

The Construction of Academic Engagement in Higher Education: The Role of School Climate, School Commitment, Communication and Learning Environment

Yükseköğretimde Akademik Aidiyetin İnşası: Okul İklimi, Okula Bağlılık, İletişim ve Öğrenme Ortamının Rolü

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Abstract

This study examines the relationship between university students' perceptions of school climate and academic engagement regarding various variables. Within the scope of the research, 302 students, 125 females and 177 males, who are actively continuing their education in all Mugla Sports Sciences Faculty departments, constituted the study sample. "Demographic Information Form" prepared by the researchers, 'School Climate Scale for University Students' developed by Terzi (2015), and 'Academic Engagement Scale for University Students' developed by Kızılkaya and Doğan (2022) were used to collect data for the study. To determine the demographic characteristics of the data obtained in the study, frequency and percentage analysis, kurtosis, and skewness analyses were performed to understand whether the scale scores were normally distributed, followed by t-test, ANOVA, and correlation analyses. In the statistical analysis and interpretations of the data, a $p < .05$ significance level was considered. The results show a strong and positive relationship between school climate and academic engagement ($r=0.559$). The findings show that school climate significantly affects the general level and sub-dimensions of academic engagement; thus, improving school climate can increase students' academic engagement levels. A strong school climate can positively affect students' perceptions of academic engagement by making them feel valued and see themselves as a part of their school.

Keywords: University students, Sports sciences, School climate, Academic engagement

Öz

Bu çalışmanın amacı, üniversite öğrencilerinin okul iklimi algıları ve akademik aidiyetleri arasındaki ilişkinin çeşitli değişkenler açısından incelenmesidir. Araştırma kapsamında Muğla Spor Bilimleri Fakültesinin tüm bölümlerinde aktif olarak öğrenimlerine devam eden 125'i kadın ve 177'si erkek olmak üzere toplam 302 öğrenci çalışmanın örneklemini oluşturmuştur. Çalışmaya veri toplamak amacıyla araştırmacılar tarafından hazırlanan "Demografik Bilgi Formu", Terzi (2015) tarafından geliştirilen "Üniversite Öğrencilerine Yönelik Okul İklimi Ölçeği" ve Kızılkaya ve Doğan (2022) tarafından geliştirilen "Üniversite Öğrencilerine Yönelik Akademik Aidiyet Ölçeği" kullanılmıştır. Araştırmada elde edilen verilerin demografik özelliklerini belirlemek amacıyla frekans ve yüzde analizi, ölçek puanlarının normal dağılım gösterip göstermediğini anlamak amacıyla basıklık (kurtosis) ve çarpıklık (skewness) analizi yapılmış ve devamında t-testi, ANOVA, korelasyon analizleri yapılmıştır. Verilerin istatistiksel analizlerinde ve yorumlarında, $p < .05$ anlamlılık düzeyi dikkate alınmıştır. Ulaşılan sonuçlara göre, okul iklimi ve akademik aidiyet arasında güçlü ve pozitif yönde bir ilişki olduğu tespit edilmiştir ($r=0,559$). Bulgular okul ikliminin akademik aidiyetin genel düzeyini ve alt boyutlarını anlamlı şekilde etkilediğini, dolayısıyla okul ikliminin iyileştirilmesinin öğrencilerin akademik aidiyet düzeylerini artırabileceğini göstermektedir. Güçlü bir okul iklimi, öğrencilerin kendilerini değerli hissetmelerine ve kendilerini okullarının bir parçası olarak görmelerini sağlayarak akademik aidiyet algılarını olumlu yönde etkileyebilir.

Anahtar Kelimeler: Üniversite öğrencileri, Spor bilimleri, Okul iklimi, Akademik aidiyet

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INTRODUCTION

In recent years, the psychosocial dimensions of educational settings have received growing attention for their role in shaping students' engagement, well-being, and academic achievement (Thapa et al., 2013; Allen et al., 2018). Understanding how school climate influences students' sense of engagement has thus become a key concern in higher education research. School climate and academic engagement are fundamental concepts that can significantly affect students' experiences in the institutions where they study (Daily et al., 2019; Korpershoek et al., 2020; Vang & Nishina, 2022; Zysberg & Schwabsky, 2021). School climate plays a critical role in the functioning and performance of an organization by defining the atmosphere and culture that exists in any school (Maxwell et al., 2017; Wang & Degol, 2016). Harmonious cooperation among students, academics, and other staff, the institution's values, the level of communication, and student-academic relationships are the elements of school climate (Rudasill et al., 2018).

School climate, as a phenomenon that can be shaped over a certain period and with the dedicated efforts of students, can have a positive impact on students' motivation and happiness levels (Akyürek, 2024; Aldridge et al., 2016; Lombardi et al., 2019). Loukas (2007) defines school climate as the feelings and attitudes that emerge through the school environment. Many researchers state that the school has a multidimensional structure that includes physical, social, and academic aspects. School climate can also be considered a concept that can affect the behavior of school stakeholders. Arguing that school climate, which can contribute to the positive differentiation of a school from other schools, is a factor that can also determine the quality of education, researchers have included studies examining the opinions of students, teachers, administrators, and parents in different types of schools (Bahçetepe & Giorgetti, 2015; Bektaş & Nalçacı, 2013; Çelik et al., 2019; Daily et al., 2019; Davis & Warner, 2018; St-Amand et al., 2021; Romero & O'Malley, 2020; Konold et al., 2018; Smith, 2020; Wang & Degol, 2016; Yang et al., 2013; Zysberg & Schwabsky 2021; Zullig et al., 2011).

Through a healthy school climate, students can feel part of their school, and their sense of academic engagement can increase (Daily et al., 2019; Vang & Nishina, 2022). A healthy school climate supports students' adaptation to the social and academic environments in schools, feel valued, and increases their desire to learn. Engagement is an important concept in students' experiences and is related not only to the academic dimension but also to social aspects (Allen et al., 2024; Kızılkaya & Doğan, 2022). Engagement with the university is defined by students' inclusion and connectedness to university communities, and it is also a cognitive phenomenon that includes the attention, support, and respect that university students receive from friends,

academics, and staff (Hurtado & Carter, 1997; Maestas et al., 2007; Strayhorn, 2018). Academic engagement can help students develop positive attitudes toward learning, engage in classroom interactions, and increase their achievement. Student engagement has long been recognized as an important concept in learning processes and achievement (Fredricks et al., 2016; Lawson & Masyn, 2015; Wang & Eccles, 2013). In addition, an undermined school climate can negatively affect students' sense of engagement. A challenging, negative, or unsupportive environment can demotivate students, which can lead to a decrease in academic engagement (Renick & Reich, 2021; Yin et al., 2024).

A review of the relevant literature indicates that perceptions of school climate are associated with students' sense of engagement (Fatou & Kubiszewski, 2018; Mehta et al., 2013; Wang & Eccles, 2013; St-Amand et al., 2021). A positive school climate has been shown to enhance students' academic sense of engagement, thereby promoting active engagement in learning, greater academic achievement, and more favorable overall school experiences (Kutsyruba et al., 2015; Lombardi et al., 2019; Pope & Miles, 2022). Furthermore, this interactive relationship between school climate and engagement has been reported to influence students' psychological resilience and long-term motivation for learning (Thapa et al., 2013; Allen et al., 2018). Students' emotional and social connections to their school environment have been found to produce lasting effects not only on academic success but also on their psychological well-being (Ripski & Gregory, 2009; Arslan, 2021). Moreover, a lack of a sense of engagement in higher education has been closely linked to increased dropout rates (Hausmann et al., 2007; Slaten et al., 2016). In this context, understanding the relationship between school climate and academic engagement is of critical importance for developing effective student support systems and informing educational policy. This study aims to examine the relationship between university students' perceptions of school climate and academic engagement with various demographic and contextual variables.

Research Problem Question

Is there an effect of university students' perceptions of school climate on their academic engagement?

Hypotheses of the Study

H₁: There is a positive relationship between university students' perceptions of school climate and their academic engagement.

H₂: There is a significant difference between school climate and academic engagement in terms of the gender variable.

H₃: There is a significant difference between school climate and academic engagement in terms of the class variable.

H₄: There is a significant difference between school climate and academic engagement in terms of the department variable.

H₅: There is a significant difference between school climate and academic engagement in terms of the grade point average (GPA) variable.

H₆: There is a significant difference between school climate and academic engagement in terms of the physical condition of the school (Do you find the physical appearance of your school aesthetically pleasing?).

METHOD

Research Model

In the study, which adopts a quantitative research method, the relationship between school climate and academic engagement has been examined. It is stated that relational research aims to examine the relationships between multiple variables and to determine how these variables change together or the degree of this change (Creswell & Creswell, 2017). The theoretical framework of the research process is presented in Figure 1.



Figure 1. Research Model

Research Group

The participants were selected using a convenience sampling method, considering accessibility and cost advantages (Gravetter & Forzano, 2003). The study population consisted of students actively continuing their education in all Faculty of Sports Sciences departments at Mugla University (Physical Education and Sports, Coaching Education, Sports Management, and Recreation). The sample was formed of 302 students, including 125 females and 177 males, who voluntarily participated in the study. The class distribution was as follows: 1st year (26.5%, n=80), 2nd year (20.5%, n=62), 3rd year (29.8%, n=90), and 4th year or extended (23.2%, n=70). The distribution of students by the department was as follows: Physical Education and Sports (29.8%, n=90), Recreation (21.9%, n=66), Coaching Education (23.5%, n=71), and Sports Management (24.8%, n=75). The distribution of GPA was as follows: 0-1.99 (7.0%, n=21), 2.00-2.49 (23.8%, n=72), 2.50-2.99 (41.1%, n=124), and 3.00-4.00 (28.1%, n=85). Regarding the

physical condition of the school, when asked about the physical appearance of the school, it was determined that 71.5% of the students (n=216) rated it as good, and 28.5% (n=86) rated it as poor.

Table 1. Demographic information

Variables		n	%
Gender	Female	125	41.4
	Male	177	58.6
Class	1st Year	80	26.5
	2nd Year	62	20.5
	3rd Year	90	29.8
	4th Year	70	23.2
	Physical Education and Sports	90	29.8
Department	Recreation	66	21.9
	Coaching Education	71	23.5
	Sports Management	75	24.8
	0-1.99	21	7.0
Grade Point Average	2.00-2.49	72	23.8
	2.50-2.99	124	41.1
	3.00-4.00	85	28.1
Physical Condition of the School	Good	216	71.5
	Poor	86	28.5
Total		302	100

Data Collection

The prepared scale was distributed to participants using a face-to-face survey technique, following necessary explanations. The completed scales were collected from volunteer participants, and a total of 343 scales were reviewed. Those identified as incomplete or erroneous were excluded, and 302 scales were included in the analyses.

Data Collection Tools

The scale developed to collect data in the study is composed of three parts. The first section includes the "Descriptive Information Form," the second section contains the "School Climate Scale for University Students," and the third section features the "Academic Engagement Scale." The Descriptive Information Form consists of five questions: gender, class, department, grade point average, and physical condition of the school. The School Climate Scale, developed by Terzi (2015), has sub-dimensions of school attachment, communication, and learning environment, and contains 17 items. The scale is a 5-point Likert scale, and Cronbach's alpha values were found to be .75 for the school attachment dimension, .86 for the communication dimension, and .81 for the learning environment dimension. The overall Cronbach's alpha value for the scale was determined to be .90. The Academic Engagement Scale, developed by Kızılkaya and Doğan (2022), consists of 25 items and is a 5-point Likert-type scale. Cronbach's alpha values for the scale were found to be .78 for the course participation, library, and resource access

dimension, .91 for the communication with faculty dimension, and .87 for the participation in scientific and cultural activities dimension. The overall scale reliability for the scale was determined to be .91. The analyses conducted indicated that the scales used are reliable measurement tools.

Data Analysis

In the study, frequency and percentage analyses were performed to determine the demographic characteristics of the data, while skewness and kurtosis analyses were conducted to assess whether the scale scores followed a normal distribution. Based on the results, data that were found to follow a normal distribution were analyzed using t-tests, ANOVA, and correlation analyses. In the statistical analysis and interpretation of the data, a significant level of $p < .05$ was considered.

RESULTS

Table 2. Distribution of scores for scales and sub-dimensions

	n	min.	max.	$\bar{X} \pm s. s.$	Skewness	Kurtosis	α
School Climate	302	1.12	5.00	3.62 ± 0.81	-.581	.421	.948
Commitment to School	302	1.00	5.00	3.47 ± 1.00	-.520	-.096	.907
Communication	302	1.00	5.00	3.75 ± 0.84	-.656	.548	.878
Learning Environment	302	1.00	5.00	3.62 ± 0.86	-.650	.457	.897
Academic Engagement	302	1.00	5.00	3.20 ± 0.75	-.282	.266	.934
Part. in the Course, Lib., and Res. Acc.	302	1.00	5.00	3.29 ± 0.75	-.354	.573	.824
Communication with Faculty Members	302	1.00	5.00	3.32 ± 0.89	-.527	.164	.896
Participation in Scientific and Cultural Activities	302	1.00	5.00	2.99 ± 0.98	-.174	-.588	.887

Table 2 examines the overall scores of the School Climate Scale, revealing an arithmetic mean of $\bar{X}=3.62$ and a standard deviation of $s.s.=0.81$. The skewness value was found to be $-.581$, and the kurtosis value was $.421$. The arithmetic mean for the Academic Engagement Scale was $\bar{X}=3.20$, with a standard deviation of $s.s.=0.75$, a skewness of $-.282$, and a kurtosis of $.266$. These scores indicate that the data meet the assumption of normality (George & Mallery, 2010; Tabachnick et al., 2013). Cronbach's alpha (α) values ranged from 0.824 to 0.948 across all dimensions, indicating a high level of internal consistency and reliability.

Table 3. T-test for gender variable

	gender	n	$\bar{X} \pm s. s.$	t	p
School Climate	Female	125	3.70 ± 0.76	1.308	.192
	Male	177	3.57 ± 0.84		
Commitment to School	Female	125	3.54 ± 0.97	.984	.326
	Male	177	3.42 ± 1.03		
Communication	Female	125	3.83 ± 0.78	1.445	.149
	Male	177	3.69 ± 0.87		
Learning Environment	Female	125	3.69 ± 0.82	1.125	.261
	Male	177	3.58 ± 0.89		
Academic Engagement	Female	125	3.35 ± 0.71	2.865	.004**
	Male	177	3.10 ± 0.76		
Participation in the Course, Library, and Resource Access	Female	125	3.45 ± 0.71	3.267	.001**
	Male	177	3.17 ± 0.76		
Communication with Faculty Members	Female	125	3.46 ± 0.81	2.397	.017*
	Male	177	3.22 ± 0.93		
Participation in Scientific and Cultural Activities	Female	125	3.12 ± 0.95	1.863	.063
	Male	177	2.90 ± 0.99		

According to Table 3, no statistically significant differences were found between the groups on the overall school climate scale and its sub-dimensions ($p > 0.05$). However, the average academic engagement score of female students ($\bar{X}=3.35$, $s.s.=0.71$) was found to be significantly higher than that of male students ($\bar{X}=3.10$, $s.s.=0.76$) ($p=0.004$). Similarly, in the dimension of class participation, library, and resource access, the average score of female students ($\bar{X}=3.45$, $s.s.=0.71$) was significantly higher than that of male students ($\bar{X}=3.17$, $s.s.=0.76$) ($p=0.001$). In the dimension of communication with faculty members, the average score of female students ($\bar{X}=3.46$, $s.s.=0.81$) was also significantly higher than that of male students ($\bar{X}=3.22$, $s.s.=0.93$) ($p=0.017$).

Table 4. ANOVA Test for grade level variable

		n	$\bar{X} \pm s. s.$	F	p	Post Hoc
School Climate	1st Year	80	3.76 $\pm$ 0.74	3.684	.012*	1>3 4>3
	2nd Year	62	3.62 $\pm$ 0.69			
	3rd Year	90	3.40 $\pm$ 0.89			
	4th Year	70	3.76 $\pm$ 0.82			
Commitment to School	1st Year	80	3.66 $\pm$ 0.92	4.022	.008*	1>3 4>3
	2nd Year	62	3.49 $\pm$ 0.77			
	3rd Year	90	3.18 $\pm$ 1.13			
	4th Year	70	3.61 $\pm$ 1.03			
Communication	1st Year	80	3.85 $\pm$ 0.74	1.515	.211	-
	2nd Year	62	3.73 $\pm$ 0.79			
	3rd Year	90	3.61 $\pm$ 0.91			
	4th Year	70	3.84 $\pm$ 0.87			
Learning Environment	1st Year	80	3.75 $\pm$ 0.80	3.967	.009*	1>3 4>3
	2nd Year	62	3.62 $\pm$ 0.73			
	3rd Year	90	3.38 $\pm$ 0.93			
	4th Year	70	3.80 $\pm$ 0.88			
Academic Engagement	1st Year	80	3.23 $\pm$ 0.76	2.462	.063	-
	2nd Year	62	3.35 $\pm$ 0.69			
	3rd Year	90	3.04 $\pm$ 0.81			
	4th Year	70	3.25 $\pm$ 0.69			
Participation in the Course, Library, and Resource Access	1st Year	80	3.21 $\pm$ 0.75	2.109	.099	-
	2nd Year	62	3.45 $\pm$ 0.73			
	3rd Year	90	3.18 $\pm$ 0.83			
	4th Year	70	3.36 $\pm$ 0.63			
Communication with Faculty Members	1st Year	80	3.30 $\pm$ 0.86	2.453	.063	-
	2nd Year	62	3.52 $\pm$ 0.81			
	3rd Year	90	3.14 $\pm$ 0.96			
	4th Year	70	3.39 $\pm$ 0.84			
Participation in Scientific and Cultural Activities	1st Year	80	3.19 $\pm$ 0.93	2.751	.043*	1>3
	2nd Year	62	3.08 $\pm$ 0.94			
	3rd Year	90	2.77 $\pm$ 0.96			
	4th Year	70	2.98 $\pm$ 1.05			

Table 4 examines the differences across various dimensions based on grade level. The results reveal statistically significant differences between grade levels ($p < 0.05$). Post hoc analyses indicated that first- and fourth-year students were found to have higher mean scores compared to third-year students in the sub-dimensions of school climate, commitment to school, and learning

environment ($p<0.012$, $p<0.008$, $p<0.009$). Additionally, in the dimension of participation in scientific and cultural activities, first-year students demonstrated a higher mean score compared to third-year students ($p<0.043$).

Table 5. ANOVA Test for department variable

		n	$\bar{X} \pm s. s.$	f	p	Post Hoc
School Climate	1. Physical Education and Sports	90	3.79 ± 0.77	6.757	.000**	1>2 3>2
	2. Recreation	66	3.26 ± 0.84			
	3. Coaching Education	71	3.77 ± 0.79			
	4. Sports Management	75	3.60 ± 0.76			
Commitment to School	1. Physical Education and Sports	90	3.60 ± 0.96	4.078	.007*	1>2 3>2
	2. Recreation	66	3.10 ± 1.03			
	3. Coaching Education	71	3.63 ± 0.94			
	4. Sports Management	75	3.50 ± 1.02			
Communication	1. Physical Education and Sports	90	3.96 ± 0.79	6.463	.000**	1>2 3>2
	2. Recreation	66	3.40 ± 0.88			
	3. Coaching Education	71	3.86 ± 0.86			
	4. Sports Management	75	3.71 ± 0.74			
Learning Environment	1. Physical Education and Sports	90	3.79 ± 0.78	6.410	.000**	1>2 3>2
	2. Recreation	66	3.26 ± 0.87			
	3. Coaching Education	71	3.80 ± 0.80			
	4. Sports Management	75	3.57 ± 0.90			
Academic Engagement	1. Physical Education and Sports	90	3.15 ± 0.72	1.648	.178	-
	2. Recreation	66	3.20 ± 0.75			
	3. Coaching Education	71	3.37 ± 0.73			
	4. Sports Management	75	3.11 ± 0.79			
Participation in the Course, Library, and Resource Access	1. Physical Education and Sports	90	3.22 ± 0.69	1.103	.348	-
	2. Recreation	66	3.23 ± 0.80			
	3. Coaching Education	71	3.42 ± 0.73			
	4. Sports Management	75	3.28 ± 0.80			
Communication with Faculty Members	1. Physical Education and Sports	90	3.35 ± 0.87	1.531	.206	-
	2. Recreation	66	3.24 ± 0.85			
	3. Coaching Education	71	3.48 ± 0.85			
	4. Sports Management	75	3.19 ± 0.95			
Participation in Scientific and Cultural Activities	1. Physical Education and Sports	90	2.86 ± 0.95	2.512	.059	-
	2. Recreation	66	3.12 ± 0.92			
	3. Coaching Education	71	3.20 ± 0.98			
	4. Sports Management	75	2.85 ± 1.04			

According to Table 5, statistically significant differences were observed between the departments in the sub-dimensions of school climate, commitment to school, communication, and learning environment ($p<0.05$). Post hoc analysis indicated the averages of the "Physical Education and Sports" and "Coaching Education" departments were significantly higher than those of the "Recreation" departments ($1>2$, $3>2$, $p<0.05$). No significant differences were found between the groups in other sub-dimensions ($p>0.05$).

Table 6. ANOVA Test for grade point average variable

		n	$\bar{X} \pm s. s.$	F	p	Post Hoc
School Climate	a. 0-1.99	21	3.25±0.90	4.271	.006*	d > a
	b. 2.00-2.49	72	3.56±0.92			
	c. 2.50-2.99	124	3.56±0.77			
	d. 3.00-4.00	85	3.85±0.68			
Commitment to School	a. 0-1.99	21	3.26±1.21	2.921	.034*	d > c
	b. 2.00-2.49	72	3.38±1.11			
	c. 2.50-2.99	124	3.37±0.96			
	d. 3.00-4.00	85	3.74±0.86			
Communication	a. 0-1.99	21	3.19±0.92	4.732	.003**	c > a d > a
	b. 2.00-2.49	72	3.68±0.95			
	c. 2.50-2.99	124	3.77±0.80			
	d. 3.00-4.00	85	3.93±0.71			
Learning Environment	a. 0-1.99	21	3.29±0.89	4.197	.006*	d > a, c
	b. 2.00-2.49	72	3.60±0.97			
	c. 2.50-2.99	124	3.52±0.84			
	d. 3.00-4.00	85	3.88±0.73			
Academic Engagement	a. 0-1.99	21	3.07±1.14	4.374	.005**	d > b, c
	b. 2.00-2.49	72	3.08±0.71			
	c. 2.50-2.99	124	3.13±0.73			
	d. 3.00-4.00	85	3.45±0.65			
Participation in the Course, Library, and Resource Access	a. 0-1.99	21	2.97±1.11	9.654	.000**	d > a, b, c
	b. 2.00-2.49	72	3.06±0.70			
	c. 2.50-2.99	124	3.24±0.74			
	d. 3.00-4.00	85	3.62±0.58			
Communication with Faculty Members	a. 0-1.99	21	3.15±1.21	3.262	.022*	d > b
	b. 2.00-2.49	72	3.18±0.88			
	c. 2.50-2.99	124	3.25±0.88			
	d. 3.00-4.00	85	3.57±0.77			
Participation in Scientific and Cultural Activities	a. 0-1.99	21	3.09±1.28	1.393	.245	-
	b. 2.00-2.49	72	3.01±0.88			
	c. 2.50-2.99	124	2.87±0.96			
	d. 3.00-4.00	85	3.14±1.00			

According to the results in Table 6, significant differences were found between the groups in the sub-dimensions of school climate, commitment to school, communication, learning environment, academic engagement, class participation, library and resource access, and communication with faculty members ($p < 0.05$). Post hoc analyses showed that, in these dimensions, students with GPAs in the 3.00-4.00 range had significantly higher averages compared to students with lower GPAs. No significant difference was found between the groups in the dimension of participation in scientific and cultural activities ($p > 0.05$).

Table 7. T-test for the physical condition of the school variable

		n	$\bar{X} \pm s. s.$	t	p
School Climate	Good	216	3.90 ± 0.62	11.161	.007*
	Poor	86	2.93 ± 0.81		
Commitment to School	Good	216	3.86 ± 0.74	13.584	.010*
	Poor	86	2.49 ± 0.91		
Communication	Good	216	3.94 ± 0.73	6.574	.019*
	Poor	86	3.28 ± 0.91		
Learning Environment	Good	216	3.90 ± 0.68	9.997	.010*
	Poor	86	2.94 ± 0.89		
Academic Engagement	Good	216	3.34 ± 0.68	5.082	.070
	Poor	86	2.87 ± 0.82		
Participation in the Course, Library, and Resource Access	Good	216	3.38 ± 0.69	3.444	.056
	Poor	86	3.05 ± 0.84		
Communication with Faculty Members	Good	216	3.48 ± 0.79	5.204	.007*
	Poor	86	2.91 ± 0.99		
Participation in Scientific and Cultural Activities	Good	216	3.15 ± 0.93	4.394	.327
	Poor	86	2.61 ± 1.00		

When Table 7 is examined, significant statistical differences were found in the overall school climate scale and its sub-dimensions. The scores for school climate ($p < 0.007$), commitment to school ($p < 0.010$), communication ($p < 0.019$), and learning environment ($p < 0.010$) were found to be higher for those who answered "good" compared to those who answered "poor". When examining the academic engagement scale scores, a significant difference was found only in the sub-dimension of communication with faculty members ($p < 0.007$).

Table 8. Correlation analysis between school climate and academic engagement and the score distributions of the scales

	1	2	3	4	5	6	7	8
School Climate	1	.888**	.885**	.943**	.559**	.462**	.561**	.433**
Commitment to School		1	.630**	.784**	.545**	.471**	.511**	.436**
Communication			1	.775**	.444**	.348**	.484**	.325**
Learning Environment				1	.529**	.435**	.528**	.414**
Academic Engagement					1	.839**	.877**	.878**
Part. in the Course, Lib., and Res. Acc.						1	.620**	.585**
Communication with Faculty Members							1	.662**
Participation in Scientific and Cult. Act.								1

Table 8 shows a significant relationship between school climate and academic engagement. Overall, school climate exhibits a strong positive correlation with academic engagement ($r = 0.559$). Moreover, the effect of school climate on the sub-dimensions of academic engagement is also significant. Specifically, strong positive correlations are found between school climate and the sub-dimensions of academic engagement, such as class participation, library and resource access ($r = 0.839$), communication with faculty members ($r = 0.877$), and participation in scientific and cultural activities ($r = 0.878$). These findings indicate that school climate significantly affects

both the overall level and the sub-dimensions of academic engagement, suggesting that improving school climate can enhance students' academic engagement.

DISCUSSION and CONCLUSION

The results of the t-test analysis for the gender variable revealed no statistically significant difference in perceptions of school climate between male and female students. This finding may reflect the presence of more inclusive and equitable institutional practices within the studied university context, where gender-based differentiation in educational experiences is minimized. Similar results have been reported in previous research, where no significant gender-based differences in school climate perception were identified (Akpulat et al., 2022; Doğan & Aslan, 2022; Erarslan, 2018; Şahin & Atbaşı, 2020). These studies emphasize that evolving institutional policies aimed at fostering equality, along with increased awareness of gender-sensitive educational practices, may contribute to the convergence of male and female students' perceptions. In contrast, several studies have identified significant gender differences in school climate perceptions, reporting more favorable experiences among female students in areas such as teacher support, peer relationships, and school connectedness (Fan et al., 2011; Koth et al., 2008; Kuperminc et al., 2001; Mitchell et al., 2010; Sökmez et al., 2020; Verkuyten & Thijs, 2002; Welsh, 2000). These discrepancies across studies may be explained by contextual variables such as the cultural norms of the educational setting, variations in institutional climate, or methodological differences, including measurement tools and sample demographics. As suggested by Hopson et al. (2014), gender-related differences in school climate perception may also be shaped by implicit biases within school systems or by differing gender-based expectations regarding interpersonal relationships and institutional support. On the other hand, the analysis revealed a statistically significant gender difference in academic engagement, with female students reporting higher levels compared to their male counterparts ($p=0.004$). This result may be linked to existing literature suggesting that women tend to form stronger affiliative bonds in academic contexts and may demonstrate greater sensitivity to relational aspects of the learning environment (Debs & Kota, 2021; Demiroz, 2020; Ergün et al., 2018). Socialization processes that encourage emotional expressiveness and relationship-building among women may enhance their academic engagement and belonging. Conversely, other studies have reported no significant gender-based differences in academic engagement (Kılıç & Öksüz, 2020; Özyer, 2023), potentially due to variations in institutional culture, disciplinary fields, or the extent to which the learning environment supports inclusivity. As emphasized by Zumbrunn et al. (2014) and Freeman et al. (2007), students' sense of academic engagement is not only shaped by personal

characteristics such as gender, but also by structural factors like faculty support, classroom practices, and peer dynamics—each of which can vary substantially across institutions and contexts.

According to the analyses conducted for the class variable, significant differences were found in school climate and its sub-dimensions. A review of the literature reveals studies that also found significant differences between class levels and school climate, aligning with our findings (Akpulat et al., 2022; Erarslan, 2018). However, in the study by Demiroz (2020), no significant difference was found between school climate and class levels, resulting in a different outcome compared to our research. The differences in the results may be due to differences in sample groups. Although no significant difference was found in the academic engagement scale, significant differences were observed between class levels in the sub-dimensions of communication with faculty members and participation in scientific and cultural activities. The fact that third-year students are typically in a transition period, facing a sudden increase in academic workload and a greater number of personal responsibilities, may have contributed to the emergence of these differences.

When the analyses conducted based on the department variable were examined, significant differences were found in the overall school climate scale and all sub-dimensions (commitment to school, communication, and learning environment) ($p < 0.05$). The results indicated that the averages of the "Physical Education and Sports" and "Coaching Education" departments were higher than those of the "Recreation" department. In the study conducted by Erarslan (2018) with university students, significant differences between departments were found, which aligns with our findings. However, no significant differences were found between the department variable and academic engagement and its sub-dimensions ($p > 0.05$). The "Physical Education and Sports" and "Coaching Education" departments generally offer more defined and goal-oriented educational processes. In broader and more flexible fields like the Recreation department, students may experience uncertainties in their career goals. As a result, their perceptions of school climate and academic engagement may be negatively affected.

The analyses revealed statistically significant differences between GPA, school climate, and academic engagement ($p < 0.006$, $p < 0.005$). In general, students with a GPA of "3.00-4.00" showed more positive perceptions of school climate compared to those with lower GPAs. Studies in the literature also suggest that students with higher GPA averages tend to have higher levels of academic engagement, aligning with the findings of our study (Anderman, 2002; Sarı, 2013; Yokuş et al., 2017). Furthermore, research by Davis and Warner (2018) and Daily et al. (2019)

emphasizes the impact of school climate on academic success. The experience of success may lead to increased interaction with the school environment and more time spent at school. Additionally, students with higher GPAs may utilize the academic and social opportunities offered by their institutions, contributing to more positive perceptions of school climate and a stronger sense of academic engagement.

According to the t-test results between school climate and academic engagement in terms of the physical condition of the school, statistically significant differences were found in the school climate scale. When examining the scores related to academic engagement, a significant difference was found only in the "communication with faculty" subdimension ($p < 0.007$). Dönmez and Taylı (2018) suggest that improving the physical conditions of schools can increase students' academic engagement. The results show that those who answered "good" had higher averages compared to those who answered "poor." This indicates that a positive physical environment can create a more favorable perception of school climate among students. These findings suggest that physical conditions can influence education quality and perceptions.

The findings obtained indicate a strong and positive relationship between school climate and academic engagement ($r = 0.559$). These results confirm the hypothesis that school climate significantly affects academic engagement and that there is a significant relationship between school climate and academic engagement. A review of the literature reveals studies that found significant differences between students' perceptions of school climate and their academic engagement, aligning with the results of our research (Brand et al., 2003; Demiroz, 2020; Huang et al., 2013; St-Amand et al., 2021; Waters et al., 2009). A strong school climate positively impacts students' perceptions of academic engagement by making them feel valued and view themselves as part of their school. Organizing the school climate in a supportive, safe, and participatory manner makes the time students spend in school more valuable and meaningful, thereby strengthening their academic engagement. This result emphasizes that improving school climate is an important tool for enhancing academic engagement.

Recommendations

- Based on the strong positive relationship found between school climate and academic engagement, university administrations should conduct initiatives that foster a school climate where students feel valued. These efforts should aim to support students'

academic success, provide necessary guidance for each class, and ensure an equal approach, regardless of gender.

- To address the differences identified in terms of gender, class, department, GPA, and the physical state of the school, it is crucial to identify deficiencies in students' perceptions of school climate and academic engagement. Necessary measures should be taken to improve these deficiencies.
- Given the impact of physical conditions on students' school climate and academic engagement, it would be valuable for universities to improve these conditions and make the necessary environmental adjustments.
- Conducting the study with a larger sample group across different universities could increase generalizability and positively contribute to the field. Additionally, more in-depth analyses can be conducted by incorporating qualitative data alongside the quantitative data used in this study.

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Ethics Committee Approval

Ethical approval for this study was obtained from Mugla Sıtkı Kocman University Social and Human Sciences Research Ethics Committee on 30.03.2024, protocol number 240062, and decision number 59.

Author Contributions

Study Design: AA, ZED; Supervision: AA, AGG; Data Collection: AA, ZED; Data Analysis: AA, AGG; Literature Review: AA, ZED; Writing: AA, ZED, AGG; Critical Review: AGG, AA, ZED.

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