

Adana İli'ndeki Bireylerin Çevre Konusundaki Tutumları ve Bireysel Davranışları

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Çevresel farkındalık

Bu çalışmanın amacı, Adana İli kentsel alanda yaşayan bireylerin çevre konusundaki tutum ve davranışlarını ölçmektir. Bu amaçla Adana İli'nde yaşayan 384 bireyle yüz yüze anket çalışması yapılmıştır. Araştırma sonuçlarına göre, bireylerin çevre sorunlarına sebep olabilecek uygulamalar konusunda bilgi sahibi oldukları görülmektedir. Ancak çevre konusundaki davranışlarının düzenli olmadığı ve belirli uygulamaları zaman zaman yaptıkları görülmektedir. Geri dönüştürülmüş materyalden üretilmiş paketli ürün satın almayı çok tercih etmedikleri belirlenmiştir. Bireylerin cinsiyet, yaş ve eğitim değişkenlerine göre çevresel tutum, davranış ve çevre sorunlarının kaynakları arasında da farklılıklar olduğu belirlenmiştir. Bütün bu sonuçlar dikkate alındığında, gelecek nesillere daha yaşanabilir bir çevre bırakmak için, bireyler çevre konusunda bilinçlendirilmelidir. Çevre korumaya yönelik davranışlarının kalıcı hale getirilmesi açısından hükümetlerin etkin politikalar üretmesi gerekmektedir. Ayrıca, çevre konusunda farkındalığın artırılması için her seviyede eğitim programlarına ağırlık verilmelidir.

Attitudes and Behaviors of People about Environment in Adana Province, Turkey

Research Article

ABSTRACT

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The aim of this study is to measure the environmental attitudes and behaviors of individuals living in the urban area of Adana province. For this purpose, a face-to-face survey was conducted with 384 individuals living in Adana. According to the results of the research, it is seen that individuals have knowledge about practices that may cause environmental problems. However, it is seen that their behaviors with respect to the environment are not regular and they act in a particular manner from time to time. It has been determined that they do not prefer to buy packaged products made of recycled materials. It has been determined that there are differences between the environmental attitudes, behaviors and sources of environmental problems according to the gender, age and education variables of the individuals. Considering all these results, individuals should be made aware of the environment in order to leave a more livable environment for future generations. In order to make their environmental protection behaviors permanent, governments need to produce effective policies. In addition,

education programs at all levels should be emphasized in order to increase awareness about the environment.

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1. Introduction

Environment is a concept that embraces all living beings and non-living things. We meet all our needs for survival from these assets, which we call environmental resources. The rapidly increasing population, urbanization, economic activities and diversifying consumption habits increase the pressure on the environment and natural resources (Ministry of Environment and Urbanization, 2020). Global economic policies have focused on the short-term use of natural resources without considering sustainability. As a result, serious environmental degradation has occurred. In addition, biodiversity loss occurs through industrialization, urbanization, agriculture and ever-increasing energy (Ogunbode and Arnold, 2012). Environmental degradation, which is caused by air and water pollution, noise, radiation, chemicals or biological factors, and the destruction of natural areas -forests in particular, have adverse impacts on human health (Ministry of Environment and Urbanization, 2020). A society that is unaware of its environment and uneducated does not know how to use its environment, consumes natural resources rapidly and causes danger for the future (Oktav et al., 2021). The fact that the environment must be protected and preserved in order to enable future life cannot be denied (Verma, 2016). The existence of environmental problems poses a great threat to the continuity of living things. Elimination of this threat will only be possible by raising awareness of people about this issue and acting more consciously. Environmental problems have become a global element that concerns all people without borders (Ministry of Environment and Urbanization, 2020). Being aware of current problems and their causes raises anxiety but also encourages action (Korhonen and Lappalainen, 2004). People may be conscious and know what to do for the sake of the environment, but this does not necessarily mean that they intend to take action (Mei et al., 2016).

The most effective and permanent solution to eliminate and combat environmental problems is to raise environmentally sensitive societies. (Ateşođlu and Erkal, 2018). Increasing environmental awareness is thought to reverse the misuse of the environment and resources. (Omoogun et al., 2016). Environmental awareness is understanding the significance of not harming the environment and using it at a sustainable level (Yücel et al., 2006; Ateşođlu and Erkal, 2018). Accordingly, an environmentally conscious person is an individual who has fundamental information about the environment, adopts positive attitudes towards the environment and shows positive behaviors towards the protection of the environment (Yolođlu and Halisdemir, 2020). Environmental awareness basically requires being aware of the environment and behaving in harmony with it (Kurt Konakođlu, 2020). Environmental awareness includes the perception and understanding of threats, changes, and available options, and values, attitudes, and preferences among conflicting goals (Takala, 1991). Environmental awareness, which is a concept related to laying a claim on the environment and being sensitive to

environmental problems, consists of elements such as seeing the mistakes in attitudes, sensitivity and behaviors towards the environment, and having information about the values of the environment (Acungil, 2020). Individuals who have environmental awareness and are concerned about the impact of environmental problems on themselves are expected to act by paying attention to the environment in every activity while continuing their lives, because the environmental behavior of individuals is a reflection of their sensitivity to the environment (Özbebek Tunç et al., 2012).

In order to have a solid grasp of environmental attitudes, the level of knowledge of the population under observation about the severity of environmental problems, their reactions and their interaction with nature should be determined by evaluating environmental awareness (Ogunbode and Arnold, 2012). Environmental consciousness is affected by individual characteristics, perceived environment and experience (Li, 2018). Considering that only what can be measured can actually be managed, measuring environmental awareness according to scientific criteria becomes more and more interesting for scientists working in different disciplines (Ham et al., 2016). For this reason, many studies on the environment have been conducted in different countries (Takala, 1991; Palmer et al., 1998; Duroy, 2005; Yücel et al., 2006; Daudi, 2008; Ogunbode and Arnold, 2012; Özbebek Tunç et al., 2012; Ham et al., 2016; Öden et al., 2015; Ünver et al., 2015; Mei et al., 2016; Omoogun et al., 2016; Verma, 2016; Doğan and Puruçuoğlu, 2017; Morrison and Beer, 2017; Karahan, 2017; Gökdayı and Demirel, 2018; Ateşoğlu and Erkal, 2018; Wong and Wan, 2008). The level of environmental knowledge is the leading factor in raising environmental awareness (Nazarenko and Kolesnik, 2018). Consciousness, sensitivity and awareness can be gained by individuals with an effective education starting from an early age (Karatekin, 2014). Based on this idea, studies have been conducted with students at different levels of education (Korhonen and Lappalainen, 2004; Budak et al., 2005; Hassan et al., 2010; Keleş et al., 2010; Oğuz et al., 2011; Karatekin, 2014; Altın et al., 2014; Şahin et al., 2016; Tomar, 2017; Kiper et al., 2017; Nazarenko and Kolesnik, 2018; Žuk and Žuk, 2018; Gül et al., 2018; Ateş and Öner, 2020; Kurt Konakoğlu, 2020; Acungil, 2020; Yoloğlu and Halisdemir, 2020; Oktav et al., 2021).

In order to solve environmental problems, to develop policies in this regard, and to create a livable environment that is sensitive to environmental problems, it is necessary to reveal the current situation in order to create a conscious society with a high level of awareness. Learning the attitudes and behaviors of individuals about the environment is an indicator of how aware we are of environmental problems and how consciously we act in the solution of these problems. In the light of this information, plans can be made for the necessary studies to develop and increase awareness and consciousness. The aim of this study is to measure the environmental attitudes and behaviors of individuals living in the urban area of Adana province.

2. Materials and Method

The main material of the research is the primary data obtained as a result of the face-to-face survey with individuals living in the urban area of Adana. The survey questions prepared for the research were developed by taking into account the purpose of the research, the content of the subject and the characteristics of the main population to which the survey will be applied. Similar studies in the literature were also referred in this study. The sample size of this study was calculated according to the Simple Random Probability Sampling method. The formula of the method is as follows (Yamane, 2001).

$$n = \frac{z^2(p * q)}{d^2}$$

n: sample size

z: 1,96 (standard z-value corresponding to 95% confidence level)

p: the probability of the sample to represent the universe (%50)

q: (1-p) the proportion of the universe that does not have the relevant characteristic

d: sensitivity (accepted as $\pm 5\%$)

As a result of the calculation, the sample size was calculated as 384. The research data were evaluated through statistical package programs and presented in the form of frequency distributions, averages and correlation analyzes made in accordance with the purpose of the study. According to the characteristics of the participants, relationship analyzes were conducted to investigate whether there is a statistically significant difference between the attitudes of the individuals, their behaviors, the practices they can do for the environment, the practices that cause environmental problems, and the thoughts of the individuals about the person or situations they are affected by in order to protect the environment. In order to decide on the statistical technique to be used, the single-sample Kolmogorov-Smirnov test was applied. At the end of the Kolmogorov Smirnov test analysis, it was reported that the specified variables did not show normal distribution, respectively. Mann Whitney U Test and Kruskal Wallis H test were applied, since parametric tests could not be used for data not suitable for normal distribution.

3. Results and Discussion

3.1. Demographic characteristics of individuals

Results showed that 49% of the individuals participating in the study are women, 51% are men and 55.2% are married individuals. Individuals are between the ages of 17-78, and the average age is 35. Approximately 80% of the individuals participating in the research consist of individuals under the age of 45 in the active population. Only 20% of individuals are educated people with high school degree, and about 60% have undergraduate and graduate degrees. While the number of individuals in the

household varies between 1-10, they are families of about 4 people. About 16% of individuals have a monthly income of less than 1500 TL, 35.3% have a monthly income of 1501-3000 TL, about 50% of them have a monthly income above 3000 TL. In addition, 9.4% of individuals stated that they were members of an environmental organization, while 90.6% stated that they were not members of any environmental organizations. About 18% of individuals work in the public sector, 21.6% work in the private sector, and 13.0% are housewives and 18.5% are students. Results showed that 37.2% of individuals do not know where to file a complaint about environmental pollution. Individuals make their complaints about environmental pollution mostly to institutions and organizations such as the Ministry of Environment and Urbanization, Municipality, Prime Ministry Communication Center (BİMER), Governor's Office and Turkish Foundation for Combating Erosion, Afforestation and Conservation of Natural Assets (TEMA).

3.2. Attitudes and behaviors of individuals about the environment

Information about the environmental behavior of individuals is demonstrated in Figure 1. It is seen that individuals do not tend to buy packaged products made from recycled materials. It is seen that they sometimes do practices such as separating recyclable materials, using different transportation methods to reduce the use of personal cars, purchasing products made of durable materials to use them for a longer period of time, preferring products that can be used for longer periods of time, and avoiding purchasing disposable products. These results show that the behaviors of individuals regarding the protection of the environment are not of regular and systematic manner.

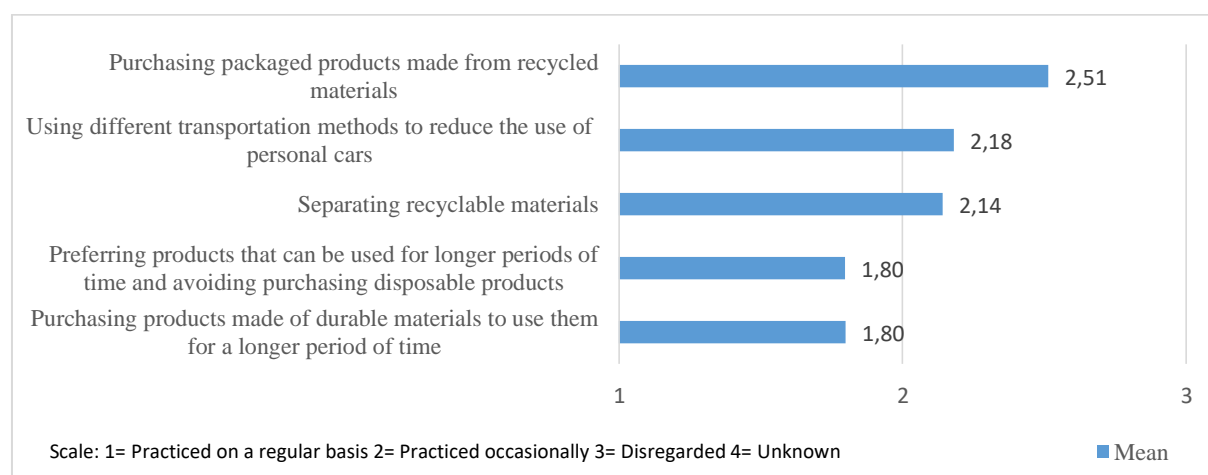


Figure 1. Individuals' environmental behaviours

Individuals' opinions and considerations on what can be done about the environment are given in Figure 2. While the participants thought that certain things could be done about the emission of greenhouse gases and the increased greenhouse effect, they were concerned about the pollution of the environment as a result of the pollution of chemical wastes, the air pollution caused by the car exhaust, the water pollution caused by the factory wastes, the indoor air pollution and the solid wastes caused by the garbage disposal thus they argued that a lot of things can be done for these problems.

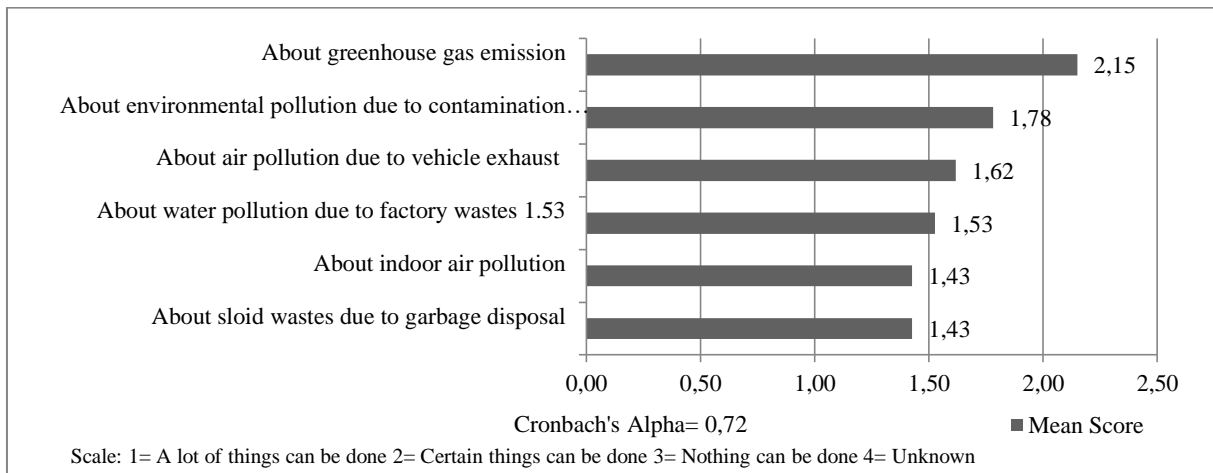


Figure 2. Individuals' opinions and considerations on what can be done about the environment

The views of individuals reflecting their lifestyles and attitudes towards the environment are shown in Figure 3. While individuals state that they are not confused about what is good or bad for the environment, they are indeed undecided based on their statements saying that "New technologies will solve environmental problems before they further aggravate. It is understood that they do not agree with the assumptions that the improvement of living conditions leads to environmental pollution, that they do not have time to consider the consequences of their behaviors on the environment, that they will be ashamed if their entourage learn that they do not recycle their garbage, that the recovery of the economy takes precedence of the environment, that commercial enterprises' obligations to spend a lot of money to protect the environment will prevent research and development (R&D) investments, and that local governments are obliged to encourage people to contribute in recycling.

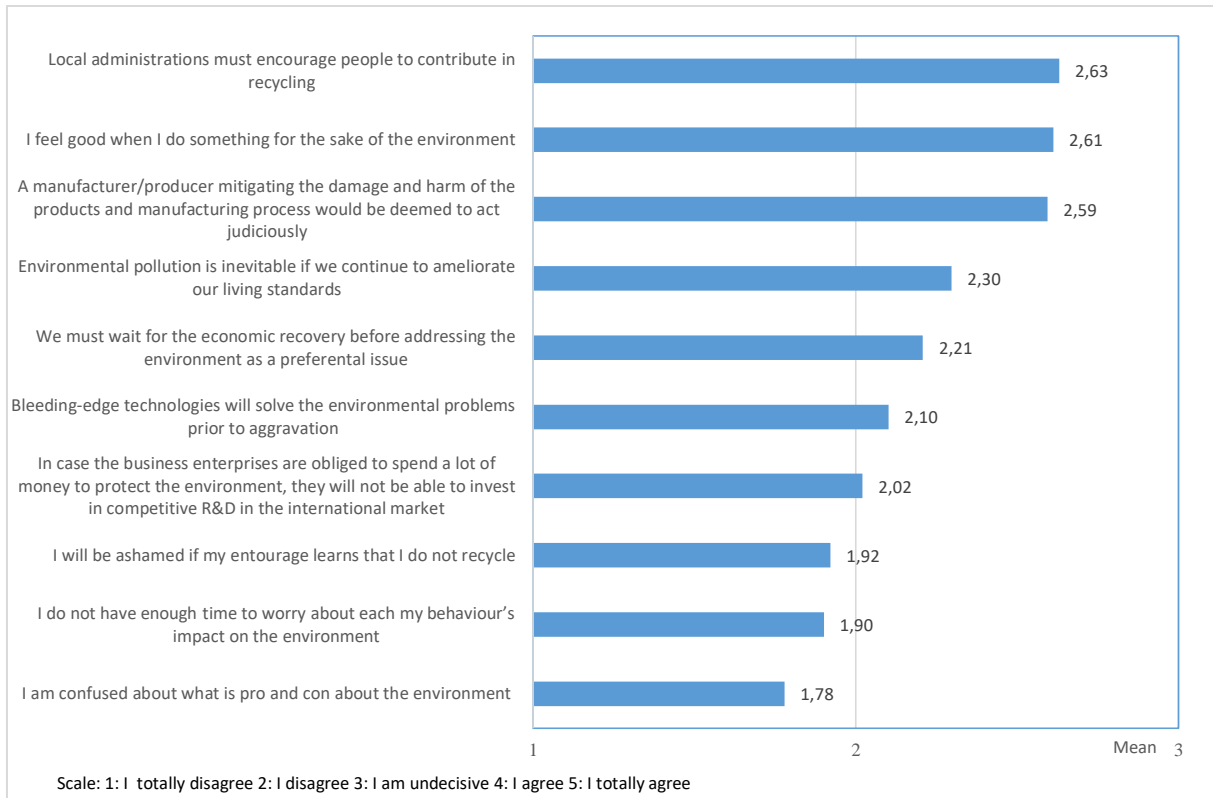


Figure 3. Individuals' lifestyles and their attitudes towards the environment

The thoughts of individuals about people and situations that may make them want to change their attitudes in order to protect the environment are given in Figure 4. While all kinds of discourse and behavior on environmental issues are very effective on individuals to change their attitudes towards environmental protection, the encouragement of famous people is somewhat effective.

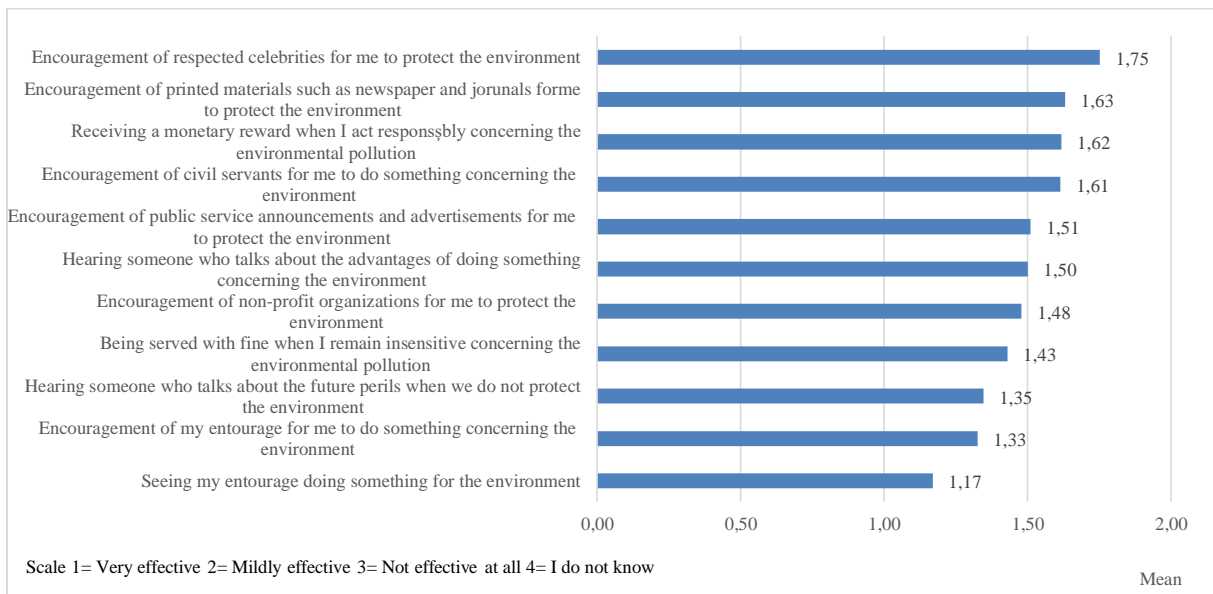


Figure 4. Persons and situations that can persuade individuals want to change their attitudes to protect the environment

The opinions of the participants on practices that may cause environmental problems are given in Figure 5. Individuals consider issues such as the fact that factories cause pollution during

manufacturing, the products used by enterprises cause environmental problems (pollution, recycling problems, etc.), the fact that states do not make a collaborative effort for matters that require international cooperation, as the main causes of pollution. On the other hand, they state that other expressions may partially cause environmental problems. This situation demonstrates that the individuals participating in the research have sufficient knowledge about the sources of environmental problems. According to the study conducted by Morrison and Beer (2017) on consumption and environmental awareness, it is stated that approximately half of the population (0.545) is aware of the environmental impact of the products they buy and use.

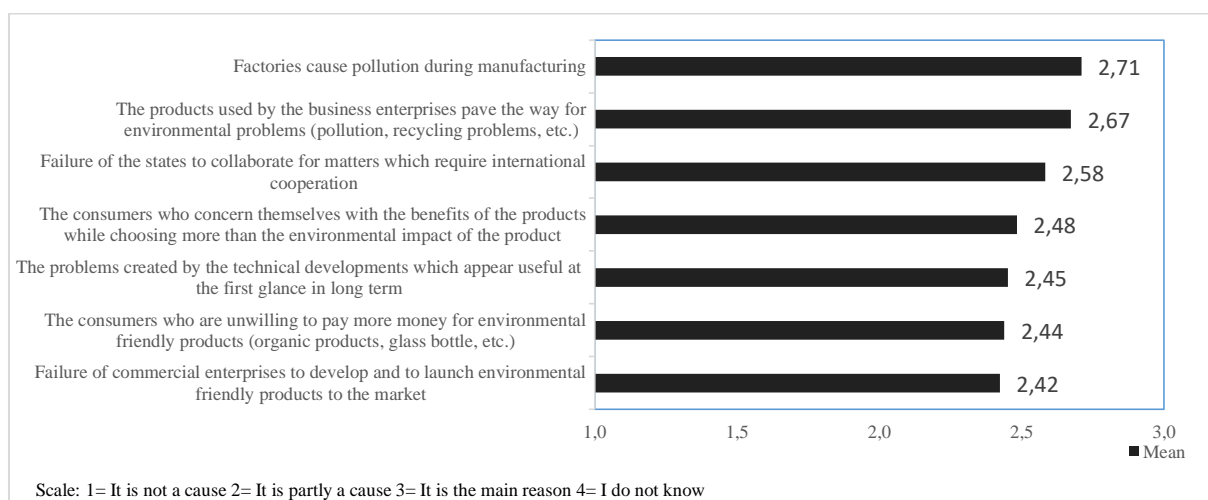


Figure 5. Thoughts and considerations on practices that may cause environmental problems

3.2. Analysis of the relationships between demographic characteristics with attitudes and behaviors

Mann-Whitney U test results conducted to investigate whether there is a statistically significant difference between individuals' attitudes, behaviors, practices they may do for the environment, practices that cause environmental problems, and their thoughts on the person or situations they are affected by in order to protect the environment, according to gender, marital status and membership to an environmental organization are shown in Table 1.

As a result of the analysis, it was determined that there was a statistically significant difference at the level of 0.05 between the environmental behaviors of individuals according to gender (Table 1). Compared to men, women exhibit more positive behaviors in consideration of propositions such as "using different transportation methods to reduce the use of personal cars, purchasing products made of durable materials for long-term use, and avoiding disposable products and choosing products that can be used for many times". Compared to men, it is seen that women use more environmental protection practices in their daily lives on an individual basis. In the literature, it is seen that women use environmentally friendly practices more frequently than men.

Table 1. Mann-Whitney U Test results

Mann-Whitney U Testi		Attitude	Behaviour	Influencing person and situation	What individuals may do	Sources of environmental problems
Gender	Chi-Square	1,262	4,547	0,059	0,975	1,267
	df	1	1	1	1	1
	Asymp. Sig.	0,261	0,033	0,808	0,323	0,260
Marital status	Chi-Square	0,146	0,002	1,009	7,389	0,020
	df	1	1	1	1	1
	Asymp. Sig.	0,702	0,962	0,315	0,007	0,887
Membership of an environmental organization	Chi-Square	0,018	8,283	4,916	1,442	0,069
	df	1	1	1	1	1
	Asymp. Sig.	0,894	0,004	0,027	0,230	0,793

Ateşoğlu and Erkal (2018) concluded in their research that women have higher positive attitudes towards the environment than men. Çifci and Şakacı (2015), in their study conducted with university students determined that women consumers attach more importance to environmentally conscious consumption compared to men consumers. Özbebek Tunç et al. (2012), in their study conducted with university students, determined that the gender variable had a positive effect on the relationship between environmental awareness and personal measures to protect the environment. Kiper et al. (2017) found that women are more sensitive than men about their cleaning supplies preferences and waste oil spilled in the sink in terms of their effects on the environment and human health. Wong and Wan (2008), in their study conducted to examine the development of environmental awareness and behavior in Hong Kong, state that women tend to engage in environmentally friendly practices more frequently. For individuals, the practice of environmental protection includes the need to make different sacrifices, such as giving up private cars and paying higher prices for environmentally friendly products, rather than shouting empty slogans (Wong and Wan, 2008). Yoloğlu and Halisdemir (2020), in their study conducted with Mersin University students, stated that there is a significant difference in environmental attitude/behavior scores of students according to gender, and that the attitudes and behaviors of women students are more environmentally friendly than men students. Öden et al. (2015), in their study conducted to measure the environmental awareness and environmental sensitivity of citizens living in the Sarayönü district of Konya province, found that women have higher environmental awareness than men. Altın et al. (2014), in their study conducted to determine secondary school students' awareness of environmental problems and their levels of active participation in environmental activities, revealed that women students have higher environmental awareness and active participation levels. According to a limited number of studies, it has been determined that men are more sensitive about environmentally friendly practices. Acungil (2020), in a study conducted to determine the environmental attitudes, awareness, sensitivity and behavior

perceptions of university students studying in the city center of Tokat, found that there is a gender oriented difference in environmental behavior and sensitivity, and that men students acquired more positive environmental behaviours and sensitivities than women students. According to a limited number of studies, it has been determined that there is no significant relationship between gender and exhibiting environmentally friendly behaviors. Karaismailoğlu (2018) determined that teachers' environmental friendly behaviors did not make a difference depending on gender, and that men and women teachers exhibited similar environmentally friendly behaviors.

According to the gender variable, it has been determined that there is no statistically significant difference between the attitudes of the individuals, the practices they can do for the environment, the practices that cause environmental problems, and the thoughts of the individuals about the people or situations they are affected by in order to protect the environment (Table 1). Although there are studies in the literature that support that there is no difference in attitudes according to the gender variable, there are also studies that state that attitudes differ according to gender. Doğan and Purutçuoğlu (2017) determined that gender was not statistically effective on the attitudes of social workers towards the environment. Ateş and Öner (2020), in their study in which they examined the level of awareness of preservice teachers towards environmental problems, determined that the level of awareness of preservice teachers towards environmental problems did not differ significantly according to the gender variable. Oktav et al. (2021), in their study conducted to determine the awareness levels of associate's degree students about environmental problems, stated that women university students were more numerous than men students, but no statistically significant result was obtained from the gender difference. Karaismailoğlu (2018), in his study conducted with teachers in the province of Ankara, revealed that women participants' attitudes towards the environment were higher than that of men. Ünver et al. (2015) determined that the awareness and attitude scores of women were higher than men according to their study conducted to determine the awareness and attitude levels of nurses towards the environment. Yücel et al. (2006), in their study conducted to investigate the views and attitudes of individuals in Adana province, on environmental problems, stated that women are more sensitive to the environment in terms of both environmental awareness and attitudes than men. According to the study conducted by Özden (2008) with Adıyaman University students, as they examined the impact and influence of gender on attitudes towards environmental problems, found that women teacher candidates had higher average scores in all dimensions than men teacher candidates. Boeve-de Pauw and Petegem (2010) stated that at the individual level, girls have more environmentally positive attitudes than boys. Budak et al. (2005), according to the study in which they evaluated the attitudes and behaviors of Agricultural faculty students towards the environment, stated that women students were more reluctant to environmental issues than men students. Doğan and Purutçuoğlu (2017), in their study conducted with social workers, state that gender does not generally make a significant difference on the level of environmental awareness, but in the comprehension sub-dimension, women are more successful in being aware of environmental problems and comprehending their causes.

As a result of the Mann-Whitney U analysis, it was determined that there is a statistically significant difference at the level of 0.05 between the membership status of an environmental organization and the people and situations that individuals are affected by with respect to environmental behavior and environmental issues (Table1). It is observed that individuals who are not members of an environmental organization exhibit more positive behaviors towards the environment as verified by the suggestions "Separating recyclable materials, purchasing packaged products made from recycled materials" compared to members of environmental organizations. Although it is expected that individuals who are members of environmental organizations will exhibit more positive behaviors towards the environment, the results reveal the opposite. More research should be done about environmental organizations actions. In the literature, there are findings that support this result as well as findings that do not. Karaismailoğlu (2018) stated that it has been observed that the behavior levels of the participants who are members of any environmental institution are lower than those who are not members. Budak et al. (2005) stated that those who are members of environmental organizations have more positive attitudes towards environmental issues. Karahan (2017) determined that managers who are members of non-governmental organizations and who receive environmental education are more sensitive to the environment.

It has been determined that the difference between the membership status of individuals to an environmental organization and the people and situations that they are affected by environmental issues is based on the following propositions (Table 1). "Seeing people around me doing something for the environment, People around me encouraging me to do something about the environment, Government officials encouraging me to do something about the environment, Famous people I respect encouraging me to protect the environment, Non-profit organizations encouraging me to protect the environment".

While there is no statistically significant difference between the marital status of individuals and their attitudes, behaviors, practices that cause environmental problems, and their thoughts on the person or situations they are affected by in order to protect the environment, there is a statistically significant difference at the level of 0.05 between their thoughts on the practices they can do for the environment (Table 1). Married individuals think more positively about what can be done about "Solid wastes generated as a result of garbage disposal, greenhouse gas emissions and increased greenhouse effect" compared to single individuals.

As a result of the Kruskal Wallis H Test, there is no statistically significant difference between the attitudes, behaviors, practices that cause environmental problems, the practices that cause environmental problems, the people or situations that individuals are affected by, and the practices they can do for the environment according to the households and working conditions in which they live (Table 2).

Table 2. Kruskal Wallis H Test Results

Kruskal Wallis H Test		Attitude	Behaviour	Influencing person and situation	What individuals may do	Sources of environmental problems
Age	Mann-Whitney U	3388,000	3047,500	3696,000	3042,500	2989,000
	Wilcoxon W	8338,000	5897,500	6546,000	7992,500	7939,000
	Z	-0,991	-2,037	-0,050	-2,050	-2,214
	Asymp. Sig. (2-tailed)	0,321	0,042	0,960	0,040	0,027
Education	Mann-Whitney U	948,500	826,000	956,000	612,000	574,500
	Wilcoxon W	1938,500	1816,000	1946,000	1602,000	1564,500
	Z	-0,342	-1,357	-0,282	-3,112	-3,440
	Asymp. Sig. (2-tailed)	0,732	0,175	0,778	0,002	0,001
Monthly income	Mann-Whitney U	1206,000	1313,000	1342,500	1290,000	1045,500
	Wilcoxon W	2241,000	3266,000	3295,500	2325,000	2080,500
	Z	-1,199	-0,521	-0,335	-0,667	-2,233
	Asymp. Sig. (2-tailed)	0,230	0,602	0,738	0,505	0,026

It has been determined that there is a statistically significant difference of 0.05 between the ages of the individuals and their environmental behaviors, the practices they can do, the people and situations they are affected by (Table 2). It has been determined that individuals under the age of 25, namely young people, are more sensitive to purchasing packaged products made from recycled materials compared to other individuals. On the subject of what individuals can do for the environment, on the "emission of greenhouse gases and the increasing greenhouse effect", individuals over the age of 35 think more positively than young people. Individuals over the age of 45 state that when they see their friends and acquaintances doing something about the environment, and when civil servants encourage them to do something, they are more affected by the environment than younger individuals. Karahan (2017), in his study conducted in Elazığ in order to determine the environmental sensitivity and awareness levels of business managers and to determine the problems encountered in the field of environment, stated that the environmental awareness of the managers increases as the age and work experience of the managers increase.

While there was no statistically significant difference at the 0.05 significance level between the education level of individuals and their attitudes, behaviors and what they could do, it was determined that there was a difference between environmental problems and the people and situations they were affected by (Table 2). In other words, regardless of the education level of individuals, it has been concluded that there is no positive or negative difference in attitudes, behaviors and what individuals can do for the environment. There are findings in the literature that environmental behaviors differ

according to education level. Wong and Wan (2008) stated that participants with higher education levels tend to use environmentally friendly practices more frequently. Duroy (2005) stated that education is significantly related to environmental behavior. Yücel et al. (2006) shows that the level of consciousness, attitude and sensitivity increases depending on the level of education. Ogunbode and Arnold (2012), in their study conducted in Nigeria, stated that education has significant effects on environmental knowledge and attitudes, with participants with tertiary education displaying significantly more "measured" knowledge than other categories. In addition, it has been revealed that there is a relationship between education levels and environmental concerns, with those with higher education levels having the highest concern and those with only vocational or primary education are the least concerned individuals. Altın et al. (2014) states that as the family education level increases, the environmental awareness and active participation level of the students also increase. Ateşoğlu and Erkal (2018) determined that as the education level of the adults participating in the research increases, their negative behaviors towards the environment decrease.

Individuals' thoughts on issues that cause environmental problems differ according to their education level (Table 2). Primary, secondary and high school graduates predominantly support the view that consumers do not want to pay more for environmentally friendly products. Individuals with secondary and post-graduate education confirm that consumers are not interested in how products affect the environment, but in the benefits they provide.

The people and situations that the individuals participating in the research are affected by concerning environmental issues differ according to their education levels (Table 2). Although there is no difference according to education level for the proposition "I will not be fined if I am insensitive about environmental pollution", it has been determined that those with a lower education level are more affected by the people and situations around them than university and graduate graduates with respect to environmental issues.

While there was no statistically significant difference at the 0.05 importance level between the income level of individuals and their attitudes, behaviors, what they could do and environmental problems, it was determined that there was a difference between the people and situations they were affected by (Table 2). The differentiation of the income level of individuals does not make a difference in their views on the environment, and the influencing people and situations differ with respect to the income level. Individuals with low income levels are more affected by the incentives and practices of the people around them than individuals with high income.

4. Conclusion and Suggestions

In parallel with the developments in economic, technological and social fields worldwide and the increase in population, the aggravation of pressure on natural resources increases the interest in the environment and environmental problems. In the study conducted to determine the attitudes and behaviors of individuals living in the urban area of Adana province, it has been determined that

individuals have sufficient knowledge about the sources of environmental problems and that many things can be done by individuals in order to prevent environmental problems. It has been determined that the environmental behaviors of individuals are not continuous, and that they occasionally exhibit environmentally friendly behaviors. In addition, it is seen that all kinds of discourse and behavior on environmental issues are effective on individuals' changing their attitudes towards environmental protection. In particular, it is seen that the variables of gender and age make a difference in individuals' environmentally friendly behaviors. It can be stated that the most important factor in women's displaying more environmentally friendly practices is the fact that women are the decision-makers as they are responsible for purchasing the needs of the family. Furthermore, it can be stated that young people tend to use environmentally friendly practices more frequently partially due to their future anxiety. In order to solve environmental problems, it is necessary to increase the environmental awareness of individuals and exhibit more conscientious behavior. Education programs, public service announcements, etc. should be created and developed by considering the differences between individuals' knowledge levels, environmental attitudes and behaviors in terms of variables such as gender, age, education level in order to achieve awareness-raising activities. In order to leave a more livable environment for future generations, it is important to exhibit behaviors aimed at protecting the environment both during production processes and in terms of individual consumption. At this juncture of time, governments should focus on policies aimed at creating pressure on companies regarding environmental protection measures to be applied during their production processes and ensuring the widespread use of environmentally friendly products and packaging.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Author Contributions

The authors contributed jointly at all stages of the article. All authors were active participants in the study and publication process and consented to participate.

References

- Acungil Y. A study on determining environmental attitudes and behavioral levels of university students: The case of Tokat Gaziosmanpaşa University. *Ankara University SBF Journal* 2020; 75(3): 997-1032. <https://doi.org/10.33630/ausbf.780600>
- Altın A., Tecer S., Tecer L., Altın S., Kahraman BF. Environmental awareness level of secondary school students: A case study in Balıkesir (Turkey). *Procedia-Social and Behavioral Sciences* 2014; 141: 1208-1214. <https://doi.org/10.1016/j.sbspro.2014.05.207>

- Ateş HK., Öner AI. Investigation of preservice teacher awareness levels for environmental problems. *The Journal of Kesit Academy* 2020; 6(24): 126-144. <https://doi.org/10.29228/kesit.44369>
- Ateşoğlu UL., Erkal S. Yetişkinlerin çevresel sorunlara yönelik tutum ve davranışlarının incelenmesi. III. Uluslararası Al- Farabi Sosyal Bilimler Kongresi. 2018, Ankara. Kongre Tam Metin Kitabı, 94.
- Boeve-de Pauw J., Van Petegem P. A cross-national perspective on youth environmental attitudes. *The Environmentalist* 2010; 30(2): 133-144. <https://doi.org/10.1007/s10669-009-9253-1>
- Budak DB., Budak F., Zaimoglu Z., Kecec S., Sucu MY. Behaviour and attitudes of students towards environmental issues at faculty of agriculture, Turkey. *Journal of Applied Sciences* 2005; 5(7): 1224-1227.
- Çifci S., Şakacı BK. Environmentally conscious consumers' willingness to punish and reward firms: the differences between genders. *Eskişehir Osmangazi University Journal of Economics and Administrative Sciences* 2015; 10(1): 287-296.
- Daudi SS. Environmental literacy: A system of best-fit for promoting environmental awareness in low literate communities. *Applied Environmental education and communication*, 2008; 7(3): 76-82. <https://doi.org/10.1080/15330150802502155>
- Doğan I., Puruçuoğlu E. The determination of the environmental awareness levels of social workers and their attitudes towards the environment. *The Journal of Turkish Social Research*, 2017; 21(2): 389-405.
- Duroy QM. The determinants of environmental awareness and behavior. *Rensselaer Working Papers in Economics* 0501, 2005.
- Gökdayı F., Demirel M. Investigation of the levels of environmental awareness of the individuals at the nature sports activities as a leisure time activities. *International Journal Mountaineering and Climbing* 2018; 1(1): 45-53. <https://doi.org/10.36415/dagcilik.485987>
- Gül S., Aydoğmuş M., Çobanoğlu İH., Türk H. Investigation of environmental consciousness of university students: The Sample of Ondokuz Mayıs University. *Gazi Journal of Education Sciences* 2018; 4(3): 13-28. <https://doi.org/10.30855/gjes.2018.04.03.002>
- Ham M., Mrčela D., Horvat M. Insights for measuring environmental awareness. *Ekonomski vjesnik/Econviews - Review of Contemporary Business, Entrepreneurship and Economic Issues* 2016; 29(1): 159-176.
- Hassan A., Noordin TA., Sulaiman S. The status on the level of environmental awareness in the concept of sustainable development amongst secondary school students. *Procedia - Social and Behavioral Sciences* 2010; 2(2): 1276-1280. <https://doi.org/10.1016/j.sbspro.2010.03.187>
- Karahan M. Determination of environmental sensitivity and awareness levels of business managers. *Manas Journal of Social Studies* 2017; 6(4): 359-374.

- Karaismailođlu ES. Determination of teachers' environmental consciousness level- Ankara Etemesgut example. (Publication No. 516219) [Master's thesis, Hacettepe University], 2018. <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Karatekin K. Social studies pre-service teachers' awareness of solid waste and recycling. *Procedia-Social and Behavioral Sciences* 2014; 116: 1797-1801. <https://doi.org/10.1016/j.sbspro.2014.01.474>
- Keleş Ö., Uzun N., Uzun FV. The change of teacher candidates environmental consciousness, attitude, thought and behaviors with nature training project and the assessment of its permanence. *Electronic Journal of Social Sciences* 2010; 9(32): 384-401.
- Kiper T., Korkut A., Topal TÖ. A research on environmental sensitivity of university students: in the example of Namık Kemal University. *Inonu University Journal of Art and Design* 2017; 7(16): 112-124. <https://doi.org/10.16950/iu-jad.337132>
- Kurt Konakođlu SS. A Study for determining the level of consciousness, awareness and sensitivity of university students on environmental issues: the case study of the Department of Urban Design and Landscape Architecture at the Amasya University, Turkey. *The Journal of Graduate School of Natural and Applied Sciences of Mehmet Akif Ersoy University* 2020; 11(2): 130-141. <https://doi.org/10.29048/makufebed.718232>
- Korhonen K., Lappalainen A. Examining the environmental awareness of children and adolescents in the Ranomafana region, Madagascar. *Environmental Education Research* 2004; 10(2): 195-216. <https://doi.org/10.1080/13504620242000198177>
- Li Y. Study of the effect of environmental education on environmental awareness and environmental attitude based on environmental protection law of the People's Republic of China. *Eurasia Journal of Mathematics, Science and Technology Education* 2018; 14(6): 2277-2285. <https://doi.org/10.29333/ejmste/86214>
- Mei NS., Wai CW., Ahamad R. Environmental awareness and behaviour index for Malaysia. *Procedia-Social and Behavioral Sciences* 2016; 222: 668-675. <https://doi.org/10.1016/j.sbspro.2016.05.223>
- Ministry of Environment and Urbanization. 6. Türkiye çevre durum raporu (Yayın No: 48). Çevresel Etki Deđerlendirmesi, İzin ve Denetim Genel Müdürlüğü. 2020, <https://ced.csb.gov.tr/>
- Morrison PS., Beer B. Consumption and environmental awareness: Demographics of the European experience. In Shibusawa H., Sakurai K., Mizunoya T., Uchida S. (Eds.), *Socioeconomic environmental policies and evaluations in regional science* (pp. 81-102). *New Frontiers in Regional Science: Asian Perspectives* 2017, vol 24. Springer, Singapore. https://doi.org/10.1007/978-981-10-0099-7_5
- Nazarenko AV., Kolesnik AI. Raising environmental awareness of future teachers. *International Journal of Instruction* 2018; 11(3): 63-76. <https://doi.org/10.12973/iji.2018.1135a>

- Ogunbode CA., Arnold K. A study of environmental awareness and attitudes in Ibadan, Nigeria. *Human and ecological risk assessment: An International Journal* 2012; 18(3): 669-684. <https://doi.org/10.1080/10807039.2012.672901>
- Oğuz D., Çakıcı I., Kavas S. Environmental awareness of students in higher education. *Süleyman Demirel University Faculty of Forestry Journal* 2011; 12(1): 34-39. <https://doi.org/10.18182/tjf.65605>
- Oktav T., Dereceli E., Ülkü HH. Awareness level of vocational school students about environmental problems. *Aydın Adnan Menderes University Journal of Institute of Social Sciences* 2021; 8(1): 1-14. <https://doi.org/10.30803/adusobed.814381>
- Omoogun AC., Egbonyi EE., Onnoghen UN. From environmental awareness to environmental responsibility: Towards a stewardship curriculum. *Journal of Educational Issues* 2016; 2(2): 60-72. <http://dx.doi.org/10.5296/jei.v2i2.9265>
- Öden MK., Küçükçongar S., Gök Z. An investigation into the environmental sensitivity and awareness level-a case study of Sarayönü district, Konya. *Turkish Journal of Agriculture - Food Science And Technology* 2015; 3(11): 869-873. <https://doi.org/10.24925/turjaf.v3i11.869-873.487>
- Özbebek Tunç A., Akdemir Ömür G., Düren AZ. Environmental awareness. *İstanbul University Siyasal: Journal of Political Sciences* 2012; 47: 227-246.
- Özden M. Environmental awareness and attitudes of student teachers: An empirical research. *International Research in Geographical and Environmental Education* 2008; 17(1): 40-55. <https://doi.org/10.2167/irgee227.0>
- Palmer JA., Suggate J., Bajd B., Tsaliki E. Significant influences on the development of adults' environmental awareness in the UK, Slovenia and Greece. *Environmental Education Research* 1998; 4(4): 429-444. <https://doi.org/10.1080/1350462980040407>
- Şahin S., Ünlü E., Ünlü S. Investigation of teacher candidates' environmental literacy awareness level. *Education Sciences* 2016; 11(2): 82-95. <http://dx.doi.org/10.12739/NWSA.2016.11.2.1C0655>
- Takala M. Environmental awareness and human activity. *International Journal of Psychology* 1991; 26(5): 585-597. <https://doi.org/10.1080/00207599108247146>
- Tomar CS. Environmental awareness through education. *International Journal of Engineering and Management Research (IJEMR)* 2017; 7(3): 752-757.
- Ünver S., Avcıbaşı İM., Özkan ZK. Determination of environmental attitudes and awareness of nurses working in university hospital. *Journal of Anatolia Nursing and Health Sciences* 2015; 18(4): 282-286.
- Verma SK. Environmental awareness: A need of nature. *Journal of Global Resources* Volume, 2016; 182-185.
- Wong TKY., Wan SP. Environmental awareness and behavior in Hong Kong: a decade of development. In *TASPAA Partnership with the International Conference on Sustainable Development*. 2008.

- Yamane T. Temel Örnekleme Yöntemleri (Translation: Alptekin Esin, M.Akif Bakır, Celal Aydın, Esen Gürbüzsel). Literatür Yayınları. Birinci Basım. İstanbul. 2001.
- Yolođlu AC., Halisdemir B. An empirical study on environmental awareness and environmental attitudes of university students: The case of Mersin University. The Journal of Academic Social Science 2020; 103: 91-107. <https://doi.org/10.29228/ASOS.41902>
- Yücel M., Altunkasa F., Güçray S., Uslu C., SAY NP. Investigation on the environmental awareness level and its developing possibilities in Adana. Akdeniz University Journal of the Faculty of Agriculture 2006; 19(2): 217-228.
- Žuk P., Žuk P. Environmental awareness and higher education: Differences in knowledge and the approach to ecology between students of technical sciences and the humanities in Poland. Applied Environmental Education and Communication 2018; 17(2): 150-160. <https://doi.org/10.1080/1533015X.2017.1388196>