

## Determining undergraduate students' environmental awareness and environmental sensitivity

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### Abstract

This study aims to determine undergraduate students' environmental awareness and sensitivity. This study used the environmental awareness and sensitivity scale to determine undergraduate students' environmental awareness and sensitivity. The study group for this study includes 224 undergraduate students studying in Hacettepe University's Family and Consumer Sciences Program. The results reveal that on a 5-point Likert scale, these undergraduate students' environmental awareness level is higher than average (3 points) with a value of  $\bar{X}$  =3.50, and their environmental sensitivity level is much higher than their environmental awareness at  $\bar{X}$  =3.80. In conclusion, it was determined that undergraduate students' environmental awareness and sensitivity levels vary significantly by gender, parental educational status and level of income ( $p < 0.01$ ).

Keywords: environment, environmental consciousness, environmental sensitivity.

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## 1. Introduction

Possessing a very important place for every living being, environment can be defined as the biological, physical, social, economic and cultural surroundings in which the living beings maintain their relationships have a mutual interaction throughout their lives (Environmental Law, 1983). The destruction of the forests and the erosion problem, rapid population growth, irregular urbanization and lack of green areas, corruption of coasts, the impact of chemical substances used in industry on human health, issues with nuclear power and thermal power plants have become problems for which solutions are sought not only in Turkey, but also in many countries of the world (Kayali, 2010).

The Environmental sensitivity shown in Turkey in the face of the environmental issues reaching serious dimensions in Turkey has emerged in the 1970s parallel to the developments in the world. This Environmental sensitivity has developed over time and has prepared the ground for the formation of the environmental policies, and these were followed by legal regulations, development plans and government programs (Keles, 2002).

Environmental sensitivity can be defined as being willing to make positive attempts against environmental issues (Cabuk & Karacaoglu, 2003; Caliskan, 2002). In such a case, development of the environmental sensitivity in individuals can be possible through raising the level of consciousness, and raising the level of awareness can be possible through environmental education that will be given in accordance with each level (Cabuk & Karacaoglu, 2003). The attitudes and behaviors shown by the individuals towards the environment are an indication of environmental sensitivity. Environmental sensitivity contains a dynamic structure that can develop throughout life. In the development of the environmental sensitivity, families, educational institutions, mass media and non-governmental organizations play an important role (Turkum, 1998).

Environmental awareness is; the individual's comprehending the social, historical, and natural environment, attaining a conscious sensitivity, the individuals' taking part in the decisions through non-governmental organizations with respect to the solutions of the problems encountered regarding the environment, making attempts in order to defend their rights and show reaction, understanding the requirement of using the environment without destroying it, perceiving the importance and indispensability of the natural life and natural resources for human life (Keles, 1997), and a human's showing interest in the events occurring in the historical, natural and social environment, his/her watching them and prioritizing savings in all consumption activities (Eyupoglu, 2003).

Having environmental awareness constitutes the framework of the contemporary human behaviors covering the principles of equality and justice of basic human rights. Environmental awareness of a contemporary man also requires showing efforts for the sense of individual responsibility he feels to be felt by the other people around him, as well. In the creation of the environmental awareness and sensitivity, very great responsibilities and tasks fall on people from all sections of the society and of all ages from the family which is the smallest unit of the community to the educators, from the local governments to the citizens (Okuyan-Yazici & Gedikoglu, 2012).

The individuals' comprehending the mutual interaction between man and nature, their being able to understand the contribution of mankind to the emergence of the environmental issues, that is, briefly stated, their attaining "environmental consciousness" and "environmental sensitivity"; is the first step to be taken for the prevention of the environmental issues (Isildar, 2008). Within the scope of the scientific studies related to the environment, several variables such as environmental attitude, environmental awareness and environmental sensitivity have been examined. There are various studies regarding the relationship between these variables both abroad (Blair, 2008; Pooley, O'connor, 2000) and also domestically (Cetin, Ertepinar & Geban, 2004; Ozbay, 2010; Sama, 2003; Tunc-Ozbebek, Omur-Akdemir & Duren, 2012). When the related literature is examined, it is seen that there are limited number of studies aiming to determine the awareness and sensitivity of the university student towards the environment in general. For this reason, this study; has been planned and carried out in order to determine the environmental awareness and sensitivity of the students studying at Hacettepe University, Department of Family and Consumer Sciences.

## 2. Method

224 students studying at Hacettepe University, Department of Family and Consumer Sciences have participated in this research made in order to determine the environmental awareness and sensitivity of the students. The research data were collected as a result of the face to face interviews made with the students in May-June 2014 depending on the questionnaire prepared. The questionnaire used in the research consists of two parts. In the first part; there are demographic questions in order to determine the gender, age and family type of the students and their parent's educational status as well as several questions in order to measure the information related to the environment. In the second part; "the scale of Environmental awareness and Sensitivity" is included in order to determine the environmental awareness and sensitivity of the students (Yesilyurt, Gul & Demir, 2013).

In this study that has been made in order to determine the environmental awareness and sensitivity of the students studying at Hacettepe University, Department of Family and Consumer Sciences, the participation levels in each item included in the scale subject to 5-point Likert type rating has been scored as "I strongly disagree"=1, "I disagree"=2 and "I have no idea"=3, "I agree"=4 and "I strongly agree"=5.

In this study in which the data have been analyzed in the "SPSS 21.0 for Windows" program, the demographic findings have been presented with frequency and percentage distributions, and the scale items have been identified with percentage distributions as well as arithmetic mean and standard deviation statistics. Nevertheless, in the comparison of the environmental awareness and sensitivity levels of the university students according to their individual properties, a t-test has been used for two groups, and for more than two groups, variance analysis has been used.

## 3. Results

In this study carried out in order to determine the environmental awareness and environmental sensitivity levels of the students, it has been detected that 51 % of the students (n=114) females; 49 % of them (n=110) are males; 31.1 % of them (n=70) are 2nd year students; 66% of them (n=148) have nuclear family structure; mothers of 35 % of them (n=78) are high school graduate; fathers of 45 % (n=101) are university graduate; monthly level of income of 40 % (n=89) is 2501-3500 TL. When several findings for the students' information related to the environment were examined; it was observed that 90 % of the students did not receive any extracurricular education on environment; 95% of them were not members of the non-governmental organization related to the environmental issues; 96% did not follow any periodical publication related to the environment. Among the students who took part in the research, the ones who declare their school among the environment-related information resources are in the first row with 43.0 %, this is followed by those stating the family with a rate of 39.0 % and the ones reporting the internet with a rate of 37.0 % and radio and TV with a rate of 9.1 %. The average score of the environmental awareness levels of the students who participated in the study has been reported as ( $\bar{x}=3,50$ ), and the environmental sensitivity average score as ( $\bar{x}=3,80$ ). When the arithmetic average of the answers of the students for each expression that is specified on the scale belonging to the environmental awareness levels is examined, in the statements such as "I take care to use both sides of the pages on which I write ( $\bar{x}=4,72$ )", "I pay attention to the trash in my hand reaching the garbage cans when I am indoors other than my house such as school/ hospital/ shopping centre, etc. ( $\bar{x}=3,94$ )", it can be stated that the environmental awareness levels of the students are the highest among the other statements. In the item "even if I have my own car, usually I use public transportation in order to minimize air pollution." ( $\bar{x}=2,96$ ) in the study, it is seen that the environmental levels of awareness of the students are the lowest compared to the other items (Table 1).

Table1. Average Ratings of the Students According to Their Environmental Awareness Levels

Items	$\bar{x}$	ss
1 I take care not to use the consumption goods which contain harmful substances to the ozone layer (deodorant and other sprays etc.)	3,51	1,19
2 Even if I have my own car, usually I use public transportation in order to minimize air pollution	2,96	1,15
3 I prefer low CO2 emission value vehicles because they pollute the air less.	3,62	1,14
4 I pay attention to / attention is paid to using antipollutionist fuels in my car / our family car.	3,74	1,21
5 I / we turn off the ignition in order to prevent environmental pollution when we are going to wait more than 2 minutes.	3,71	1,20
6 If I want to go to a near distance, I prefer to walk or ride a bicycle.	3,89	1,18
7 Using more detergent makes things clearer.	3,54	1,19
8 In the area we live, drip irrigation is made in the lands such as gardens and fields, etc.	3,25	1,26
9 I pay attention to the fact that harmful chemical substances such as motor oil, paint not to get mixed into the sewage system.	3,64	1,24
10 In the World, there is so much water that people can never pollute.	3,02	1,20
11 I take care to use both sides of the pages on which I write.	4,72	1,22
12 I pay attention to the fact that even the little of the wastes of our house are reached to the garbage bin without being thrown into the street.	3,01	1,23
13 I pay attention to the fact that even the smallest thrash (paper tissue, kernel shells, etc.)In my hand is reached to the garbage bin in the places such as streets.	3,01	1,12
14 I pay attention to the trash in my hand reaching the garbage cans when I am indoors other than my house such as school/ hospital/ shopping centre.	3,94	1,22
15 When I buy a product, I pay attention to its being recycled.	3,66	1,12
Average	3,50	0,82

When arithmetic averages of the answers of the students related to each statement stated in the scale belonging to their environmental sensitivity levels are examined, in the statements "It makes me sad to see the natural habitats of the living beings are opened to settlement because it disrupts the natural environment. ( $\bar{x}=4,84$ )", "Some people's efforts to recycle the used bottles, cans and paper make me happy. ( $\bar{x}=4,75$ )" and "I never throw away trash on the ground and I never leave trash in green areas. ( $\bar{x}=4,63$ )", it can be stated that the environmental sensitivity levels of the students are higher compared to the other statements (Table2). In the study, the items in which the students stated lower environmental sensitivity compared to the other items are; "I can go from door to door in the organizations that will be arranged in order to raise sensitivity in people in terms of recycling" ( $\bar{x}=2,63$ ), "I participate in the scientific studies such as seminars, panels, conferences made on the environment" ( $\bar{x}=2,68$ ) (Table 2).

Table 2. Average Ratings of the Students According to their Environmental Sensitivity Levels

Items	$\bar{X}$	ss
16 The programs related to the environment on TV and radios attract my attention.	4,24	1,21
17 I follow the developments related to the environment from daily newspapers.	4,25	1,23
18 I watch documentaries dealing with the issues related to the environment.	4,15	1,22
19 If an activity related to the environmental cleanness is organized in our school, I would like to participate.	3,95	1,33
20 I participate in the scientific studies such as seminars, panels, conferences made on the environment.	2,68	1,32
21 I would like to participate in the works of any environmentalist group.	3,99	1,30
22 I share my knowledge on environment with my friends when necessary.	3,90	1,28
23 I think that I am a person with environmental sensitivity.	4,16	1,28
24 My friends think that I am someone who has environmental sensitivity.	3,92	1,15
25 It makes me sad to see the natural habitats of the living beings are opened to settlement because it disrupts the natural environment.	4,84	1,61
26 Thinking of the people's carelessness in terms of the environment makes me worried about the future.	3,88	1,19
27 I immediately show my reaction to the people who pollute the environment.	3,82	1,23
28 It makes me happy to see people's efforts to protect the environment.	3,97	1,29
29 I try to raise sensitivity of the people around me in terms of the environment	2,71	1,28
30 Some people's efforts to recycle the used bottles, cans and paper make me happy	4,75	1,33
31 It disturbs me to see some people's throwing objects directly to the garbage bin without distinguishing those that can be recycled	3,58	1,26
32 I can go from door to door in the organizations that will be arranged in order to raise sensitivity in people in terms of recycling.	2,63	1,32
33 I exchange ideas as needed with knowledgeable people in terms of what can be done to decrease pollution.	3,78	1,11
34 I prefer the products that damage the environment less even if they are more expensive.	3,75	1,20
35 I never throw away trash on the ground and I never leave trash in green areas	4,63	1,29
36 I think that environmental topics should be given more weight during education.	3,44	1,32
37 I am trying to put the information I obtained during environmental education into practice.	3,47	1,25
Average	3,80	1,25

When the results related to the comparison of the environmental awareness and environmental sensitivity levels of the students within the scope of the research according to their individual properties are examined in Table 3; it was determined that there was a meaningful difference between the environmental awareness and environmental sensitivity levels of the students and their "gender, father's education level and monthly income levels" ( $p < 0,05$ ). According to this, the group with the highest arithmetic average point in both scales consists of "females", and "university graduate fathers". When the level of monthly income is examined, too, whereas those with an income level of "2501-3500 TL" have the highest arithmetic average in the environmental awareness scale, the group with the "3501 TL and over" income level has the highest arithmetic average in the environmental sensitivity scale (Table 3).

Table 3. Comparison of the Environmental Awareness and Environmental Sensitivity Levels of the Students According to Their Individual Properties

Scales	Variables	Group	$\bar{X}$	ss	t/F	p																																																																																																																																																																																																		
Environmental Awareness	Gender	Female	3,36	0,46	2,493	0,001*																																																																																																																																																																																																		
		Male	3,33	0,46			Environmental Sensitivity		Female	3,45	0,00	1,601	0,001*	Male	3,42	0,53	Environmental Awareness	Grade	1	3,27	0,48	1,901	0,109	2	3,07	0,49	3	3,15	0,48	4	3,08	0,47	Environmental Sensitivity		1	3,33	0,61	2,371	0,051	2	3,12	0,62	3	2,71	0,57	4	3,06	0,57	Environmental Awareness	Family Structure	Nuclear	3,28	0,49	1,320	0,261	Fragmented	3,30	0,70	Extended	3,10	0,54	Environmental Sensitivity		Nuclear	3,13	0,47	0,756	0,519	Fragmented	3,11	0,45	Extended	3,08	0,49	Environmental Awareness	Mother's Educational Levels	Illiterate	2,41	0,44	1,014	0,363	Literate	2,52	0,56	Primary School	2,59	0,47	High School	2,70	0,57	University	2,74	0,50	Postgraduate	2,71	0,51	Illiterate	2,61	0,39	Literate	2,66	0,50	Environmental Sensitivity		Primary School	2,77	0,51	1,666	0,127	High School	2,66	0,51	University	2,70	0,55	Postgraduate	2,77	0,51	Illiterate	3,00	0,43	Literate	3,25	0,46	Primary School	3,16	0,51	2,874	0,009*	High School	3,20	0,53	University	3,73	0,51	Postgraduate	3,67	0,45	Illiterate	3,36	0,44	Literate	3,46	0,59	Primary School	3,69	0,59	3,018	0,011*	High School	3,71	0,57	University	3,86	0,59	Postgraduate	3,76	0,56	0-846 TL	2,76	0,81	847-1500 TL	3,01	0,53	1501-2500 TL	3,12	0,51	2,874	0,009*	2501-3500 TL	3,28	0,48	3501 TL +	3,15	0,47	0-846 TL	2,29	0,57	847-1500 TL	2,64	0,48	1501-2500 TL	2,84	0,56	4,205	0,000*	2501-3500 TL	2,91	0,53	3501 TL +	3,40	0,60								
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#### 4. Discussion

In this study made in order to determine the environmental awareness and sensitivity of the university students, it can be said that the levels of awareness of the students in terms of the environment is over 3 ( $\bar{X}=3,50$ ) indicating the medium value in the 5-point Likert range, their sensitivity, however, is higher ( $\bar{X}=3,80$ ). In the research of Aksoy and Karatekin (2011), it has been stated that the average of the affective trend scores of the prospective teachers is in the high affective disposition category (Aksoy, Karatekin, 2011).

When the arithmetic averages of the answers of the students related to each statement given in the scale belonging to their environmental awareness levels are examined, in the statements "I take care to use both sides of the pages on which I write ( $\bar{X}=4,72$ )", "I pay attention to the trash in my hand reaching the garbage cans when I am indoors other than my house such as school/ hospital/ shopping centre, etc. ( $\bar{X}=3,94$ )", it can be stated that the environmental awareness levels of the students are the highest among the other statements. According to this conclusion; it can be said that the students who participated in the study have a sense of environmental protection responsibility as an individual, and they are more conscious in terms of the important environmental issues such as paper saving, not throwing the wastes irregularly, etc.

The lowest average value stated in the scale, however, has been directed towards the statement "Even if I have my own car, usually I use public transportation in order to minimize air pollution." ( $\bar{X}=2,96$ ). According to this conclusion; it can be said that the air pollution-related environmental awareness of the students who participated in the study is not in a desired level. The levels of awareness of the students should be raised by informing them more especially on the issues such as sources of air pollution and their prevention.

When the arithmetic average of the answers of the students for each expression that is specified on the scale belonging to the environmental sensitivity levels is examined; in the statements "It makes me sad to see the natural habitats of the living beings are opened to settlement because it disrupts the natural environment. ( $\bar{X}=4,84$ )", "Some people's efforts to recycle the used bottles, cans and paper make me happy. ( $\bar{X}=4,75$ )", it can be said that the environmental sensitivity levels of the students are higher compared to the other statements. This result shows the fact that the students who participated in the study have a sense of responsibility as an individual for the issues such as not disrupting the natural environment, recycling, etc., and their sensitivity to the environmental issues especially on these topics is high.

The lowest average value stated by the students in the environmental sensitivity scale, however, has been for the statements; "I can go from door to door in the organizations that will be arranged in order to raise sensitivity in people in terms of recycling" ( $\bar{X}=2,63$ ), "I participate in the scientific studies such as seminars, panels, conferences made on the environment" ( $\bar{X}=2,68$ ). The students should be informed more and their sensitivity levels should be raised especially on the issues in which their environmental sensitivity levels are low.

According to the t-test results related to the comparison of the environmental awareness and environmental sensitivity levels of the participating students according to their individual properties; a meaningful difference was detected between the environmental awareness and environmental sensitivity levels of the students and their "gender, father's education level and monthly income levels" ( $p<0,05$ ). It is observed that there is a difference between the environmental awareness and environmental sensitivity levels and their genders ( $p>0,05$ ) and the environmental awareness ( $\bar{X}=3,36$ ) and sensitivity of the female students are higher compared to the male students ( $\bar{X}=3,45$ ). In the literature, there are studies supporting our conclusion (Cabuk & Karacaoglu, 2003; Aksoy & Karatekin, 2011; Ozmen, Cetinkaya & Nehir, 2005; Gurbuz, Cakmak & Derman, 2013; Connell, Fien, Lee, Sykes & Yencken, 1998; Zelezny, Chua & Aldrich, 2000).

In the father's education level and environmental awareness and environmental sensitivity, however, the group with the highest arithmetic average point consists of the group with an education at the "university" level. The level of education of family members affects the attitudes, behaviors and sensitivity of the children raised in that environment. The fact that the environmental awareness and sensitivity level of the child of a father with a high educational level is high is an expected result in this context. Even though there is not a correlation between the mother's educational level and the awareness and sensitivity levels of the students, it is seen that the

awareness and sensitivity of the students increase with the increase of the mother's educational level.

When the level of monthly income is examined, too, whereas those with an income level of "2501-3500 TL" have the highest arithmetic average in the environmental awareness scale, the group with the "3501 TL and over" income level has the highest arithmetic average in the environmental sensitivity scale. In the study made by Ozmen, Cetinkaya and Nehir (2005), it was detected that the environmental attitude point average was higher in the group stating that its income was more than its expenses. In also Sama's (2003) study, the students in a medium and near medium income group showed a more positive attitude than those from the low income group (Sama, 2003; Ozmen, Cetinkaya & Nehir, 2005).

## 5. Conclusions and Recommendations

According to the results obtained from this study made to determine the environmental awareness and sensitivity of the university students; it was determined that the levels of environment-related awareness of the university students who participated in the study was over 3 ( $\bar{X}=3,50$ ) indicating the medium level in the 5-point Likert scale, and their sensitivity was higher ( $\bar{X}=3,80$ ), and that there was a meaningful difference between the students' environmental awareness and environmental sensitivity levels and "genders, father's education level and monthly income levels" ( $p<0,05$ ).

According to the findings obtained as a result of the research it can be suggested that;

- Environmental training courses are given to the university students in the undergraduate programs environment and their awareness and sensitivity is raised in terms of environmental issues and their prevention,
- Participation of the students in the activities of the non-governmental organizations operating in the field of environment can be provided, activities on the environment such as panel, symposium, etc. can be organized and the awareness and sensitivity of the students can be increased in terms of environmental protection,
- In the mass media communication means which is in continuous use at the present day, the topic of environment can be handled in a more interesting way and sensitivity can be raised in individuals,
- Studies aiming to determine the environment awareness and sensitivity levels of the students are made on a wider sample group throughout Turkey.

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