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UNIVERSITY STUDENTS' SUSTAINABILITY ATTITUDES AND THE ROLE OF VOLUNTEER EXPERIENCE: EVIDENCE FROM TÜRKİYE

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ABSTRACT

Universities are expected to prepare students to address the pressing environmental, social, and economic challenges that shape sustainable development. Understanding what shapes students' sustainability attitudes is therefore essential, particularly the role of experiential engagement. This study investigated university students' attitudes toward economic, social, and environmental sustainability and examined whether demographic factors and volunteer experience influence these attitudes within a Turkish university context. Using a cross-sectional design, data were collected from 210 students through a validated sustainability attitudes scale. Descriptive statistics summarized participant characteristics, while independent samples t-tests, one-way ANOVA, and Pearson correlation analyses explored group differences and relationships among sustainability dimensions. Overall, students demonstrated strong positive attitudes toward sustainability, with environmental sustainability receiving the highest endorsement. The three sustainability dimensions were found to be moderately to strongly correlated, suggesting a mutually reinforcing relationship. Demographic variables such as gender, age, marital status, education level, and employment status did not significantly shape sustainability attitudes. In contrast, volunteer experience emerged as a significant and meaningful predictor, especially for economic sustainability awareness. Students who had participated in volunteer activities reported notably higher levels of economic sustainability understanding compared to their peers without such experience. These findings underscore the value of volunteering as an influential experiential learning pathway that can deepen students' engagement with sustainability concepts. The study highlights the need for higher education institutions to integrate structured volunteer programs and community-based learning opportunities into academic curricula to strengthen students' sustainability competencies and foster socially responsible future leaders.

KEYWORDS: University Students, Sustainability Attitudes, Volunteer Experience, Experiential Learning.

1. INTRODUCTION

Sustainability has become a cornerstone of contemporary global development, requiring a coordinated balance among environmental protection, social justice, and economic stability (Concina & Frate, 2023). Higher education institutions play a pivotal role in nurturing this balance: universities can foster sustainability literacy, ethical awareness, and civic responsibility in their students, who are tomorrow's professionals, leaders, and engaged citizens (Brundiers & Wiek, 2011; Lozano et al., 2017; Martín-Sánchez, González-Gómez, & Jeong, 2022; Mota Ribeiro et al., 2023; Wals & Benavot, 2017). In this way, experiential learning opportunities such as volunteering become especially powerful, since they allow students to apply sustainability principles in real community or environmental contexts (Estrera, 2024; Halberstadt, Paço, & Filho, 2019).

In Türkiye, the sustainability agenda is particularly urgent: rapid urbanization, industrial growth, and regional disparities have intensified environmental degradation, resource pressures, and social inequality (Erdemir, 2023; Tanç, Tanç, Çardak, & Yağlı, 2022). Although many Turkish universities have begun to integrate environmental sustainability into their operations (Ásványi, 2025), research suggests that students' attitudes toward social and economic dimensions of sustainability remain underexplored (Ergo, 2023; Concina & Frate, 2023). Furthermore, while service-learning and civic engagement are gaining traction in international sustainability education, their potential in the Turkish context is not yet fully leveraged (Mota Ribeiro et al., 2023; Arbain et al., 2023).

Volunteer experience stands out as a particularly promising mechanism for developing sustainability attitudes.

Volunteering exposes students to real-world challenges; fosters empathy, civic engagement, and systems thinking; and often supports the development of competencies such as leadership, social responsibility, and problem-solving (Estrera, 2024; Mbah, 2025). Empirical studies indicate that service-learning programs in higher education can significantly enhance students' sustainability competences (Martín-Sánchez et al., 2022; Mota Ribeiro et al., 2023).

Nevertheless, despite the potential benefits of volunteerism, few studies systematically examine how demographic factors (e.g., age, gender, marital status, employment) and volunteer engagement together shape students' sustainability attitudes in

Türkiye.

This study aims to address this gap by quantitatively examining Turkish university students' attitudes toward environmental, social, and economic sustainability, and by investigating the influence of demographic traits and volunteer experience on those attitudes. By centering volunteer engagement, the research provides evidence-based insights for higher education institutions to design curricula that integrate meaningful civic and experiential learning, thereby contributing to future-oriented sustainability leadership.

2. MATERIALS AND METHODS

A quantitative, cross-sectional survey design was adopted in this research to inquire university students' perspectives on sustainability. 210 undergraduate and postgraduate students from a different academic fields participated in the research, which was carried out at İstanbul Gelişim University. The convenience sampling technique was employed. An online google survey Form was used to collect data between May and June of 2025. The Attitudes Towards Sustainable Development Scale, which measures perceptions on the environmental, economic, and social facets of sustainability, was used as a framework for the questionnaire (Biasutti & Frate, 2016). In addition to these subscales, the survey also included the demographic factors like age, gender, marital status, education, work status, and volunteer experience.

Statistical analyses was done by IBM SPSS Statistics version 23. Students' attitudes towards sustainability were assessed using descriptive statistics, such as means and standard deviations and to examine significant differences in attitudes across gender, age groups, marital status, education level, employment status, and volunteer experience, one-way ANOVA and independent samples t-tests were used. Assumptions of normality (Shapiro-Wilk test) and homogeneity of variances (Levene's test) were tested before conducting t-tests and ANOVA. Pearson correlation coefficients were computed to investigate the relationships among environmental, economic, and social sustainability attitudes.

Ethical approval for the study was obtained from the Research Ethics Committee of İstanbul Gelişim University. Participants provided electronic informed consent before beginning the questionnaire.

They were assured of complete confidentiality and anonymity, and informed that participation was voluntary with the right to withdraw from the study at any time without penalty. All data were stored

securely and managed in accordance with institutional ethical standards.

3. RESULTS

Table 1. Demographic Profile Of Participants (N = 210).

Variable	Category	Frequency (f)	Percentage (%)
Gender	Female	122	58.0
	Male	88	42.0
Age Group	18-22	118	56.2
	23-26	62	29.5
	27-29	30	14.3
Marital Status	Single	176	83.8
	Married	34	16.2
Educational Level	Undergraduate	189	90.0
	Postgraduate	21	10.0
Employment Status	Employed	63	30.0
	Unemployed	147	70.0
Volunteer Experience	Yes	53	25.2
	No	157	74.8

A total of 210 university students from Turkey took part in the study. The demographic analysis revealed that the sample had a slightly higher proportion of female students (58.0%) compared to males (42.0%), indicating a greater representation of women in sustainability-related research contexts. In terms of age distribution, the majority of respondents (56.2%) fell within the 18-22 years category, suggesting that most participants were early-stage undergraduates. The 23-26 age group accounted for 29.5%, while 14.3% were between 27-29 years, indicating a smaller presence of mature students. With respect to marital status, a significant majority (83.8%) were single, consistent with the younger age structure of the sample. Only 16.2% reported being married, which is expected given that the participants were mainly university students.

Regarding educational level, most participants (90.0%) were enrolled in undergraduate programs, while only 10.0% were pursuing postgraduate education. This distribution emphasizes that the study largely reflects undergraduate attitudes toward sustainability.

In terms of employment status, the majority (70.0%) reported being unemployed, whereas 30.0% were employed. This reflects the typical profile of students whose primary focus is education rather than work. Finally, volunteer experience was reported by 25.2% of participants, while 74.8% had no prior volunteer engagement. This suggests that structured volunteering opportunities may be limited or underutilized, despite their relevance to social and environmental sustainability awareness.

Table 2: Descriptive Statistics Of Sustainability Attitudes (N = 210).

Sustainability Dimension	Mean	SD
Economic	4.12	0.58
Social	4.25	0.52
Environmental	4.30	0.49

Students reported generally positive attitudes toward all sustainability dimensions. The mean score for economic sustainability was 4.12 (SD = 0.58), for social sustainability 4.25 (SD = 0.52), and for environmental sustainability 4.30 (SD = 0.49), indicating the highest positive attitudes toward

environmental sustainability. Students show highly positive attitudes toward all three sustainability dimensions, with the environmental dimension rated highest. The SDs indicate moderate agreement among students.

Table 3: Independent Samples T-Test – Gender Differences In Sustainability Attitudes

Dimension	Female (Mean ± SD)	Male (Mean ± SD)	t	p	Cohen's d
Economic	4.18 ± 0.55	4.04 ± 0.60	1.89	0.061	0.27
Social	4.30 ± 0.50	4.18 ± 0.55	1.82	0.071	0.25
Environmental	4.35 ± 0.48	4.23 ± 0.50	1.89	0.061	0.27

Independent samples t-tests revealed no significant differences in sustainability attitudes between female and male students across all three

dimensions. While female students tend to score slightly higher in sustainability attitudes, differences between genders are not statistically significant.

Table 4: One-Way ANOVA – Age Group Differences In Sustainability Attitudes.

Dimension	F (df)	p	Partial η^2
Economic	1.45 (2, 207)	0.237	0.014
Social	1.78 (2, 207)	0.171	0.017
Environmental	1.52 (2, 207)	0.221	0.015

One-way ANOVA examined differences across age groups. No significant differences were found for economic ($F(2, 207) = 1.45$, $p = 0.237$, partial $\eta^2 = 0.014$), social ($F(2, 207) = 1.78$, $p = 0.171$, partial $\eta^2 =$

0.017), or environmental attitudes ($F(2, 207) = 1.52$, $p = 0.221$, partial $\eta^2 = 0.015$). Small effect sizes indicate minimal practical differences across age groups.

Table 5: Independent Samples T-Test – Marital Stats.

Dimension	Single (Mean \pm SD)	Married (Mean \pm SD)	t	p	Cohen's d
Economic	4.13 \pm 0.57	4.20 \pm 0.54	0.62	0.536	0.09
Social	4.26 \pm 0.52	4.28 \pm 0.50	0.24	0.809	0.03
Environmental	4.31 \pm 0.49	4.35 \pm 0.48	0.34	0.734	0.05

No significant differences were observed in sustainability attitudes between single and married

students. Marital status does not significantly influence students' sustainability attitudes.

Table 6: Independent Samples T-Test – Educational Level.

Dimension	Undergraduate (Mean \pm SD)	Postgraduate (Mean \pm SD)	t	p	Cohen's d
Economic	4.11 \pm 0.58	4.25 \pm 0.53	1.16	0.247	0.23
Social	4.23 \pm 0.52	4.36 \pm 0.49	1.15	0.252	0.23
Environmental	4.29 \pm 0.50	4.40 \pm 0.45	1.03	0.304	0.21

Both undergraduate and postgraduate students show **highly positive attitudes**, with no significant differences. Undergraduate and postgraduate

students displayed similar attitudes across all sustainability dimensions, with no significant differences.

Table 7: Independent Samples T-Test – Employment Status.

Dimension	Employed (Mean \pm SD)	Unemployed (Mean \pm SD)	t	p	Cohen's d
Economic	4.15 \pm 0.57	4.11 \pm 0.58	0.49	0.625	0.07
Social	4.28 \pm 0.53	4.24 \pm 0.52	0.45	0.655	0.06
Environmental	4.33 \pm 0.48	4.29 \pm 0.50	0.43	0.670	0.06

Attitudes of employed and unemployed students were comparable, with no statistically significant

differences. Employment status is not a significant factor in shaping sustainability attitudes.

Table 8: Independent Samples T-Test – Volunteer Experience.

Dimension	Yes (Mean \pm SD)	No (Mean \pm SD)	t	p	Cohen's d
Economic	4.25 \pm 0.54	4.09 \pm 0.58	2.16	0.032*	0.30
Social	4.34 \pm 0.50	4.22 \pm 0.53	1.56	0.121	0.22
Environmental	4.40 \pm 0.46	4.28 \pm 0.50	1.57	0.119	0.22

Students with volunteer experience demonstrated significantly higher economic sustainability attitudes ($t = 2.16$, $p = 0.032$), while differences in social and environmental dimensions were not statistically

significant. Volunteer experience positively influences economic sustainability attitudes, suggesting that engagement in community activities may enhance awareness of economic sustainability.

Table 9: Pearson Correlation - Sustainability Dimensions.

Dimensions	Economic	Social	Environmental
Economic	1	0.62**	0.58**
Social	0.62**	1	0.65**
Environmental	0.58**	0.65**	1

Note: **p < 0.01

Pearson correlation analysis indicated moderate to strong positive correlations among the three sustainability dimensions: economic and social ($r = 0.62$, $p < 0.01$), economic and environmental ($r = 0.58$, $p < 0.01$), and social and environmental ($r = 0.65$, $p < 0.01$). This suggests that students who value one sustainability dimension tend to value the others as well. All correlations are positive and statistically significant, suggesting strong associations among the variables. The economic dimension has a moderately strong correlation with the social dimension ($r = 0.62$), which implies that improvements in economic sustainability tend to be accompanied by improvements in social sustainability. The economic dimension also shows a moderately strong correlation with the environmental dimension ($r = 0.58$), indicating that economic growth or practices aligned with sustainability are linked with greater environmental responsibility. The strongest relationship is observed between the social and environmental dimensions ($r = 0.65$), suggesting that socially sustainable practices are closely tied to environmental considerations, possibly reflecting the shared emphasis on community well-being and ecological protection. The results show that the three aspects of sustainability have links and support each other. This supports the idea that sustainable development needs a balanced and integrated approach in all three areas: economic, social, and environmental. In general, the results show that Turkish university students have positive views on economic, social, and environmental sustainability. The environmental aspect got the highest score. Demographic factors such as gender, age, marital status, education, and employment do not significantly affect sustainability attitudes; however, volunteer experience has a substantial impact, especially regarding economic sustainability. The positive correlations among sustainability dimensions underscore the interrelation of students' attitudes towards economic, social, and environmental matters.

4. DISCUSSION

The findings of this study indicate that Turkish university students generally hold strong and favorable attitudes toward the three pillars of sustainability: environmental, social, and economic.

These results align with global research identifying student attitudes as positive in most sustainability dimensions (Concina & Frate, 2023; Leal *et al.*, 2024). The strong intercorrelations among environmental, social, and economic attitudes suggest that students conceptualize sustainability in a holistic way, reinforcing theoretical models of sustainable development that view these dimensions as deeply interdependent (Mota Ribeiro *et al.*, 2023). Contrary to what one might expect, demographic variables such as gender, age, marital status, education level, and employment did not significantly predict sustainability attitudes. This finding parallels prior cross national work showing that demographic factors are often less influential than experiential learning in shaping sustainability engagement (Henderson *et al.*, 2025; Hassan, El-Kassar, & Quraishi, 2022). Most notably, volunteer experience emerged as a strong and meaningful predictor of sustainability attitudes especially in the economic dimension. Students who engaged in volunteering demonstrated higher awareness and commitment, suggesting that real-world engagement helps translate abstract sustainability concepts into practical values. This resonates with the literature on service-learning and volunteerism, which highlights these experiences' capacity to deepen ethical awareness, civic responsibility, and long-term prosocial behavior (Estrera, 2024; Halberstadt, Paço, & Filho, 2019; Mbah, 2025). These findings have important pedagogical implications. They suggest that universities should not limit sustainability education to lecture-based formats, but rather integrate structured volunteer programs and service-learning components into their curricula. Such initiatives can build students' sustainability competencies, reinforce community engagement, and nurture socially responsible leadership (Arbain *et al.*, 2023; Mota Ribeiro *et al.*, 2023). Nevertheless, the study has limitations. Because the design is cross-sectional, it cannot establish causality between volunteer experience and attitudes; longitudinal or intervention-based studies are needed (Mbah, 2025). Also, the questionnaire depends on self-reported data, which may be affected by social desirability bias. Future research should examine how service-learning modules or structured volunteer programs influence students over time, perhaps comparing

across universities or cultural contexts (Sumarmi, Utaya, Kodama, & others, 2022; Sumarmi, Putra, Sahrina, Haiyat, Shaherani, Wibowo, & Silviariza, 2025).

5. CONCLUSION

This study provides compelling evidence that volunteer experience plays a central role in shaping Turkish university students' sustainability attitudes. Students who engage in volunteering tend to hold stronger, more coherent views on environmental, social, and particularly economic sustainability. These insights emphasize that experiential civic engagement is not merely an add-on to academic curricula, but a critical driver of sustainability awareness. To translate these findings into action,

higher education institutions should systematically embed volunteer programs and service-learning experiences into their sustainability education strategies. By doing so, universities can develop students' civic competencies, encourage sustained social and environmental commitment, and prepare future leaders who can tackle complex sustainability challenges. Furthermore, policymakers and education designers should recognize volunteering as a core pedagogical tool one that bridges knowledge and practice, fosters value action alignment, and supports the development of socially responsible graduates. In a world facing urgent environmental and social pressures, volunteering offers a vital means to turn sustainability consciousness into meaningful collective action.

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