

Yükseköğretimde Sürdürülebilirlik Özelliklerinin Belirlenmesi: İlişkisel Bir Analiz

Determining Sustainability Characteristics in Higher Education: A Relational Analysis

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Özet: Üniversitelerin sürdürülebilirlik özelliklerinin belirlenmesi amacıyla yapılan bu araştırma, nicel araştırma yöntemlerinden ilişkisel modele göre tasarlanmıştır. Araştırmanın örneklemini Türkiye'nin Orta Anadolu bölgesinde yer alan bir üniversitede görev yapan ve evren içerisinden basit tesadüfi örnekleme yöntemi kullanılarak belirlenen akademik ve idari personeller (370) oluşturmaktadır. Araştırmada veriler, "Sürdürülebilir Okul Özellikleri Ölçeği (SOÖÖ)" aracılığıyla toplanmıştır. Veriler ikili ve çoklu karşılaştırma teknikleri (bağımsız örneklem t-testi ve tek yönlü varyans analizi (ANOVA)) yardımıyla analiz edilmiştir. Katılımcıların algıladıkları sürdürülebilir okul özellikleri cinsiyet, medeni durum, mesleki kıdem, yaş, görev türü ve görev yapılan birim değişkenlerine göre belirlenerek değişkenler arası ilişkiler ortaya konulmaya çalışılmıştır. Üniversitenin sürdürülebilirlik özelliklerinin "katılıyorum" düzeyinde nispeten yüksek bulunması araştırmanın en önemli bulgusu olarak değerlendirilmektedir. Bulgular araştırmanın sınırlılıkları bağlamında tartışılarak çeşitli önerilerde bulunulmuştur.

Anahtar Kelimeler: Sürdürülebilirlik, Üniversite, Sürdürülebilir Üniversite, Yükseköğretim

Abstract: This research, which was conducted to determine the sustainability features of universities, was designed according to the relational model, one of the quantitative research methods. The sample comprises 370 academic and administrative staff from a university in Central Anatolia, Türkiye and selected from the universe using the simple random sampling method. Data in the research were collected through the "Sustainable School Characteristics Scale (SPS)". Data were analyzed with the help of pairwise and multiple comparison techniques (independent samples t-test and one-way analysis of variance (ANOVA)). The sustainable school characteristics perceived by the participants were determined according to the variables of gender, marital status, professional seniority, age, type of duty and unit of duty and the relationships between the variables were tried to be revealed. The fact that the sustainability features of the university were found to be relatively high at the "I agree" level is evaluated as the most important finding of the research. The findings were discussed in the context of the limitations of the research and various suggestions were made.

Keywords: Sustainability, University, Sustainable University, Higher Education

1. Introduction

Sustainability is defined in the simplest sense as the ability of a phenomenon to continue its existence (Bozlağan, 2002). In its most general sense, sustainability can be defined as the measured and conscious use of the environment and resources in which human beings live, with minimal damage and in a way that will be usable for future generations, and the organization of their lifestyle accordingly (Yıldırım, 2020). Sustainability is a concept that is examined from different perspectives by many disciplines such as economics, architecture, politics, and education. In this context, the concept of sustainability is

associated with the concept of development.

Sustainable development is defined as the development that meets the needs of today without compromising the ability of future generations to meet their own needs (Yeni, 2014). Sustainable development refers to achieving economic growth that minimizes damage to natural life and uses natural resources in a sustainable manner, taking into account environmental limits (Yıldırım, 2020).

Social sustainability is related to improving human health, education and quality of life (Akpolat & Demir-

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bilek, 2024). With the studies carried out over time, the cultural diversity dimension of sustainability has also started to gain importance (Öztürk, 2017). The only way for sustainable development to cease being an initiative and be put into practice is to raise individuals who believe in the concept of sustainable development and make it a philosophy of life (Yapıcı, 2003).

The sustainability perspective of societies depends on the existence of individuals who adopt and support this idea with their preferences and practices. Education has been given an important role in achieving the sustainable development goal, and providing individuals with knowledge, skills, attitudes and values on sustainability has become one of the main purposes of education (Leicht et al., 2018). Integrating the philosophy of sustainable development into educational institution programs can help cultivate a shared consciousness among children and young people, enabling them to collectively address concerns about humanity's common future and actively engage in developing and implementing solutions (Madsen & Borch, 2023; Yapıcı, 2003).

Addressing education as one of the fundamental policy issues for sustainable life and development has various reflections on all stakeholders and dimensions related to education, from determining the educational objectives at all levels to developing programs, selecting educational approaches and evaluating education; from the education of teachers and teacher candidates to the development of the qualifications and competencies of teacher educators and administrators and the problems addressed by educational researchers (Rieckmann, 2018).

The leadership role of education, especially higher education, in creating sustainable development has been widely accepted (Ramísio et al., 2019). Vare and Scott (2007) suggest that education should be given a lead in order to achieve sustainable development. McKeown (2002) considers education as the key to ensuring sustainability. Therefore, in order to achieve sustainable development goals, education should be addressed with a holistic approach that includes economic, social and environmental dimensions. In this context, the study conducted by Akpolat and Demirbilek (2024) suggests that the sustainability features of schools should be determined by their stakeholders' perception. In this context, de Miranda Azeiteiro and Davim (2019) suggest that higher education institutions should ensure their own sustainability. Sustainability in higher education can be expressed as the preparation and implementation of education-training and research activities required to provide the necessary knowledge, skills, perspectives and values to the whole society with the mission of creating

a sustainable future (Bozoğlu & Çiğirim, 2022; Mifsud & Vella, 2022). Sustainable university: It can be defined as a higher education institution that works to minimize the negative environmental, social and economic impacts of its activities and leads society in a sustainable way of life (Ağı Günerhan & Günerhan, 2016; Filho et al., 2023; Velazquez et al., 2006).

In order for higher education institutions to become sustainable universities, a sustainable university model is suggested (Alshuwaikhat & Abubakar, 2008; Filho & Brandli, 2022; Velazquez et al., 2006). This model consists of five stages. The first stage of the model is creating a sustainability vision by considering each university's own dynamics, while the second stage includes a mission statement that tries to reveal where it is at and with whom and how it will reach the point determined in its vision. The third stage is the establishment of a sustainability office where all sustainability work will be carried out, the fourth stage is the establishment of a committee consisting of experts on the subject, and the fifth stage is the establishment of a strategy consisting of teaching, research, social access and collaborations, and sustainability on campus.

There are very few studies on sustainability in higher education (Bozoğlu & Çiğirim, 2022; Menon & Suresh, 2022; Sterling & Scott, 2022). The widespread use of sustainability reports by universities will increase the interest of other private and public institutions in sustainability reporting (Güngör Tanç et al., 2022). In this sense, this research will contribute to filling this gap in the literature and will serve as a guide for decision makers.

1.1. Purpose of Research

The main purpose of this research is to determine the sustainable characteristics of universities. In order to achieve this aim, the following questions were answered.

1. What is the level of sustainability features of the selected university?
2. Do the sustainability features of the university differ according to the participants' gender, marital status, professional seniority, age, type of duty and unit of duty?

2. Method

2.1. Research Model

This research, which was conducted to determine the sustainable features of universities, was designed in accordance with the relational model, one of the quantitative research methods.

2.2. Population of the Study

The universe of the study consists of academic and administrative staff working at Yozgat Bozok University. A total of 2186 personnel work at the university, which constitutes the universe of the study. The academic and administrative staff (370) determined by using the simple random sampling method from the universe of the study constitute the sample of the study. The study sample consists of 370 academic and administrative staff members, who were selected from the study population using a simple random sampling method. Personnel who are not foreign nationals, who participated in the study voluntarily, and who do not have any psychological disorders were included in the study. Descriptive statistics regarding the participants are presented in ►Table 1.

►Table 1.

Category	Sub Category	Frequency (n)	Percentage (%)
Your gender	Woman	148	40
	Male	222	60
Marital status	Married	270	73
	Single	100	27
Professional Seniority	0-5 Years	76	20.5
	6-10 Years	56	15.1
	11-15 Years	96	15.9
	16-20 Years	58	15.7
	21-25 Years	42	11.4
	26 and Above	42	11.4
Age	20-30 Years Old	48	3.2
	31-35 Years Old	56	15.1
	36-40 Years Old	90	24.3
	41-45 Years Old	64	17.3
	46-50 Years Old	72	19.5
	51 and over	40	10.8
Task Type	Academic Staff	276	74.6
	Administrative Staff	94	25.4
Unit Served	Academic Unit	332	89.7
	Administrative Unit	38	10.3
Total		370	100

When ►Table 1 is examined, 60% (n=222) of the participants are male and 40% (n=148) are female. The rate of those whose marital status is married is 73% (n=270). When evaluated in terms of professional seniority, it is seen that the rate of participants between 0-5 years is high (20.5%). In terms of age variable, it is seen that the rate of participants between 36-40 years is 24.3% (n=90), 74.6% (n=276) of the participants are academic staff and 89.7% (n=332) work in academic units.

2.3. Data Collection Tools

Sustainable School Characteristics Scale (SPS)” developed by Akpolat and Demirbilek (2024), for which the necessary permissions were received, was used as the data collection tool. The scale consists of 32 items in 5 dimensions. The dimensions of the scale are “cultural heritage (8 items)”, “environment (8 items)”, “inclusiveness (7 items)”, “efficiency (5 items)” and “architecture and design (4 items)”. Values related to the reliability of the scale are presented in ►Table 2.

Table 2. Reliability coefficients for the sub-dimensions and the entire scale

Sub-dimensions	Cronbach's alpha coefficient (α)	McDonald's (ω)
Cultural Heritage	0.91	0.88
Environment	0.90	0.90
Inclusiveness	0.91	0.91
Productivity	0.85	0.88
Architecture and design	0.82	0.83
General	0.95	0.95

As presented in ►Table 2, the internal consistency coefficients of the subscales of the scale and the overall scale show high reliability. Specifically, Cronbach's alpha (α) and McDonald's omega (ω) values are as follows: culture and heritage ($\alpha = 0.91$; $\omega = 0.88$), environment ($\alpha = 0.90$; $\omega = 0.90$), inclusiveness ($\alpha = 0.91$; $\omega = 0.91$), efficiency ($\alpha = 0.85$; $\omega = 0.88$), and architecture and design ($\alpha = 0.82$; $\omega = 0.83$). The total scale yielded $\alpha = 0.95$ and $\omega = 0.95$. These results indicate that the scale and its subscales exhibited strong internal consistency. The scale used a five-point Likert-type format ranging from “Strongly Disagree (1)” to “Strongly Agree (5)”, where higher scores reflect higher levels of agreement.

2.4. Data Collection and Analysis

Data were collected between 01.02.2025 and 01.03.2025 via “Google Form”. Necessary permissions were obtained for the implementation of data collection tools. A personal information form developed by the researchers was added to the data collection tool. Within the scope of the research, 1640 of the 2186 personnel constituting the study universe were reached via e-mail, Whatsapp application and interview, and feedback was obtained from 370 personnel.

The collected data were analyzed using the SPSS package program. The data were analyzed using pairwise and multiple comparison techniques. Before the analysis, the distribution properties of the data sets were tried to be determined. It was investigated whether the data showed normal distribution according to the variables

to be compared. In order to determine the distribution properties of the data set, the Kolmogorov-Smirnov test results and the Skewness and Kurtosis values were examined, and it was seen that the data showed normal distribution. Because according to Tabachnick and Fidell (2020), the Skewness and Kurtosis values being between +1.5 and -1.5 and the arithmetic mean, mode and median values being close to each other indicate that the data has a normal distribution. Since the distribution of the data showed normal distribution according to our dependent and independent variables, it was decided to use parametric tests during the data analysis phase.

In the study, the sustainable school characteristics perceived by the participants were determined according to the variables of gender, marital status, professional seniority, age, type of duty and the unit they work in, and the relationships between the variables were tried to be revealed. The averages of the variables of gender, marital status, professional seniority, age, type of duty and the unit they work in were determined. In testing the differences between means, the independent samples t-test for paired groups in parametric distributions and the One-Way Analysis of Variance (ANOVA) test was used to compare multiple groups. When the difference was found to be significant as a result of the analysis, post hoc tests were performed to determine which group or groups the difference originated from and “Tukey Test” was performed in groups where variances were homogeneous and “Games -Howell Test” was performed in groups where variances were not homogeneous. The value of $p < .05$ was accepted for the significance level of statistical tests. While interpreting the arithmetic means related to the levels of perceived sustainable school characteristics in our research, 1.00–1.79 was evaluated as “I completely disagree”, 1.80–2.49 as “I disagree”, 2.50–3.19 as “I am undecided”, 3.20–3.99 as “I agree” and 4.00–5.00 was evaluated as “I completely agree”.

Confirmatory factor analysis (CFA) was applied to test the validity and reliability of the scale used in the study.

From the model values obtained within the scope of CFA, $\chi^2 / sd = 1.90$ was found and the model was found to be statistically significant. This ratio is accepted as being between 1 and 3 (Kline, 2023). The fit indices for the model CFI (.92), IFI (.92), TLI (.91), RMR (.035) and RMSEA (.059) are within acceptable fit ranges (Tabachnick & Fidell, 2020). Therefore, the scale used in this study is seen to be valid and reliable.

3. Findings

Information about the analyses conducted for the sub-objectives of the research was given and the analysis results were presented in the tables.

3.1. Findings Regarding the University’s Sustainability Levels According to Participants’ Perceptions

In order to determine the sustainability levels of the university according to the perceptions of the participants, the arithmetic mean, standard deviation, highest and lowest values of the scores obtained from the “SPS” applied to the participants were calculated and the results are presented in ►Table 3.

When ►Table 3 is examined, the sustainability features of the university were found to be relatively high at the “I agree” level in all dimensions according to the perceptions of the participants. When evaluated in terms of averages, it is seen that the highest average is in the dimensions of efficiency ($\bar{x}=3.85$) and inclusiveness ($\bar{x}=3.70$), while the lowest average is in the dimensions of architecture and design ($\bar{x}=3.22$) and cultural heritage ($\bar{x}=3.24$). The relatively low perception in architectural design may be attributed to compared to the other dimensions can be attributed to the different design of the buildings on the university campus where the research was conducted. The low level in the cultural heritage dimension can be explained by the fact that the university is among the new generation universities.

Table 3. Sustainability levels of the university

Dimensions	n	Lowest Score	Highest Score	\bar{x}	ss	Level
Cultural Heritage	370	1.75	4.38	3.24	.50	I agree
Environment	370	1.00	5.00	3.39	.80	I agree
Inclusiveness	370	1.00	5.00	3.70	.74	I agree
Productivity	370	1.00	5.00	3.85	.73	I agree
Architecture and design	370	1.00	5.00	3.22	.91	I agree
General	370	1.23	4.85	3.48	.59	I agree

3.2. Findings Regarding Differences

Findings Regarding the Gender Variable

In the study, an independent samples t-test was applied to determine whether there is a significant difference in terms of gender regarding sustainable university characteristics. The analysis results are presented in Table 4.

Looking at ►Table 4, there was no statistically significant difference between the perceptions of female and male participants in the dimensions of “cultural heritage”, “environment”, “inclusiveness”, “efficiency” and “architecture and design” regarding sustainability ($p > .05$). Although the average scores of female participants were higher than male participants in the dimensions of cultural heritage and inclusiveness, and the average scores of male participants were higher than female participants in the dimension of environment, these differences were not statistically significant. Similarly, the general sustainability perception scores did not differ between female and male participants ($t = .098, p = .92$). These results reveal that the perceptions of the individuals participating in the study regarding sustainable university practices were homogeneously distributed according to gender.

Findings Regarding Marital Status Variable

In the study, an independent samples t-test was applied to examine whether the participants’ perceptions of sustainable university features differed according to their marital status. The analysis results are presented in ►Table 5.

The findings show that there are significant differences between married and single participants in some dimensions. In the inclusiveness dimension, married individuals ($\bar{x}=3.78$) were found to have significantly higher scores than single individuals ($\bar{x}=3.49$) ($t = 2.957, p < .05$). Similarly, in the efficiency ($t = 2.116, p < .05$) and architecture and design ($t = 2.364, p < .05$) dimensions, the sustainability perceptions of married participants were found to be statistically significantly higher than single participants. In terms of general sustainability scores, married individuals ($\bar{x}=3.53$) had a significantly higher perception than single individuals ($\bar{x}=3.34$) ($t = 2.704, p < .05$). On the other hand, the differences obtained in the cultural heritage and environment dimensions were not found to be statistically significant ($p > .05$). These results show that married individuals generally evaluate sustainability practices more positively, and this may be

Table 4. Results of t-test analysis of sustainability characteristics of universities according to gender variable

Dimensions	Category	n	\bar{x}	F	t	ss	p	η^2
Cultural Heritage	Woman	148	3.30	9.057	1.870	.45	.06	-
	Male	222	3.20					
Environment	Woman	148	3.31	.336	-1.437	.75	.15	-
	Male	222	3.44					
Inclusiveness	Woman	148	3.75	.982	1.118	.70	.26	-
	Male	222	3.67					
Productivity	Woman	148	3.85	7.876	-.012	.64	.99	-
	Male	222	3.85					
Architecture and Design	Woman	148	3.20	3.978	-.303	.86	.75	-
	Male	222	3.23					
General	Woman	148	3.48	1.252	.098	.55	.92	-
	Male	222	3.48					

$p < .05$

Table 5. Results of t-test analysis of sustainability characteristics of universities according to marital status variable

Dimensions	Category	n	\bar{x}	F	t	ss	p	η^2
Cultural Heritage	Married	270	3.25	1.101	.809	.50	.42	-
	Single	100	3.20					
Environment	Married	270	3.43	2.507	1.766	.77	.08	-
	Single	100	3.27					
Inclusiveness	Married	270	3.78	12.400	2.957	.66	.00	.03
	Single	100	3.49					
Productivity	Married	270	3.90	.421	2.116	.71	.03	.01
	Single	100	3.72					
Architecture and Design	Married	270	3.29	2.350	2.364	.89	.02	.01
	Single	100	3.04					
General	Married	270	3.53	1.037	2.704	.56	.00	.02
	Single	100	3.34					

$p < .05$

related to their life experiences, levels of responsibility, or institutional commitment.

Findings Regarding the Professional Seniority Variable

In the study, one-way analysis of variance (ANOVA) was applied to determine whether the participants' perceptions of sustainable university features differ significantly according to their professional seniority. The analysis results are presented in ►Table 6.

According to the findings, it is seen that some dimensions differed significantly depending on the participants' seniority. Especially in the inclusiveness dimension, a statistically significant difference was found between professional seniority and perception level ($F = 3.044$; $p < .05$). According to the post-hoc comparisons, this difference was found to be significant between individuals with 16-20 years of seniority and individuals with 26 years of seniority and above. Similarly, a significant difference was found between professional seniority groups in the architecture and design dimension ($F = 2.858$; $p < .05$), and this

difference was determined to be between individuals in the 11-15 years of seniority group and individuals with 26 years of seniority and above. A significant difference was also found between professional seniority groups in terms of general sustainability perception ($F = 2.275$; $p < .05$), and this difference was observed to occur especially between individuals with 16-20 years of seniority and individuals with 26 years of seniority and above. There was no statistically significant difference in terms of professional seniority in terms of other dimensions, namely cultural heritage, environment and productivity ($p > .05$). These findings show that the perceptions of individuals who have been working for many years regarding sustainable university practices are more positive in some dimensions and indicate an increasing awareness with experience.

Findings Regarding Variable Age

In the study, one-way analysis of variance (ANOVA) was conducted to determine whether the participants' perceptions of sustainable university features differed

Table 6. Sustainability characteristics of universities according to professional seniority variable, Anova test analysis results

Dimensions	Category	n	\bar{x}	ss	F	p	η^2	Difference
Cultural Heritage	0-5 Years	76	3.22	.06	2.110	.06	-	-
	6-10 Years	56	3.42	.06				
	11-15 Years	96	3.20	.05				
	16-20 Years	58	3.17	.05				
	21-25 Years	42	3.17	.07				
	26 and Above	42	3.28	.06				
Environment	0-5 Years	76	3.36	.10	.999	.41	-	-
	6-10 Years	56	3.33	.13				
	11-15 Years	96	3.38	.08				
	16-20 Years	58	3.34	.10				
	21-25 Years	42	3.33	.10				
	26 and Above	42	3.64	.06				
Inclusiveness	0-5 Years	76	3.70	.88	3.044	.01	.04	4-6
	6-10 Years	56	3.88	.75				
	11-15 Years	96	3.59	.69				
	16-20 Years	58	3.50	.84				
	21-25 Years	42	3.75	.36				
	26 and Above	42	3.95	.56				
Productivity	0-5 Years	76	3.72	.10	2.005	.07	-	-
	6-10 Years	56	3.88	.10				
	11-15 Years	96	3.84	.06				
	16-20 Years	58	3.75	.09				
	21-25 Years	42	3.90	.08				
	26 and Above	42	4.13	.09				
Architecture and design	0-5 Years	76	3.36	.10	2.858	.01	.04	3-6
	6-10 Years	56	3.37	.15				
	11-15 Years	96	3.03	.08				
	16-20 Years	58	3.04	.11				
	21-25 Years	42	3.17	.11				
	26 and Above	42	3.51	.12				
General	0-5 Years	76	3.47	.08	2.275	.04	.03	4-6
	6-10 Years	56	3.58	.08				
	11-15 Years	96	3.41	.05				
	16-20 Years	58	3.36	.08				
	21-25 Years	42	3.46	.06				
	26 and Above	42	3.70	.06				

$P < .05$

according to the age variable. The analysis results are presented in ►Table 7.

According to the analysis results, a statistically significant difference was found between the age groups only in the “architecture and design” dimension ($F=2.298$; $p < .05$). As a result of the multiple comparisons, it is seen that this difference was between the participants in the 41-45 age group and those in the 36-40 age group ($p < .05$) and again between the participants in the 46-50 age group and those in the 36-40 age group ($p < .05$). No significant difference was found between the age groups in terms of the other dimensions of cultural heritage ($p = .09$), environment ($p = .61$), inclusiveness ($p = .69$), efficiency ($p = .20$) and general sustainability perception ($p = .48$). These findings show that the perceptions of the participants on sustainability are largely similar according to age; however, there are perception differences between certain age groups in the architecture and design dimension. These findings show that awareness of the physical environment may be more pronounced in certain age

groups. This finding may be attributed to cognitive and social development processes that occur with age, as after a certain age, individuals are generally more exposed to educational content and social discourses covering environmental issues, which may increase their awareness.

Findings Regarding the Task Type Variable

In the study, an independent samples t-test was applied to determine whether the participants’ perceptions of sustainable university features differed according to their job type (academic or administrative staff). The analysis results are presented in ►Table 8.

According to the findings, no statistically significant difference was found in all dimensions according to the task type variable ($p > .05$). Although the most striking difference was observed in the environment ($t = -1.817$; $p = .07$) and efficiency ($t = -1.751$; $p = .08$) dimensions, these differences remained below the significance limit. These findings reveal that the perceptions of academic and administrative staff regarding sustainability issues

Table 7. The ANOVA test analysis on sustainability characteristics of universities according to age variable

Dimensions	Category	n	\bar{x}	ss	F	p	η^2	Difference
Cultural Heritage	20-30 Years Old	48	3.31	.08	1.870	.09	-	-
	31-35 Years Old	56	3.32	.07				
	36-40 Years Old	90	3.23	.06				
	41-45 Years Old	64	3.10	.04				
	46-50 Years Old	72	3.30	.05				
	51 and Over	40	3.15	.06				
Environment	20-30 Years Old	48	3.47	.14	.713	.61	-	-
	31-35 Years Old	56	3.40	.10				
	36-40 Years Old	90	3.30	.09				
	41-45 Years Old	64	3.29	.10				
	46-50 Years Old	72	3.47	.06				
	51 and Over	40	3.46	.10				
Inclusiveness	20-30 Years Old	48	3.67	.14	.602	.69	-	-
	31-35 Years Old	56	3.79	.09				
	36-40 Years Old	90	3.66	.08				
	41-45 Years Old	64	3.61	.07				
	46-50 Years Old	72	3.78	.05				
	51 and Over	40	3.71	.12				
Productivity	20-30 Years Old	48	3.75	.13	1.465	.20	-	-
	31-35 Years Old	56	4.02	.09				
	36-40 Years Old	90	3.81	.08				
	41-45 Years Old	64	3.71	.08				
	46-50 Years Old	72	3.88	.06				
	51 and Over	40	3.96	.10				
Architecture and design	20-30 Years Old	48	3.31	.16	2.298	.04	.03	4-3 5-3
	31-35 Years Old	56	3.25	.10				
	36-40 Years Old	90	3.39	.10				
	41-45 Years Old	64	3.01	.08				
	46-50 Years Old	72	3.02	.10				
	51 and Over	40	3.37	.14				
General	20-30 Years Old	48	3.50	.11	.900	.48	-	-
	31-35 Years Old	56	3.55	.06				
	36-40 Years Old	90	3.48	.07				
	41-45 Years Old	64	3.34	.06				
	46-50 Years Old	72	3.49	.04				
	51 and Over	40	3.53	.09				

$P < .05$

are largely similar. In university environments where sustainability practices are widespread at the institutional level, the fact that the staff have similar values regardless of the task type indicates that a common institutional culture has been formed. However, considering that the perceptions of administrative staff are relatively higher in the environment and efficiency dimensions, the effect of task-based experience differences in these areas can be investigated in more depth.

Findings Regarding the Unit Variable

In the study, an independent samples t-test was applied to examine whether the participants' perceptions of sustainable university features differed according to the unit they worked in (academic unit or administrative unit). The analysis results are presented in ►Table 9.

According to the analysis results, statistically significant differences were found in the dimensions of cultural heritage ($t = 2.109$; $p = .03$), environment ($t = -2.356$; $p = .02$) and efficiency ($t = -2.836$; $p < .01$) according to the unit of duty. It is seen that the participants working in academic units have higher sustainability perceptions in the cultural heritage dimension, and the participants working in administrative units have higher sustainability perceptions in the environment and efficiency

dimensions. On the other hand, no significant differences were found in the dimensions of inclusiveness ($p = .35$), architecture and design ($p = .30$) and general sustainability ($p = .18$). These findings show that academic and administrative unit employees may have different perceptions in some sustainability areas. The fact that administrative unit employees have higher perceptions, especially in the areas of environment and efficiency, may be related to the active role of these personnel in direct implementation and process management. On the other hand, the fact that academic units have higher perceptions in cultural heritage may be related to the roles these units undertake in the transfer and protection of cultural values.

4. Conclusion, Discussion and Recommendations

In this study, the perceptions of academic and administrative staff regarding the sustainability features of universities were examined in the context of various demographic variables. According to the findings, it is seen that the perceptions of the participants regarding the sustainable university were generally at the "I agree" level and rela-

Table 8. Results of t-test analysis of sustainability characteristics of universities according to task type variable

Dimensions	Category	n	\bar{x}	F	t	ss	p	η^2
Cultural Heritage	Academic Staff	276	3.24	.179	.424	.50	.67	-
	Administrative Staff	94	3.22			.52		
Environment	Academic Staff	276	3.34	3.303	-1.817	.82	.07	-
	Administrative Staff	94	3.52			.74		
Inclusiveness	Academic Staff	276	3.71	.264	.514	.72	.60	-
	Administrative Staff	94	3.67			.80		
Productivity	Academic Staff	276	3.81	3.067	-1.751	.71	.08	-
	Administrative Staff	94	3.96			.78		
Architecture and design	Academic Staff	276	3.22	.006	.076	.91	.93	-
	Administrative Staff	94	3.21			.91		
General	Academic Staff	276	3.47	.481	-.694	.59	.48	-
	Administrative Staff	94	3.52			.61		

$P < .05$

Table 9. Results of t-test analysis of sustainability characteristics of universities according to the unit of duty variable

Dimensions	Category	n	\bar{x}	F	t	ss	p	η^2
Cultural Heritage	Academic Unit	332	3.26	.149	2.109	.50	.03	.01
	Administrative Unit	38	3.07			.51		
Environment	Academic Unit	332	3.36	4.020	-2.356	.82	.02	.01
	Administrative Unit	38	3.61			.57		
Inclusiveness	Academic Unit	332	3.69	1.665	-1.110	.75	.35	-
	Administrative Unit	38	3.81			.60		
Productivity	Academic Unit	332	3.81	.086	-2.836	.73	.00	.02
	Administrative Unit	38	4.16			.64		
Architecture and design	Academic Unit	332	3.20	3.894	-1.039	.93	.30	-
	Administrative Unit	38	3.35			.80		
General	Academic Unit	332	3.46	1.185	-1.332	.60	.18	-
	Administrative Unit	38	3.60			.47		

$p < .05$

tively high. While no significant difference was found in the sustainability dimensions according to the variables of gender and type of duty, significant differences were found in some dimensions in the variables of marital status, professional seniority, age and the unit in which they work. It was observed that married individuals had higher perceptions in the dimensions of inclusiveness, efficiency and architecture-design; participants with more professional seniority expressed higher opinions in areas such as inclusiveness and architecture-design. In addition, participants working in administrative units made more positive evaluations in the dimensions of environment and efficiency than academic unit employees. These results show that the perception of sustainability differs according to individual and institutional variables.

The research findings reveal that a general level of awareness has been formed in the sustainability dimensions of universities and that this awareness may vary according to certain socio-demographic factors. The absence of significant differences according to gender and type of duty suggests that sustainability principles are adopted with an inclusive approach throughout the institution. On the other hand, the significance in variables indicating the duration of the individual's commitment to the institution, such as marital status and seniority, shows that the concept of sustainability is closely related to an awareness and sense of belonging that develops over time. In particular, the fact that administrative personnel have higher perceptions of environmental and structural sustainability issues can be associated with the direct participation of these personnel in the implementation processes. This situation indicates that sustainability studies are carried out effectively not only at the strategic but also at the operational level. The findings are consistent with the studies conducted on the concept of sustainable university in the literature and support the multidimensional structure of this field (Lozano et al., 2015; Filho et al., 2019). The prominence of age, seniority and unit differences, especially in more abstract dimensions such as architecture-design and cultural heritage, suggests that the way these concepts are perceived is shaped by individual experiences.

Education should not only provide economic development but also environmental and social sustainability (UNESCO, 2017). Educational institutions are of critical importance in terms of ensuring sustainability. When the studies of universities on sustainability are evaluated, it is seen that they generally focus on environmental education (Berberoglu & Tosunoglu, 1995; Ozsoy et al., 2011; Özdemir, 2007; Şengül, 2001; Teksöz et al., 2010). As local reflections of the sustainable development-oriented education approach, the master's and

doctorate programs offered by the Department of Social Environmental Sciences established within the Ankara University Institute of Social Sciences and the master's program offered by the Department of Environmental Education established within the Dokuz Eylül University Institute of Educational Sciences (Öztürk, 2017) at the higher education level. The fact that the sustainability features of the university were relatively high in the environmental dimension in this study can be evaluated within this scope.

The research conducted by Giovanelli et al. (2021) shows that there is a positive relationship between the sustainability activities of universities and university performance. The study conducted by Bulut (2021) found that the university has a vision aimed at environmental and cultural sustainability, and that training is provided on the development of social responsibility and ethical, financial and environmental sustainability at the university. The study conducted by Amaral et al. (2020) suggests that utilizing strategic programs and actions related to sustainability will help optimize investments and increase the impact of progress towards a sustainable university campus. The study conducted by Yüksel (2020) states that there are very few courses related to sustainability in the curricula of universities and that the number of courses should be increased. The study conducted by Godemann et al. (2014) found that universities are sensitive institutions that make significant contributions to sustainable development. The study conducted by Disterheft et al. (2013) concluded that universities make significant efforts to disseminate sustainability and implement concrete practices in sustainable development. However, it has been determined that although universities have made progress in sustainability, there is no holistic application. Dagiliūtė et al., (2018) show that campus sustainability and environmental information significantly affect students' participation in sustainability.

The fact that this research aimed to determine the perceptions of personnel working at a university located in the Central Anatolian region of Turkey is among the limitations of the research. Another limitation of this research is that it was conducted using a quantitative research method. Considering these limitations, the following suggestions can be made. Targeted sustainability trainings should be organized for different personnel profiles, and all dimensions such as environment, cultural heritage, inclusiveness and efficiency should be addressed in a balanced manner in these trainings. Mentorship systems that can benefit from the experiences of senior personnel in particular should be established, and the active participation of young employees in sus-

tainability practices should be encouraged. The contribution of administrative personnel to environmental and structural processes should be taken into account, and examples of good practice should be shared and disseminated in administrative units. Cultural value-focused awareness activities and visual communication tools should be used on university campuses to increase awareness of dimensions such as cultural heritage and architecture-design. It is recommended that future studies be supported by qualitative research methods. Thus, the reasons underlying sustainability perceptions can be understood more deeply. In addition, studies examining students' perceptions and attitudes towards sustainability will also contribute to the evaluation of institutional sustainability policies with a holistic perspective.

Not

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Research Ethics

Regarding this research, Ethics Committee Permission was obtained from Yozgat Bozok University Social and Human Sciences Ethics Committee with the approval dated 23/01/2025 and numbered 21/38.

Author Contributions

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Competing Interests

The author(s) state(s) no conflict of interest.

Data Availability


The raw data can be obtained on request from the corresponding author.

Peer-review

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