science Teacher	112	160.08	17929.50		
Resemblance to Nature	Classroom Teacher	197	149.26	29403.50	9900.500	.130
	Science Teacher	112	165.10	18491.50		
Environmental Behavior	Classroom Teacher	197	148.25	29205.50	9702.500	.070
	Science Teacher	112	166.87	18689.50		
Ecological Risks	Classroom Teacher	197	151.96	29937.00	10434.000	.418
	Science Teacher	112	160.34	17958.00		
Chemical Waste Risk	Classroom Teacher	197	149.58	29467.50	9964.500	.141
	Science Teacher	112	164.53	18427.50		
Resource Depletion Risk	Classroom Teacher	197	150.20	29588.50	10085.500	.208
	Science Teacher	112	163.45	18306.50		
Global Environment Risk	Classroom Teacher	197	150.93	29734.00	10231.000	.271
	Science Teacher	112	162.15	18161.00		

Table 3 shows the results of the Mann-Whitney U test conducted to determine the differences between environmental identity and teachers' perceptions of environmental risks by their subjects, which is another subproblem.The analysis conducted did not result in a significant difference in environmental identities and environmental risk perceptions of teachers according to their branches [environmental identity (U=10217.50, p>0.05), desire to be nature-connected (U=10462.50, p>0.05), resemblance to nature (U=9900.50, p>0.05), environmental behavior (U=9702.50, p>0.05), ecological risks (U=10434.00, p>0.05), chemical waste risk (U=9964.50, p>0.05), resource depletion risk (U=10085.50, p>0.05) global environment risk (U=10231.00, p>0.05)].

Table 4. *U-Test Results on the Differences in Environmental Identity and Environmental Risk Perceptions According to the Natural Disaster Experiences of Participants*

Factor	Natural Disaster Experience	n	Mean of Ranks	Total of Ranks	U	p
Environmental Identity	Yes	161	153.02	24637.00	11596.000	.683
	No	148	157.15	23258.00		
Desire to be Nature-Connected	Yes	161	145.16	23370.00	10329.000	.038*
	No	148	165.71	24525.00		
Resemblance to Nature	Yes	161	151.03	24315.50	11274.500	.410
	No	148	159.32	23579.50		
Environmental Behavior	Yes	161	156.66	25223.00	11646.000	.725
	No	148	153.19	22672.00		
Ecological Risks	Yes	161	158.24	25476.50	11392.500	.497
	No	148	151.48	22418.50		
Chemical Waste Risk	Yes	161	157.46	25351.00	11518.000	.599
	No	148	152.32	22544.00		
Resource Depletion Risk	Yes	161	168.24	27086.00	9783.000	.006*
	No	148	140.60	20809.00		
Global Environment Risk	Yes	161	159.07	25610.00	11259.000	.387
	No	148	150.57	22285.00		

*p < .05

Table 4 presents the Mann-Whitney U Test results regarding the significant difference in teachers' environmental identities and environmental risk perceptions according to their natural disaster experiences, which is another sub-problem. The analyzes revealed a significant difference in favor of teachers who had not experienced natural disasters in the desire for nature connectedness sub-dimension of environmental identity (U=10329.00, p < 0.05), no difference was found in other sub-dimensions [environmental identity (U=11596.00, p > 0.05), nature connectedness (U=11274.50, p > 0.05), environmental behavior (U=11646.50, p > 0.05)].While there was a significant difference in the sub-dimension resource depletion (U=9783.000, p < 0.05) of the environmental risk perception scale in favor of teachers who had experienced natural disasters, in the other sub-dimensions [ecological risk (U=11392.50, p > 0.05), chemical waste risk (U=11518.00, p > 0.05), global environmental risk (U=11259.00, p > 0.05)], no significant difference was found.

Table 5. *Correlations for Study Variables*

Variables	Ecological Risks	Chemical Waste Risk	Resource Depletion Risk	Global Environment Risk
Environmental Identity	.44**	.44**	.11*	.39**
Desire to be Nature-Connected	.35**	.35**	.06	.31**
Resemblance to Nature	.41**	.41***	.12*	.36**
Environmental Behavior	.37**	.36**	.13*	.35**

*p < .05; ** p < .01

Table 5 shows the Spearman correlation analysis results. According to the results of Spearman correlation analysis performed to determine the relationship between teachers' environmental identity (n= 309) and their perception of environmental risks, which is the last problem set, environmental identity and ecological risks were (r=.44; p <.01), chemical waste risk (r=. .44; p <.01), and global environmental risks (r=.39; p <.01) were positively moderately correlated, and resource depletion risk (r=.11; p <.05) was positively weakly correlated with the above risks. The other sub-dimensions, the desire to be nature-connected and ecological risks (r=.35; p<.01), chemical waste risk (r=.35; p<.01) and global environmental risks (r=.31; p<.01)) was positively moderately correlated, and no correlation was found with the resource depletion risk (r=.06; p>.05). There was a moderate positive correlation between the resemblance to nature sub-dimension and ecological risks (r=.41; p<.01), chemical waste risk (r=.41; p<.01), and global environmental risks (r=.36; p<.01), and a weak positive correlation with the resource depletion risk (r=.12; p<.05). Lastly, there was a moderate positive correlation

between environmental behavior and ecological risks (r=.37; p<.01), chemical waste risk (r=.36; p<.01), and global environmental risks (r=.35; p<.01), and a weak positive correlation with the resource depletion risk (r=.13; p<.05).

4. Conclusion and Discussion

Data collected from 309 teachers were analyzed in this study. The environmental identities and environmental risk perceptions of classroom and science teachers were examined according to several variables using the correlational survey model. The results obtained as a result of the analysis are presented and discussed.

First, the descriptive analysis results of teachers' environmental identity and environmental risk perceptions are presented. Classroom teachers' environmental identities and desire to be nature-connected were relatively high, and their resemblance to nature and environmentalist behaviors was high. Environmental identity perceptions of science teachers were quite high in all sub-dimensions. Different results were obtained from studies conducted to measure environmental identities or risk perceptions in different sample groups. It was determined that the environmental identities of pre-service teachers in different subjects were very strong (Öztarakçı, 2019), and the environmental identities of pre-service science teachers were relatively strong (Tanık Önal et al., 2020).

According to the descriptive analysis results of environmental risk perceptions of teachers, classroom teachers perceive the resource depletion risk high and chemical waste, ecological, and global environmental risks at a very high level. On the other hand, science teachers perceive the resource depletion risk of environmental risks at a high level and chemical waste, ecological and global environmental risks at a very high level. Due to the inadequacy of studies to determine environmental risks in teacher groups, the findings obtained in this study were discussed with the results obtained from different sample groups. Accordingly, in a study conducted with high school students, the perception of environmental risks was found to be above the mean level (Altunoğlu & Atav, 2009), while in a study conducted with adolescents, the perception of environmental risks was at a significant level (Tuemer & Suemen, 2020).Risk perceptions of university students (Sam et al., 2010) and nursing department students in another study were also found to be high (Sayan & Kaya, 2016). In different studies, the highest perceived risk in university students was found to be the release of radioactive materials associated with nuclear energy production (Yapici et al., 2017), and the risk for chemical pollution of water and food was at a high level (Carducci et al., 2019).

The study concluded that the environmental identities of classroom and science teachers did not differ according to gender. This finding partially overlaps with the findings in the literature. While one study concluded that pre-service teachers' environmental identities did not differ by gender (Oeztarakçı, 2019), another study that measured environmental identity found that female teachers identified more strongly with an environmental consumer identity than male teachers. (Gatersleben et al., 2012).

Looking at the result of differentiation in teachers' perception of environmental risks, it became clear that women perceive ecological risks and global environmental risks more than men doThere was no difference in the views of male or female participants in other sub-dimensions. Some studies in the literature showed no difference based on gender in environmental risks, while in some studies, it was observed that male participants had higher risk perceptions, while others stated that female participants had a higher risk perception. To support the finding of this study, studies have shown that environmental risk perception does not differ by gender among secondary school students (Kahyaoğlu, 2012; Palancı & Sarıkaya, 2019), adolescents (Tümer & Suemen, 2020), and young professionals (Kızılay & Tanık Önal, 2019). A study conducted with university students determined that female participants had higher risk perceptions than male participants (Sam et al., 2010; Yapici et al., 2017). Again, in the study in which the environmental risk perceptions of nursing department students were measured, it was determined that the risk perceptions of female students were significantly higher than male students (Sayan & Kaya, 2016). There are also findings indicating that environmental risk perceptions are higher in males. For example, in a study with a total of 1700 surveys in six cities in China, it was found that men have a higher risk perception than women (Liu et al., 2020).

According to the subject they teach, there was no difference in the environmental identity and environmental risk perceptions of classroom and science teachers. According to a similar finding, the environmental risk

perceptions of pre-service teachers do not differ according to the subject (Kahyaoğlu, 2012). This study has stated that environmental identities and environmental risk perceptions are important because classroom and science teachers are important actors in environmental education. In this study, it can be said that the environmental identities and environmental risk factors of classroom and science teachers did not differ, as the high environmental identities and environmental risk perceptions of both subject teachers can be understood from the descriptive analyses.

Teachers who stated that they did not experience natural disasters were more willing to be nature-connected than teachers who experienced natural disasters. Teachers who experienced natural disasters perceived the risk of resource depletion more strongly than teachers who did not experience natural disasters. On other subdimensions, the views of teachers who experienced natural disasters and those who did not did not differ. No other study in the literature examines the relationship between natural disaster experience and risk perception or environmental identity.However, it has been stated that the interaction of young people with citizens affected by climate change is essential for developing their environmental identities (Stapleton, 2015).

Teachers who did not experience natural disasters had a higher desire to be nature-connected than teachers who experienced natural disasters can be explained by the fact that teachers who have experienced natural disasters associate themselves less with the environment. On the other hand, the perception of the resource depletion risk of teachers experiencing natural disasters may be related to the possibility of establishing a relationship between resource depletion and the environmental disasters they experienced.

There was a positive relationship between environmental identities and environmental risk perceptions of teachers. There was a moderate positive correlation between the dimensions of environmental identity, being nature-connected, resemblance to nature and environmental behavior, and ecological risks, chemical waste risk, and global environmental risks when the context of sub-dimensions was considered. There was a low positive correlation between environmental identity, resemblance to nature, environmental behavior, and resource depletion risk. However, there was no correlation between being nature-connected and resource depletion risk.

5. References

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