INVESTIGATION OF THE RELATIONSHIP BETWEEN UNIVERSITY STUDENTS' SUSTAINABLE DEVELOPMENT AWARENESS LEVELS AND BEHAVIOR LEVELS TOWARDS ENVIRONMENTAL PROBLEMS[1]

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Abstract

For the implementation of sustainable development, the behaviors of individuals, who are at the center of the development process, towards environmental problems play a crucial role. Increasing awareness of sustainable development can lead to more effective and conscious behaviors towards environmental problems by individuals. In this respect, the research aims to examine the relationship between the awareness levels of university students regarding sustainable development and their behavior levels towards environmental problems. In the study, data collected from 401 university students studying at Kırıkkale University in the Kırıkkale province of Türkiye were analyzed using the survey method, which is a quantitative research technique. Examining the relationship between the level of behavior towards environmental problems and the level of awareness of sustainable development, specifically among university students, constitutes the original value of the study. The research findings show that there is a positive relationship between the awareness levels of university students regarding sustainable development and their behavior levels towards environmental problems. In addition, the findings reveal that the awareness levels of the participating university students regarding sustainable development explain 27.6% of their behavior levels towards environmental problems (R: 0.52 and R-squared: 0.276). This research examines the nature of the relationship between individual behaviors towards the environment and awareness of sustainable development, and highlights the importance of individual contributions to sustainability policies.

Keywords: *Sustainable development, Behavioural level towards environmental problems, Sustainable environment, Sustainable development awareness level.*

Jel Code: *Q01, O13, P28*

Üniversite Öğrencilerinin Sürdürülebilir Kalkınma Farkındalık Düzeyleri ile Çevre Sorunlarına Yönelik Davranış Düzeyleri Arasındaki İlişkinin İncelenmesi

Öz

Sürdürülebilir kalkınmanın hayata geçirilebilmesi için kalkınma sürecinin merkezinde bulunan bireylerin çevre sorunlarına karşı sergilediği davranışlar önemli rol oynamaktadır. Sürdürülebilir kalkınma farkındalığının artması bireylerin çevre sorunlarına yönelik daha etkin ve bilinçli davranışlar sergilenmesine yol açabilir. Bu doğrultuda araştırmanın amacı üniversite öğrencilerinin sürdürülebilir kalkınma farkındalık düzeyleri ile çevre sorunlarına yönelik davranış düzeyleri arasındaki ilişkinin incelenmesidir. Çalışmada, nicel araştırma tekniklerinden anket yöntemi ile Türkiye'nin Kırıkkale ilinde bulunan Kırıkkale Üniversitesi'nde öğrenim gören 401 üniversite öğrencisinden toplanan veriler analiz edilmiştir. Çevre sorunlarına yönelik davranış düzeyi ile sürdürülebilir kalkınma farkındalık düzeyi arasındaki ilişkinin üniversite öğrencileri özelinde incelenmesi çalışmanın özgün değerini oluşturmaktadır. Araştırma bulguları üniversite öğrencilerinin sürdürülebilir kalkınma farkındalık düzeyleri ile çevre sorunlarına yönelik davranış düzeyleri arasında pozitif yönlü ilişki olduğunu göstermektedir. Ayrıca bulgular, araştırmaya katılan üniversite öğrencilerinin sürdürülebilir kalkınma konusundaki farkındalık düzeylerinin çevre sorunlarına yönelik davranış düzeylerinin %27,6'sını açıkladığını ortaya koymaktadır (R: 0,52 ve R square: 0,276). Bu araştırma, çevreye yönelik bireysel davranışlar ile

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sürdürülebilir kalkınma farkındalığı arasındaki ilişkinin niteliğini irdeleyerek, sürdürülebilirlik politikalarına bireysel katkının önemine dikkat çekmektedir.

Anahtar Kelimeler: *Sürdürülebilir kalkınma, Çevre sorunlarına yönelik davranış düzeyi, Sürdürülebilir çevre, Sürdürülebilir kalkınma farkındalık düzeyi.*

1. Introduction

The environment is the habitat of all living things. Natural resources such as clean air, water, and soil are necessary to meet the basic needs of human life. In addition, ecosystems and the natural environment also provide the ground for many economic activities. Environmental protection, sustainability of biodiversity, and healthy functioning of ecosystems also play a critical role in long-term economic development. However, environmental damage triggers many natural disasters, and as a result, humanity faces significant difficulties. Problems such as ozone layer depletion, deforestation, and water resource pollution bring environmental but also economic, social, and cultural issues (Baykal & Baykal, 2008). On the other hand, regional and globally changing environmental conditions directly or indirectly affect the lives of individuals living in the relevant places. Factors such as increasing world population, regional conflicts, use of fossil fuels as energy sources, industrialization, and growth trigger environmental pollution as driving forces and bring environmental problems. In this context, environmental pollution, directly or indirectly related to human activities in the global atmosphere, is examined as a scientific problem (Singh & Singh, 2016; Zhu et al., 2016).

Environmental disasters caused by human activities have increased rapidly since the Industrial Revolution. In the 20th century, the Industrial Revolution significantly transformed the relationship between humans and nature. People's search to meet their unlimited needs led them to see nature as a limitless resource and to consume it excessively, which caused environmental pollution and destruction (Arsal, 2010). On the other hand, using non-renewable energy sources such as oil, gas, and coal in every area of the production and consumption process causes environmental problems to deepen. The rapid depletion of natural resources and increasing natural disasters reveal significant environmental threats. The most important step to minimize these damages is to raise sustainable environmental awareness in people (Şeker & Hacıeminoğlu, 2021). The fact that environmental pollution has become a significant problem over time has brought sustainable development policies to the agenda, which argue that economic and social policies should be in harmony with environmental policies at every stage of development (Tıraş, 2012, p.69). At this point, sustainable development has gained an important place in the literature by adding a new dimension to the relationship between economic development and the environment. The concept of sustainability, which is widely used in different fields, defines a process that emphasizes the careful use of society's social, cultural, scientific, natural, and human resources and provides a social perspective to this (Gladwin et al., 1995, p.877).

Sustainable development is an important concept in the context of environmental and environmental protection policies in national and international literature today. Especially in recent years, when environmental problems have increased rapidly, sustainable development with its economic, social, and environmental dimensions has begun to be discussed more in the literature. Sustainable development means meeting the needs of the current generations and ensuring that future generations continue their lives without jeopardizing their capacity to meet their needs (Yeni, 2014; Yüksek, 2010). In the literature, discussions are made on three basic dimensions: economic, social, and environmental for sustainable development to be successful (Ergün & Çobanoğlu, 2012; Gürlük, 2010). Environmental sustainability includes protecting the natural environment, reducing pollution, and increasing environmental awareness (Güner, 2020). While social sustainability focuses on protecting

the quality of life of individuals and societies, economic sustainability aims to continue economic activities in the long term without creating negative impacts on social and environmental dimensions (Yakışık & Mustafazade, 2023, p.3610).

Based on this, sustainable development can only be achieved globally if individuals, institutions, and organizations change their value judgments, attitudes, and behaviors (Dobson, 2007). Individuals with high awareness of sustainable development are more conscious of environmental problems and more sensitive to environmental protection (Fien, 2006).

Sustainable development includes important issues such as individuals continuing their lives more healthily today and in the future, consciously consuming natural resources to meet the needs of future generations, and maintaining the balance between humans and nature. Solving environmental problems is only possible if individuals become conscious of environmental problems and make efforts to solve these problems. In addition, increasing the consciousness and awareness of individuals regarding environmental problems will contribute to the awareness of sustainable development. Therefore, the behaviors of individuals at the center of development towards environmental problems are essential for sustainable development.

Individuals' behaviors toward environmental issues, which are at the heart of development, play a critical role in achieving sustainable development. Increasing awareness of sustainable development can lead individuals to adopt more effective and conscious behaviors toward environmental issues. Joint efforts and public awareness must be raised to ensure the sustainability of all living things and the future of our planet against environmental pollution, one of the fundamental problems of our age. In this context, this study examines the relationship between university students' awareness of sustainable development and their behavior toward environmental issues. A review of the relevant literature reveals that the number of studies examining the relationship between behavior toward environmental issues and awareness toward sustainable development is quite limited. This influenced the selection of the study topic. This research is expected to contribute to the literature by revealing the relationship between university students' behavior toward environmental issues and their awareness of sustainable development. Furthermore, this study distinguishes itself from previous studies in the literature by examining both variables within a holistic framework, considering both awareness of sustainable development and behavior toward environmental issues together. The findings of this study are expected to contribute to the development of environmental education policies and planning processes in higher education institutions by revealing the current status of university students' environmental behavior and awareness of sustainable development. The hypotheses of the research are as follows;

H1: There is a significant relationship between the participants' awareness of sustainable development and their behaviors towards environmental problems.

H2: Participants' sustainable development awareness levels affect their behaviour levels towards environmental problems.

1.1. Literature Review

Raising awareness about environmental problems and the impact of human behavior on the natural ecological environment is crucial today. Environmentally friendly behaviors consist of actions that minimize environmental damage and support environmental improvement. Reducing environmental impacts is possible through individuals changing their environmentally related behaviors (Steg & Vlek, 2009). On the other hand, among the theories developed to explain the relationship between attitudes and behaviors, the Theory of Planned Behavior suggests that attitudes shape behavioral intention, and intention directs behavior (Ajzen, 1991). Individuals' intentions to perform various behaviors are predictable through their attitudes, the expectations of others, and their ability to

control their own behavior. Furthermore, these intentions and perceived control contribute to explaining the change in actual behavior (Ajzen, 1991, p. 179). In this context, increasing awareness of sustainable development can enable individuals to consciously support their environmental attitudes, transforming them into environmentally friendly actions.

The interaction between sustainable development awareness and the level of behavior towards environmental problems is important in understanding people's attitudes and actions towards the environment. The relationship between these two concepts is critical in increasing environmentally sensitive behaviors and promoting sustainable development. However, when the sustainable development and environment literature is examined, it is understood that the relationship between sustainable development and the environment should be addressed with its economic, social, and societal dimensions. It is possible to come across studies examining sustainable development awareness through different samples in the literature. In these studies, it is seen that the level of sustainable development awareness varies according to the sample taken. For example, Njoku (2016), in his study on climate change and sustainable development awareness of secondary school students, concluded that secondary school students' sustainable development awareness and climate change knowledge were low. Omisore et al. (2017) examined the sustainable development knowledge and attitudes of the university community, consisting of students and staff at a public university in Nigeria. The findings showed that the university community's knowledge level about sustainable development goals was low, while their awareness and attitudes were better.

Oztürk Demirbaş (2011) examined the sustainable development awareness levels of teacher candidates and found that teacher candidates' sustainable development awareness was high in terms of environmental-ethical and social-social factors and moderate in terms of environmental-economic factors. Tayyar et al. (2017) examined university students' knowledge, attitude, and behavior levels regarding the sustainable development approach. When the results of first and fourth year students were compared, it was determined that there was no significant increase in knowledge and behavior levels, but a significant increase in attitudes.

Yakışık and Mustafazade (2023) examined the awareness levels of individuals regarding all sub-dimensions of sustainable development using a survey method. The findings reveal that individuals' sustainable development awareness differs according to their knowledge, attitude, and behavior levels. Aslan et al. (2024) conducted a field study to determine the awareness levels of healthcare sector employees regarding sustainable development. It was determined that healthcare professionals' social sustainability awareness levels were higher than their economic and environmental sustainability.

Due to the increasing environmental problems and their threat to all life on earth, protecting the environment, our only living space, and instilling a sustainable environmental understanding in all individuals is crucial. Protecting the environment is not limited to keeping ecosystems healthy; it also directly affects human health, economic sustainability, and social welfare. Based on this importance, when the environmental literature is examined, it is seen that studies carried out in the field of environmental awareness and behavior levels have increased in recent years.

Pe'er et al. (2007) examined the relationship between environmental knowledge and attitudes of prospective teachers in Israel. The findings show that although the environmental knowledge of prospective teachers is limited, their general attitudes towards the environment are positive. Durkan (2020) examined the behaviors and thoughts of students receiving pedagogical formation education towards the environment according to gender, and it was determined that the environmental behavior levels of students receiving pedagogical formation education did not show a statistically significant difference according to gender.

Makki et al. (2003) assessed the environmental knowledge and attitudes of secondary school students in Lebanon and examined how the relationship between these two variables differed according to demographic and academic factors. It has been found that entrepreneurs have positive attitudes towards the environment, but their environmental knowledge is insufficient. In addition, the study found that environmental knowledge is related to the education level of parents and the environmental attitudes, beliefs, emotions, and behavioral commitments of the participants. On the other hand, it is noteworthy that the number of studies in the literature addressing the relationship between sustainable development awareness and environmental problems is limited. Sustainable development and the environment are important concepts that are closely related to each other. In the literature, different variables such as climate change awareness and ecological footprint are considered representatives of the environment.

For example, Agboola and Emmanuel (2016) examined the sustainable development awareness and climate change of undergraduate students from Nigerian universities. They concluded that university students' awareness of climate change and sustainable development was high. Olgay et al. (2024) used a survey to examine the relationship between nursing students' sustainable development awareness levels and new environmental paradigms. The findings reveal that ecocentrism positively affects sustainable development awareness levels.

Aslan and Yağmur (2022) used qualitative research to examine science teachers' sustainability and ecological footprint knowledge levels. As a result of the research, it was determined that science teachers' knowledge levels about the concepts of ecological footprint and sustainability were very insufficient. Gürler (2023) examined classroom teacher candidates' sustainable development awareness and metaphorical perceptions about the concept of natural resources using a mixed research method. As a result of the research, it was determined that teacher candidates' sustainable development awareness was at a moderate level. In addition, it was concluded that teacher candidates mainly produced water and breath metaphors regarding the concept of natural resources.

Karpudewan et al. (2013) investigated prospective teachers' awareness levels and understanding of traditional environmental and sustainable development concepts. The findings show that prospective teachers' awareness and understanding of sustainable development concepts are lower than traditional environmental concepts. In the study conducted by Labog (2017), the relationship between teachers' environmental awareness and sustainable development levels was examined, and it was concluded that teachers' environmental awareness affects sustainable development practices.

Hassan et al. (2010) revealed that secondary school students in Malaysia have a high level of environmental awareness within the scope of sustainable development. In another study conducted on students in Malaysia, Yusliza et al. (2020) found that environmental awareness and environmental commitment contribute to environmentally friendly behaviors. Hnatyuk et al. (2024) found that university students who actively participate in academic education in Ukraine take part in sustainability-oriented initiatives, such as participation in environmental activities and recycling, and also show a high interest in green technologies and alternative energy sources.

The relationship between sustainable development awareness and behaviour levels related to environmental problems has been examined in various academic studies. In the literature, it is emphasised that sustainable development awareness positively affects individuals' behaviours towards the environment and encourages sustainable behaviours by increasing environmental awareness (Ozturk Demirbaş, 2011; Güven & Aydoğdu, 2012). However, it is also an important finding in the literature that environmental behaviours are shaped by individuals' knowledge, values, attitudes, and social influences. Having environmental awareness is an important source of motivation for individuals to

exhibit environmentally friendly behaviours. Thus, the relationship between sustainable development awareness and environmental behaviours may vary depending on various factors such as educational level, social and cultural factors, and individual motivations. In this study, it is aimed to raise awareness of today's basic problems and contribute to the literature by examining the relationship between university students' sustainable development awareness levels and their behaviour levels towards environmental problems.

2. Method

In this section, the methodological information of the research, such as the research population, research design and sampling, research process, data collection tools, and data analysis, is given.

2.1. Research Design

This study examines the relationship between university students' sustainable development awareness levels and their behaviours towards environmental problems. In this context, a quantitative approach was adopted in the research design, and data were collected by the questionnaire method. The questionnaire form was structured by the purpose of the study, developed in line with the relevant literature, and finalised by taking expert opinion. No experimental intervention was made in the study, and the current situation was analysed in line with the participants' statements. In addition, a relational survey model with descriptive features was used in the study because it is a pioneering study that reveals direct and indirect relationships between more than one variable. The relational survey model is widely used, especially in the social sciences, to examine relationships between variables (Swedberg, 2020; Christensen et al., 2014).

2.2. Population and Sample

The research sample consists of university students studying at Kırıkkale University. While determining the sample size for the research, different opinions obtained from various studies in the field of social sciences were carefully analysed. Since the effect of a mediating variable was examined in the study, the minimum and maximum sample sizes recommended by Fritz and MacKinnon (2007) for studies involving mediating variable measurements were taken into consideration. In addition to the sample size guidelines of Krejcie and Morgan (1970), which are widely used in social and behavioural sciences, the number of items and sub-dimensions of each scale in the study were also evaluated separately. In addition, the minimum sample size required for statistical analyses suggested by Hair et al. (2014) was also taken into consideration. In the field research conducted on a specific sample in the research, the adequate sample size was determined as 384 people (Krejcie & Morgan, 1970). After the sample size was determined, the selection method of the participants in social research was determined. Considering factors such as time and cost constraints and geographical distribution, the convenience sampling method was preferred in the data collection process.

2.3. Research Process

After the measurement tools were determined, they were adapted to Turkish by taking expert opinions. Then, the ethics committee certificate stating that the study is by ethical principles was obtained from Kırıkkale University Social and Human Sciences Research Ethics Committee. The official approval of compliance with research ethics and obtaining permission from the institution (Kırıkkale University) where the questionnaire will be applied is an important stage that contributes to the formality and transparency of the research. In the next stage, a pilot study was conducted to determine whether the scale items were understandable. Deficiencies and errors in the questionnaire form were corrected, and the questionnaire form was finalised. The questionnaires were prepared in digital format with Google Forms, and the data collection phase started. The questionnaires were applied

to 430 university students studying at Kırıkkale University in October, November, and December 2024. The collected data were checked before the analysis, and incomplete or incorrectly completed questionnaire forms were excluded from the study. Accordingly, the data obtained from 401 university students were used in the study. Finally, the data obtained were analysed using the statistical package program (SPSS), and the relationship between students' behaviours towards environmental problems and sustainable development awareness levels in the determined sample was tested.

2.4. Data Collection Tools

Within the scope of the research, a questionnaire study was conducted for the students of Kırıkkale University to measure the research variables. In the process of preparing the questionnaire form, studies on sustainable development awareness and behavioural levels towards environmental problems in the literature and the scales used in these studies were examined. In this way, the scales to be used in the study were determined. The 'Sustainable Development Awareness' scale developed by Oztürk Demirbaş (2011) was used to measure sustainable development awareness. The responses to the items in this measurement tool are designed as a 5-point Likert-type scale (1=Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly agree). To measure the level of behaviour towards environmental problems, the 'Behaviour towards Environmental Problems' scale developed by Güven and Aydoğdu (2012) was used. The responses to the items in this measurement tool are in the form of a 3-point Likert-type scale (1= Disagree, 2= Undecided, 3= Agree). During the editing process, the cross-cultural scale adaptation methodology was utilized (Çapık et al., 2018). The scale items were first translated from English to Turkish, then back to English, and edited with expert opinions. Afterwards, pilot tests were conducted with feedback from experts in the field. During each pilot test, the reliability of the measurement items was evaluated, and the items with a total item correlation above .3 were included in the questionnaire. After the questionnaire form was prepared, a pilot study was conducted with 100 university students to determine the existing errors and deficiencies regarding the statements. The identified expression errors were corrected, and the questionnaire form was finalised.

In the first part of the questionnaire form, demographic characteristics of the participants, such as age, gender, marital status, etc., are included. In the second part, the differences in the awareness levels of the participants regarding sustainable development are discussed. In this section, there are 3-dimensional and 30-item statements to measure the level of awareness. In the third section, there are 40-item statements with environmental-ethical and environmental-social dimensions developed to measure the behavioural levels of the participants towards environmental problems.

2.5. Data Analysis

The data obtained within the scope of the research were analyzed using the statistical package program (SPSS) and the AMOS program for the construction of Structural Equation Modeling, and the relationship between students' attitudes towards environmental problems and their awareness levels of sustainable development was tested. In this context, the demographic characteristics of the participants were first analyzed based on survey data. Then, reliability analyses and factor analyses of the scales were performed. The reliability values of the measurement instruments were interpreted by calculating the Cronbach's Alpha coefficient. Hair et al. (2014) stated that in social science studies, a Cronbach's Alpha coefficient of 0.7 or higher indicates that the measurement instrument is reliable. If the Cronbach's Alpha coefficient is 0.7 or lower, it is recommended that researchers remove the relevant measurement instrument from their studies or terminate their research (Christensen et al. 2014). Tabachnick and Fidell (2019) emphasize that when a measurement tool, especially one inspired by a different culture, is translated into another language or used with a different sample than the one used during the development of the tool, confirmatory factor analysis must be applied to test the structural compatibility

of the new study with the original measurement tool. They stress that standardized factor loadings greater than 0.5 should be included in the study. Therefore, to assess the validity of the research, a Confirmatory Factor Analysis was conducted using the AMOS program, and standardized factor loadings greater than 0.5 were included and interpreted. In the study, Mean Explained Variance (AVE) and Composite Reliability (CR) were calculated as additional validity measures using the standardized factor loadings obtained from confirmatory factor analysis. Generally, an AVE value greater than 0.5 and a CR value greater than 0.7 indicate that the measurement instrument yields valid results, while a Cronbach's Alpha value greater than 0.7, a CR value greater than 0.7, and an AVE value in the range of 0.4-0.5 also indicate that the measurement instrument is valid and reliable (Fornel and Lacker, 1981). Finally, correlation and regression analyses were performed to test the hypotheses.

2.6. Research Ethics

For the questionnaire method used in this research, permission was obtained with the decision of the Ethics Committee of Kırıkkale University Social and Human Sciences Research Ethics Committee at its meeting dated 24/06/2024 and numbered 06, with the decision of the ethics committee that there is no ethical and scientific drawback in conducting the research.

3. Findings

According to the data obtained from 401 university students studying at Kırıkkale University via the survey method, the demographic characteristics of the participants are summarized in Table 1. When the demographic characteristics of the participants are examined, it is seen that 55.9% are female and 44.1% are male. When the educational backgrounds of the participants are examined, it is seen that 74.8% are associate degree students, 20.4% are undergraduate students, and 4.7% are postgraduate students. 81.3% of the participants are students aged 18-26. On the other hand, it is seen that 54.4% of the participants have an income of less than 15,000 TL.

Table 1

Demographics of the Participants

	N	%
Gender		
Female	224	55,9
Male	177	44,1
Education		
Associate Degree	300	74,8
Bachelor's Degree	82	20,4
Post-Graduate Degree	19	4,7
Age		
18-26	326	81,3
27-34	51	12,7
35-42	11	2,7
43 and above	13	3,2
Marital Status		
Married	26	6,5
Single	375	93,5
Monthly Personal Income		
Less than 15,000 TL	218	54,4
Between 15,000-24,999 TL	97	24,2
Between 25,000- 34,999 TL	43	10,7
Over 35,000 TL	43	10,7

Cronbach's Alpha was considered while interpreting the reliability values of the measurement tools used in the research. At the same time, confirmatory factor analysis was performed to determine

the construct validity, composite reliability, and average explained variance values were examined. The findings are summarized in Table 2.

Table 2

Validity and Reliability Values

Sub-Dimensions	St. Loads	AVE	CR	Cronbach's Alpha
Behaviour (BH)		**0,50**	**0,95**	**0,91**
BH6	0,787			
BH7	0,758			
BH9	0,825			
BH11	0,547			
BH14	0,63			
BH15	0,609			
BH16	0,691			
BH17	0,819			
BH18	0,66			
BH20	0,694			
BH21	0,643			
BH25	0,76			
BH26	0,726			
BH28	0,667			
BH31	0,676			
BH34	0,626			
BH36	0,795			
BH38	0,798			
Environmental Ethics (EE)		**0,55**	**0,94**	**0,94**
EE1	0,691			
EE2	0,763			
EE3	0,743			
EE4	0,693			
EE5	0,770			
EE6	0,741			
EE7	0,784			
EE8	0,715			
EE10	0,775			
EE11	0,781			
EE12	0,724			
EE13	0,767			
EE14	0,686			
Social and Societal Ethics (SS)		**0,46**	**0,88**	**0,88**
SS1	0,698			
SS2	0,538			
SS3	0,707			
SS4	0,535			
SS5	0,773			
SS6	0,796			
SS7	0,758			
SS8	0,689			
SS9	0,557			

First-order CFA was applied to other measurement tools. According to the findings obtained from the scales, construct validity was ensured, and the reliability of the data was high. As a result of the analysis, it was determined that the model fit for the Scale of behavior level towards environmental problems was well [$\chi2 = 381,190$, df = 132, p < .001; $\chi2$ / df = 2,89 RMSEA = .07; CFI = .91; GFI= .89; IFI = .91]. Also, the scale of Awareness for the sustainable development model had good fit indexes [$\chi2 = 720,268$, df = 203, p < .001; $\chi2$ / df = 3.46; RMSEA = .07; GFI .86; CFI = .91; IFI = .91].

Multiple linear regression analysis examined the relationship between the participants' awareness of sustainable development and their behavioral levels towards environmental problems. The

theoretical model was analyzed using the structural regression model. Before the model test, the normality assumption of the variables was tested according to the kurtosis and skewness measures, and the existence of the multicollinearity problem was tested according to the Variance Inflation Factor (VIF) and Condition Index (CI) values. The results obtained are summarized in Table 3. According to the multiple linear regression analysis conducted, the constant coefficient of the model was found to be statistically significant ($\beta = 1.379$, $p < 0.001$). According to the results, it was determined that there was no multicollinearity problem between the variables (VIF <5). It was also seen that there was no autocorrelation between the variables (Durbin-Watson: 1.489). The general significance of the model is less than the p-value (0.05). In other words, the model is suitable for mathematical calculations (sig.0.000). As a result of the analysis, it was seen that the participants' awareness levels of sustainable development explained 27.6% of their behavioral levels towards environmental problems (R: 0.525 and R square: 0.276).

The regression analysis revealed that individuals' awareness of sustainable development was most strongly influenced by environmental ethical values, followed by social and societal ethical values. Mathematically expressing the relationships between the dependent and independent variables in the study yields the following function:

Awareness of Sustainable Development = 1.379 + Environmental Ethics * 0.18 + Social and Societal Ethics * 0.124

Table 3

Results of Multiple Linear Regression Analysis Among Variables

	Standart Error	Beta Coefficient	T-statistics	p	Tolerance	VIF
Constant	0,102	1,379	13,568	0,000	-	-
Environmental Ethics	0,039	0,180	4,564	0,000	0,347	2,882
Social and Societal Ethics	0,041	0,124	3,046	0,002	0,347	2,882

Pearson Correlation analysis was performed on the relationship between the participants' sustainable development awareness levels and their behavioral levels towards environmental problems, and the results are summarized in Table 4.

Table 4

Correlation Analysis Results

	Behaviour	Environmental Ethics	Social And Societal Ethics
Behaviour	1		
Environmental Ethics	0,509**	1	
Social And Societal Ethics	0,488**	0,608**	1

The relationship between sustainable development awareness and behavioural levels related to environmental problems is important in terms of understanding how environmental awareness and sustainability goals are shaped in individuals' daily lives. Theoretically, sustainable development awareness refers to the capacity of individuals to understand the principles of sustainability in environmental, economic, and social dimensions and to integrate these principles into their lives. This awareness paves the way for more sensitive behaviours towards environmental problems. Behavioural levels related to environmental problems include the active attitudes and actions of individuals for environmental sustainability. The relationship between these two concepts provides a theoretical model showing that individuals exhibit more responsible and conscious behaviours towards the environment

as awareness of sustainable development increases. The findings obtained from the correlation analysis in Table 4 of the study also support this. The findings show that there is a moderate positive relationship between the participants' sustainable development awareness levels and their behaviour levels regarding environmental problems.

4. Conclusion, Discussion, and Suggestions

Environment and sustainable development are two critical elements that complement each other. Protecting the environment efficiently using natural resources is important to meet today's and tomorrow's needs. This is not only the responsibility of countries but also of individuals. Societies can realize the necessary change for a healthy world by acting with the awareness of protecting the environment and taking steps for sustainable development. Leaving a livable world for future generations is the shared responsibility of all individuals. The relationship between sustainable development awareness and the level of behavior towards environmental problems largely shapes the attitudes and behaviors of individuals towards environmental problems. However, for this relationship to be effective, in addition to awareness, the infrastructures, social norms, and economic conditions that encourage individuals' behaviors must also be appropriate.

This study examined the relationship between university students' sustainable development awareness levels and their behavior towards environmental problems using the survey method, a quantitative research technique. The sustainable development awareness scale and the behavior scale towards environmental problems were used in the study. The data from 401 university students studying at Kırıkkale University using the survey method were analyzed. First, the demographic characteristics of the participants were examined. Then, the general reliability value of the scales used in the study was examined. It was determined that the general reliability values of the scales were relatively high, the corrected correlation coefficient of each item was above 0.3, and even if any item were removed, no significant increase in general reliability would be observed. Multiple linear regression and Pearson Correlation analyses were performed to test the relationship between the participants' sustainable development awareness levels and their behavioral levels towards environmental problems. The multiple linear regression analysis findings revealed no multicollinearity problem and autocorrelation between the variables, and the participants' sustainable development awareness levels explained 27.6% of their behavioral levels towards environmental problems. The Pearson Correlation analysis findings showed a moderate positive relationship between the participants' sustainable development awareness levels and their behavioral levels towards environmental problems.

The findings are consistent with various studies in the literature. For example, in the study conducted by Labog (2017), it was determined that teachers' environmental awareness levels were effective in sustainable development practices. This supports the fact that awareness levels play an important role in shaping behaviors. Similarly, Hassan et al. (2010) stated that secondary school students in Malaysia had a high level of environmental awareness and that this was associated with sustainable development. Yusliza et al. (2020) emphasized that environmental awareness and commitment positively affected environmentally friendly behaviors. These studies reveal the strong connection between sustainability awareness and environmental behaviors.

However, in the study conducted in Ukraine by Hnatyuk et al. (2024), it was stated that university students actively participated in environmental activities, showed interest in recycling practices, and tended towards green technologies. This shows that individuals' awareness levels are not only at the knowledge level, but also at the behavioral level. The findings of the current study similarly show that sustainable development awareness is not only a cognitive process but can also be a determinant in the concrete actions of individuals towards the environment.

As a result, there was a positive relationship between university students' sustainable development awareness levels and their behavioral levels towards environmental problems. The findings from the study contribute to the literature in the environment and sustainable development field, and guide future studies to be conducted in this field. In addition, the study findings contribute to the positive change of students' behaviors towards environmental problems by increasing their awareness of critical issues closely related to human behavior, such as environmental problems and sustainable development. To provide a sustainable life for future generations, studies need to be encouraged to provide a more conscious and controlled approach to environmental problems. At this point, research findings are important in creating social awareness by contributing to solving an important economic, social, and community problem.

In addition, various policies should be developed for students to create sustainable development and sustainable environmental awareness. Firstly, courses and practical projects on sustainable development and environmental awareness should be integrated into education curricula so that students can gain knowledge and skills on these issues. In addition, it is important to promote environmentally friendly practices in universities, to popularise recycling systems, and to introduce sustainability-oriented projects such as energy efficiency to students. Workshops, seminars, and social media campaigns can be organised for students to raise awareness on how to apply environmentally friendly behaviours in daily life. In addition, organising environmentally friendly activities in line with the sustainable development goals of universities and encouraging students to actively participate in these activities will contribute significantly to raising environmental awareness.

5. References

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