Article

The Mediating Role of Perception in the Relationship between Expectation and Satisfaction in Terms of Sustainability in Tourism Education

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Abstract: Education plays a central role in shaping individual and social change toward sustainability. Sustainable tourism education provided by the higher education institutions which offer education at the undergraduate level has an important role in training candidate managers and meeting the need for qualified labor in the tourism sector in terms of sustainable tourism. The purpose of this study is to examine the relationship among expectation, perception, and satisfaction of the undergraduate students receiving tourism education at the tertiary level. It is also aimed to reveal the mediating role of perception between expectation and satisfaction. One of the quantitative methods used in the research process was the causative and correlational model. A total of 675 students participated in this survey conducted at the Tourism Faculty of Akdeniz University. To collect data, expectation of tourism education, perception of tourism education, and satisfaction of academic education scales were used. In the data analysis, parametric tests, *t*-test, ANOVA, correlation, and regression analyses were applied. In this study, it was revealed that 675 students receiving tourism education at the undergraduate level came to school with moderate-level expectations, their perceptions fulfilled their expectations with the experience they had, and their satisfaction levels that emerged as a result of their perceptions were at a moderate level as well. As a result of the *t*-test performed, it was put forward that there was no difference in their level of satisfaction based on the gender variable; however, a significant difference was determined based on the high school type from which a subject graduated, the current department, class, and age variables. As a result of the correlation analysis, a positive relation was identified between the expectation, perception, and satisfaction variables. The multiple regression analysis indicated that expectation positively affected perception and satisfaction; therewithal, perception affected satisfaction and its sub-dimensions positively. It was also found that the perception had a partial mediating role between expectation and satisfaction in education.

Keywords: expectation; perception; satisfaction; sustainability in tourism education

1. Introduction

The tourism sector is on the first ranks among the sectors which are fastest growing and increasing their share in today's world economies. In this respect, the consistent increase in the contributions of the tourism sector to the world and national economies [1] has revealed the need for a qualified labor force by increasing the competition in national and international tourism markets [2]. Being able to ensure the quality of service required by today's contemporary tourism understanding and to achieve quality relations between the tourist and employees serving the tourist are largely based on the high

levels of vocational and technical education of the employees working in the sector [3,4]. Therefore, the labor force at the estimated quality can only be achieved through an active and high-quality tourism education and training.

Tourism education provided by the higher education institutions which offer education at undergraduate level has an important role in training candidate managers and meeting the need for qualified labor in tourism sector. In this respect, educational institutions which provide tourism education at undergraduate level should be sensitive to the requests and needs of students who receive educational services in terms of the quality of the service provided. Learning the expectations, perceptions, and satisfaction levels of the students, who are the subjects of tourism education, about tourism education is of paramount importance in terms of revealing the quality of the current tourism education, identification of the shortcomings, detecting the problems and solving them. This study is unique in revealing that the determination and fulfillment of expectations of students has a very important effect on the satisfaction of the given academic tourism education. In this context, the findings obtained in this study show that the tourism education curriculum for sustainable tourism education should be prepared to determinate and to meet the expectations of the students.

Tourism education in Turkey officiates important task in terms of corroborating the development of tourism and ensuring the quality of human resources continuously. Tourism education in Turkey is carried out in two ways: formally and informally. Educational institutions providing formal education consisting of schools offering vocational tourism education at secondary and tertiary levels. Informal tourism education includes short-term vocational courses offered by both official and private institutions [5].

According to Amoah and Baum, schools offering sustainable tourism education emerged to fulfill the needs, such as informing the sector by following the technology and trends for the tourism establishments operating in a challenging environment, providing the need for qualified staff that is always needed, improving the career image in tourism, providing employment to the new and growing tourism sector, creating employment regulations, reducing the number of foreign employees working in the new and growing tourism sector, and meeting the customers' growing demand for service and communication [6]. The remainder of this study is organized as follows: Section 2 provides a background on sustainability, expectations, perceptions, and satisfaction in tourism education; Section 3 illustrates the sample and research method; Section 4 outlines the main findings; and Section 5 comments on the achieved results and presents our conclusions and recommendations.

2. Literature Review

2.1. Sustainability in Tourism Education

The tourism industry is one of the largest industries in the world, which has 1235 million international tourist arrivals and 10% of world's GDP, employs 1 of 10 employees, and presents 7% of the world's exports (1.4 trillion USD) in 2016 [7]. In this context, in order to ensure sustainability in tourism, it is necessary, firstly, to ensure sustainability in tourism education. It is widely agreed that sustainable tourism education is important to the achievement of sustainable tourism and sustainable development [8]. According to The Center for Sustainable Tourism, sustainable tourism contributes to a counterbalanced and healthy economy by generating tourism-related jobs, revenues, and taxes, while being preventive and improving a destination's social, cultural, historical, natural, and built resources for the pleasure and welfare of both inhabitants and visitors [9]. Sustainable tourism has the potency of subscribing to local development while saving the natural environment and conserving cultural heritage. Application of this form of tourism requires human resources that can shoulder effective leadership in sustainable development [10]. It is very considerable to comprehend how important sustainability in tourism education is for the three stakeholder groups: tourism students, tourism industry directors, and tourism educators. The academic tourism institutions have to defend offering a curriculum that lectures students to make resolutions that regard sociable, economical, and peripheral responsibilities, taking into account the expectations of students in terms

of sustainability in tourism education. The concept of tourism education for sustainability draws on the expectation, perception, and satisfaction of teaching and learning tourism, emphasizing critical reflection on values and the active empowerment of students to make change. A large number of universities around the global aim to integrate sustainability into their tourism education considering the need for sustainable tourism development. Sustainable education for tourism is not only about obtaining knowledge regarding theories related to tourism, but it also requires determining expectations of students and meeting their expectations in matters related to more tourism education. The benefits of effective sustainable tourism education to society and the national economy include: increasing employment, the preservation of cultural and natural resources, and the positive economic impact of increasing access to outside resources that benefit a community. In tourism education, educators have an important role to play in educating future leaders who can promote sustainability in tourism. It is important to determine how sustainability concepts and practices can be embedded in teaching and research in tourism in higher education [11].

2.2. Expectations, Perceptions, and Satisfaction

Expectations are described as preliminary thoughts that set the standard or reference point while carrying out performance evaluation of a product. Understanding the customers' expectations of service quality is the key to ensure the quality of service. Additionally, the embodied characteristics of the service offered are important factors that affect the consumer expectations, an abstract feature [12]. Consumers assess the quality of the service they receive through their expectations and reach a conclusion about it. Therefore, expectations play a key role in the evaluation of the service quality [13–18]. Although Cronin and Taylor advocate that it is unnecessary to measure the expectation variable, the measurement of expectations gives managers the power to identify them [14].

The educational process includes in-class academic teaching, as well as out-of-class student-instructor relations, curriculum, and academic counseling and guidance for students [19]. This case may cause student expectations to be fulfilled at high or low levels due to different factors. Students' being evaluated as an individual by the instructor and other staff in an educational institution, their being valued, and the perceptions associated with this, play an important role in their expectations [20] and these kinds of factors, as well as academic education, may affect students' school expectations [21]. Furthermore, preparing the course content according to the current issues and sartorial requirements leads to the fulfillment of student expectations, and this situation also contributes to the increase in satisfaction of the educational experiences [22]. In the higher education institutions offering tourism education, the fact that vocational courses are taught practically by the experts in the field as elective courses according to the students' interests and include the latest samples of technology used in the sector may contribute to the formation of student satisfaction by playing a significant role in fulfilling the expectations that have emerged [23]. In higher education institutions, it is also substantial to bring to light the expectations of the students for the purpose of determining the measurement methods of student satisfaction and service quality [24].

According to Sweeney and Soutari [25] the perceived value emerges as an idea whether the costs endured before benefiting from the service have a return or not, as a possibility of other options' being more convenient in the process of benefiting from the service, and as the judgments and evaluations about whether it is really worth it or not. Therefore, students' perceptions of the schools and departments they study at, or have graduated from, are essential because they form the basis for especially organizational behaviors [26].

In a study, Sapri and Finch [27] indicate that three important factors, including instructors' performance, service delivery process, and activities supporting the basic process, affect students' learning experiences. This finding is supported by the study of Hill, Lomas, and MacGregor [28] on students' perceptions of the quality of education. In this study, it was determined that the quality of instructors and student assistance systems were the most effective factors on students' perceptions.

Satisfaction is described as the idea that a service has been ensured in a satisfying way [29]. As stated by another definition, satisfaction is regarded as the status that the things realized meet the expectations and/or exceed them [30]. In spite of the fact that service quality and satisfaction may appear conceptually different, they are in a very close relation because of their basic structure. If the service performance drops below the expectations, the client will be unsatisfied with the service [31].

Student satisfaction is defined as the level where expectations are fulfilled in educational institutions [23]. One of the factors that constitute the quality of education is student satisfaction. Various studies have been carried out in this regard at many universities in the world to measure student satisfaction. It has been identified in these studies that different educational services provided by universities may have a potential effect on student satisfaction [32]. In many studies, it has been revealed that school programs and the service quality of education offered by the school are seen as indicators in keeping the students [33], and that faculty guidance programs and positive academic performance have a positive relationship with student satisfaction [34]. Student satisfaction results from the provision of the criteria, like self-respect, social competency, social support, individual responsibility, and psychological wellness, and the administrative, social, and psychological systems of the school have an important impact on the sustainability of the schools in the educational process [35]. Additionally, the physical and overall quality of the school, the expertise of the instructors and their interest in the course, and students' expectations to continue their careers are effective determinants to determine student satisfaction [36].

The level of fulfillment of the students' expectations influences both their success and satisfaction levels. When the expectations are not fulfilled, that is, the perception is lower than the expectation, complaints and dissatisfaction increase [37]. When the expectations of the students are met, in other words their perceptions and expectations overlap, or the perception exceeds the expectation, it can be predicted that the satisfaction level they will get from the school will increase as well. Indeed, a positive relationship between satisfaction and students' acceptance of commitment to school, incentives, and educational values has been detected [38]. In their study examining the educational satisfaction of tourism students at undergraduate level, Tütüncü and Doğan reveal that quality in education is a priority over everything and the competence of instructors is considered very important in order to increase the satisfaction of the students [39]. University students' evaluations of the educational services include both the student-instructor relations in class and the conditions and behaviors that facilitate learning. Research on student satisfaction of the educational process puts forward that learning is strongly associated with satisfaction from the course [40]. These opinions are also supported by a study conducted by Butt and Rehman [32].

The situation where the relationship between two variables is ensured by a third variable is expressed as the mediating relationship, and three conditions must be met in order to mention the existence of the mediating relationship between the variables. These conditions can be listed as statistically significant relationships between the independent variable and the dependent variable, between the independent variable and the mediator variable, and between the mediator variable and the dependent variable [41]. When the effect of the mediator variable is controlled, the relative decrease in the relation among the independent variable and the dependent variable is expressed as partial mediation, and if this relationship completely disappears, or in another expression the relationship is not statistically significant, it is expressed as full mediation. In the case of full mediation, there is a single and important mediator variable between two variables, and in the case of partial mediation there is more than one mediator variable. However, it is necessary to statistically test whether the relationship between independent and dependent variables decreases or disappears. The Sobel test is used for this purpose, and it is necessary to look at the significance of the z value calculated through this test [42].

As a result, comprehension of what students anticipate from the educational process is necessary in providing and appraising their satisfaction with the processing. The expectation level that students have is one of the most important factors that bring out their satisfaction decrease or

increase. According to Şahin, educational services provide student satisfaction by meeting the students' demands, needs and expectations, and providing an educational service beyond expectations [24].

It could be possible that after fulfilling the basic organizational conditions, students can study in an academic environment safely and they can be motivated to meet the need for having social and academic content which cover academic and social integration. Students' activities to meet the needs for socialization, obtaining status, and self-actualization in terms of learning increase their satisfaction levels and motivate them more to meet another need at an upper level compared to fulfilling basic needs. Basic learning needs, in other words hygiene factors, are necessary, but not sufficient, conditions for students to be satisfied and motivated to meet a new need.

3. Methodology

3.1. Purpose of the Research

In terms of the managers of schools aiming at providing sustainable quality tourism education, it is of great importance to determine and ensure the satisfaction of students in academic education. There are many factors that affect the satisfaction of academic education. These factors include the level of prior expectations and the level of perception after experience. This study aimed to determine the relations and the effects between the prior expectation, the perception after the experience, and the level of satisfaction after the perception. In this context, the main purpose of the research is to determine the direct and indirect (via perception) effects of the independent variable "expectation" on the dependent variable "satisfaction".

3.2. Data Collection

In the expectation scale used for this study, with the concept of expectation, pre-informed expectations (conscious and unconscious expectations) that students have about tourism education before they start to take tourism education are expressed. In the perception scale used for this study, the concept of perception is expressed as a result of comparing the prior expectations of the students with the current tourism education in the school. In the satisfaction scale, with the concept of satisfaction, students' satisfaction after prior expectation and processual perception is expressed.

This study aims to present an evaluation of the expectations, perceptions, and satisfaction levels of the undergraduate students receiving tourism education at a tourism faculty at the tertiary level regarding the tourism education that they receive.

The quantitative method was chosen during the implementation period of the study. A simple random sampling technique was used in determining the research sample. The population of the research consists of 2157 students registered at the Faculty of Tourism at Akdeniz University. While the sample of the study should be 327 students at 95% reliability, 675 students attending the school were reached in this study. Data were collected through questionnaires in the fall semester of 2016–2017 academic year. The questionnaire created to collect the research data comprised four sections. In the first section, personal information (gender, age, the high school graduated from, their current departments, class, and order of preference) was collected and, in the second section, in order to measure students' expectations, an expectation of tourism education scale including 10 statements, used by Barry and Melody in their study, was used here. In the third section, a perception of tourism education scale consisting of seven statements used by Barry and Melody in their study was used [43], and in the fourth section a satisfaction of academic education scale comprising 18 statements used by Sökmen in a study was utilized [44]. The scales used in the study are five-point Likert type in the form of (1) "Completely disagree"; (2) "Disagree"; (3) "Neutral"; (4) "Agree"; and (5) "Completely agree". Data collected by questionnaire were analyzed and interpreted with SPSS 22.0 (IBM, Armonk, NY, USA) statistical analysis software.

3.3. Research Model

Quantitative research method was used in this research. In the direction of research hypotheses, a structural equation model was used to determine the relationship between expectations, perception, and satisfaction variables. The research model in Figure 1 is based on the research objectives and hypotheses, as well as the research in the field literature. There are three factors and 11 relationships that link these factors to one another. The model shows the indirect and direct relationships between the variables in the research, as well as the relationships between variables related to the mediator variable. In addition, the demographic variables in the model are related to satisfaction and the perception variable is related to satisfaction sub-dimensions. Eleven hypothesis tests are envisaged in the research model. The hypotheses tested in the present study are as follows:

Hypothesis 1 (H1). *There is a statistically significant difference between the students' perceptions of satisfaction and their gender.*

Hypothesis 2 (H2). *There is a statistically significant difference between the students' perceptions of satisfaction and their ages.*

Hypothesis 3 (H3). *There is a statistically significant difference between the students' perceptions of satisfaction and their classes.*

Hypothesis 4 (H4). *There is a statistically significant difference between the students' perceptions of satisfaction and their departments.*

Hypothesis 5 (H5). *There is a positive relationship between the students' expectations, perceptions and satisfaction.*

Hypothesis 6 (H6). *Students' perceptions affect their satisfaction positively.*

Hypothesis 7 (H7). *Students' perceptions affect the dimensions of satisfaction positively.*

Hypothesis 8 (H8). *Students' expectations affect their satisfaction positively.*

Hypothesis 9 (H9). *Students' expectations affect their perceptions positively.*

Hypothesis 10 (H10). *Perception has a mediator role in the relationship between student's expectation and satisfaction.*

Hypothesis 11 (H11). *Students' expectations affect their satisfaction more than perceptions positively.*

In accordance with the hypotheses developed, the research model was established as in Figure 1.
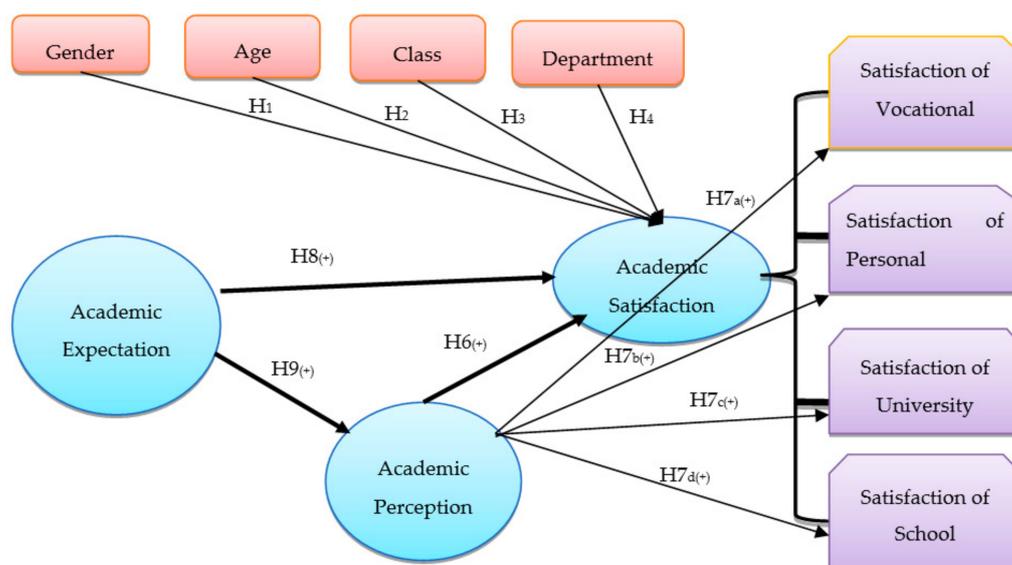
Figure 1. Research model.

3.4. Data Analysis

The Kolmogorov-Simirnov test was carried out in order to determine whether data were normally distributed or not in the multivariate analyses and, as a result of the test, it was found that data had a normal distribution. Since data obtained had a normal distribution, parametric tests were applied. Cronbach's alpha reliability analysis was used to measure the reliability of the scales used in the study, which were satisfaction of academic education, expectation of tourism education and perception of tourism education scales, and the frequency and descriptive statistics were used for personal information. Factor analysis was performed to test the validity of the satisfaction of academic education scale. Pearson correlation analysis was carried out in order to determine the relationship between expectation, perception and satisfaction variables, and linear regression analysis was carried out to identify the effect of variables' on each other. The independent samples *t*-test was performed to test hypothesis H1, the one-way ANOVA test was used to test Hypotheses H2–H4, Pearson correlation analysis was done to test Hypothesis H5, simple linear regression analysis was performed to test Hypotheses H5, H7, and H8, and multiple simple linear regression analysis was performed to test H9.

4. Findings

This section presents the information obtained as a result of the data analysis of the study.

4.1. Validity and Reliability Findings

The alpha (α) model (Cronbach's alpha coefficient) was applied, which is used in the reliability analyses of the scales. The Cronbach's alpha coefficient was found to be 0.94 in the general validity and reliability analysis of the scales; Cronbach's alpha coefficient was 0.90 for the Satisfaction of Academic Education scale; it was 0.87 for the Expectation of Tourism Education scale; and it was 0.87 for the Perception of Tourism Education scale. These Cronbach's alpha values indicate high reliability for the scales used in the study.

4.2. Factor Analysis for the Satisfaction of Academic Education and Scale Validation Findings

Factor analysis was performed in order to test the construct validity of the satisfaction of academic education scale. The Kaiser-Meyer-Olkin (KMO) test was carried out to test the adequacy of the sample size and the Barlett sphericity test was conducted to determine whether the variables had normal distributions or not. The KMO value of the satisfaction of academic education scale was 0.906, and the

Barlett sphericity test results were significant. After factor analysis and varimax rotation were carried out, four dimensions whose eigenvalue of the satisfaction of academic education scale was greater than one were identified and the four dimensions accounted for 67.728% of the total variance. Table 1 shows under which factors satisfaction of academic education gathered.

Table 1. Factor analysis for satisfaction of academic education.

Variables	Statements	Factor Loading	Factor Validity	Factor Variance
Satisfaction of Vocational Education	14—I think I have specialized in the program I study at.	0.756	0.82	20.405
	15—I think I have learnt an important part of the concepts and applications of my profession.	0.782		
	16—I had the opportunity to improve the theoretical knowledge I gained at school through practical application.	0.778		
	17—Thanks to my education, I can find a job more easily compared to others.	0.644		
Satisfaction of Personal Development	10—Thanks to my education, my self-confidence has increased.	0.660	0.85	19.589
	11—The education I received and the experiences I had at school improved my communication skills.	0.800		
	12—I have become a more social and active person.	0.824		
	13—The education I received and the experiences I had at school taught me how to lead my life.	0.735		
Satisfaction of University	6—Social and psychological counseling services provided at university are adequate.	0.751	0.73	14.258
	7—Many social and cultural activities which draw my interest are organized at my university.	0.792		
	8—Academic counseling services provided are adequate.	0.714		
Satisfaction of School	1—Course hours and the program are sufficient and well organized.	0.817	0.70	13.476
	2—The courses offered within the program are adequate and organized in accordance with the purpose.	0.810		
	18—I believe the language education which will help me do my job easily is provided.	0.515		
KMO: 0.906 **P: 0.000 (Barlett's test)**			**Total Variance: 67.728**	

The statements with values below 0.50 in the factor analysis, are 3 (Overall, I am satisfied with my school and department), 4 (The instructors from whom I receive my education have sufficient professional knowledge and experience), 5 (Food and beverage services provided at university are adequate), and 9 (The physical equipment of the school like classroom and computer labs are sufficient), and were excluded from the analysis. The fact that Cronbach's alpha values for the factors were positive and over 60% indicates that the scale is quite reliable. The validities for the dimensions of the scale were identified as 0.82 in the factor of satisfaction of vocational education, 0.85 in the factor of satisfaction of personal development, 0.73 in the factor of satisfaction of university and, finally, 0.70 in the factor of satisfaction of school.

4.3. Findings Concerning Personal Information

In data regarding the personal information of the participants show that 56.1% of the participants were male and 43.6% of them were female. In total, 20.6% of the participants were 21 years old, 17% of them were 19 years old, 17% of them were 20 years old, 12.4% of them were 22 and, finally, 12.3% of the students were 18 years old. When their classes were examined, it is seen that 31.7% of the participants were in first year, 21.8% of them were in second year, 22.1% of them were in third year and, finally, 24.3% of the students were in fourth year. In addition, 40.1% of the students participating in the study were graduates of standard high schools, 32.4% of them were graduates of Anatolian high schools, and 16.3% of the participants graduated from vocational high schools offering tourism education. The analysis of the departments of the participants indicated that 57.8% of the students studied in the department of tourism management, 16.9% of them were in the department of gastronomy and culinary arts, 5.2% of them were in the department of tourist guiding, 9.9% of them were in the department of hospitalization management and, finally, 10.2% of the participants were in the department of travel management. When the faculty preference order of the students were examined, it was found out that 36.9% of the participants preferred the tourism faculty in the 1st rank, 15.1% of the participants preferred tourism faculty in the 2nd rank, 10.5% of them preferred it in the 3rd rank, 7.0% of them preferred it in the 4th rank and, finally, 5.1% of the participants preferred it at the 5th rank.

4.4. Findings Regarding the Research Hypotheses

The findings and interpretations related to the research hypotheses are presented below.

4.4.1. The Difference in Satisfaction of Academic Education Based on Gender

According to Table 2, no difference in the mean values of the female ($\overline{X}$ = 3.14) and male ($\overline{X}$ = 3.17) students' perceptions of satisfaction of academic education was revealed, however, it can be stated that male students have a higher satisfaction compared to female students. In this case, hypothesis H1 "*There is a statistically significant difference between the students' perceptions of satisfaction and their gender.*" was rejected.

Table 2. Differences in satisfaction of academic education based on students' gender.

	N	MEAN	Std. Deviation	t	df	p
Female	294	3.1444	0.68725	−0.551	671	0.582
Male	379	3.1749	0.72968		646.365	

According to the *t*-test carried out to determine the significance between the students' gender and their perceptions of academic education satisfaction, the difference between the students' academic education satisfaction and their genders ($t = -0.55$, $p > 0.05$) was not significant.

4.4.2. The Difference in Satisfaction of Academic Education Based on Age

When Table 3 is analyzed, it is seen that the attitudes of satisfaction of academic education differ based on age (F $_{(15;615)}$ = 4.327, $p < 0.05$). In this case, hypothesis H2 "*There is a statistically significant difference between the students' perceptions of satisfaction and their ages.*" was accepted.

Table 3. Variance analysis (ANOVA) of the satisfaction of academic education based on students' age.

	Sum of Squares	df	Mean Square	F	p
Between Groups	30.223	15	2.015	4.327	0.000
Within Groups	286.371	615	0.466		
Total	316.594	630			

When Table 4 is analyzed, it is seen that the highest mean values of the satisfaction of academic education according to age groups belonged to the 17 ($\overline{X}$ = 4.0790), 26 ($\overline{X}$ = 4.1111), and 28 ($\overline{X}$ = 4.6471) age groups. The lowest mean values of the satisfaction of academic education belonged to the 22 ($\overline{X}$ = 2.9991), 23 ($\overline{X}$ = 2.7790), and 24 ($\overline{X}$ = 2.8735) age groups.

Table 4. The distribution of satisfaction of academic education score based on age.

	N	$\overline{X}$	Std. Deviation	Std. Error	Minimum	Maximum
17	5	4.0790	0.59502	0.26610	3.33	4.78
18	83	3.4903	0.57655	0.06328	2.44	5.00
19	115	3.1741	0.60487	0.05640	1.28	5.00
20	115	3.2152	0.60778	0.05668	1.56	4.94
21	139	3.1066	0.77670	0.06588	1.00	5.00
22	84	2.9991	0.65118	0.07105	1.28	4.28
23	47	2.7790	0.86868	0.12671	1.00	4.35
24	18	2.8735	0.73730	0.17378	1.00	3.78
25	15	3.4282	0.78348	0.20229	1.83	5.00
26	2	4.1111	0.70711	0.50000	3.61	4.61
27	3	3.0741	1.09196	0.63045	1.83	3.89
28	1	4.6471			4.65	4.65
29	1	3.4444			3.44	3.44
30	1	3.2941			3.29	3.29
33	1	3.3889			3.39	3.39
34	1	3.8333			3.83	3.83
Total	631	3.1671	0.70889	0.02822	1.00	5.00

4.4.3. The Difference in Satisfaction of Academic Education Based on Class

In Table 5 it is seen that the attitudes of satisfaction of academic education differ based on class ($F_{(3;670)}$ = 18.121, $p < 0.05$). In this case, the hypothesis H3 "*There is a statistically significant difference between the students' perceptions of satisfaction and their classes.*" was accepted.

Table 5. Variance analysis (ANOVA) of satisfaction of academic education based on students' class.

	Sum of Squares	df	Mean Square	F	*p*
Between Groups	25.734	3	8.578	18.121	0.000
Within Groups	317.161	670	0.473		
Total	342.895	673			

When Table 6 is examined, it can be seen that within the mean values of the satisfaction of academic education, the first year ($\overline{X}$ = 3.3328), second year ($\overline{X}$ = 3.1580), and third year ($\overline{X}$ = 3.2857) students had higher mean values, but fourth year ($\overline{X}$ = 2.8380) students had lower mean values. It can be stated that while satisfaction of academic education is higher in the first year, it decreases towards upper levels.

Table 6. The distribution of satisfaction of academic education score based on class.

	N	$\overline{X}$	Std. Deviation	Std. Error	Minimum	Maximum
First	214	3.3328	0.65452	0.04474	1.44	5.00
Second	147	3.1580	0.66660	0.05498	1.00	4.67
Third	149	3.2857	0.57898	0.04743	1.28	4.78
Fourth	164	2.8380	0.82679	0.06456	1.00	5.00
Total	674	3.1639	0.71379	0.02749	1.00	5.00

4.4.4. The Difference in Satisfaction of Academic Education Based on Departments

According to Table 7, the attitudes of satisfaction of academic education differ based on department ($F_{(4;670)}$ = 16.597, $p < 0.05$). In this case, the hypothesis H4 "*There is a statistically significant difference between the students' perceptions of satisfaction and their classes.*" was accepted.

When Table 8 is examined, it is clearly seen that within the mean values of satisfaction of academic education based on departments, Tourist Guiding ($\overline{X}$ = 3.3236), Tourism Management ($\overline{X}$ = 3.3019), and Gastronomy and Culinary Arts ($\overline{X}$ = 3.1263) students had higher mean values, but Hospitality Management ($\overline{X}$ = 2.8316) and Travel Management ($\overline{X}$ = 2.6966) students had lower mean values.

Table 7. Variance analysis (ANOVA) of satisfaction of academic education based on students' departments.

	Sum of Squares	df	Mean Square	F	*p*
Between Groups	30.947	4	7.737	16.597	0.000
Within Groups	312.324	670	0.466		
Total	343.272	674			

Table 8. The distribution of satisfaction of academic education score based on department.

	N	$\overline{X}$	Std. Deviation	Std. Error	Minimum	Maximum
Tourism Management	390	3.3019	0.66540	0.03369	1.28	5.00
Gastronomy and Culinary Arts	114	3.1263	0.59014	0.05527	1.00	4.67
Tourist Guiding	35	3.3236	0.50343	0.08510	2.44	4.94
Hospitality Management	67	2.8316	0.89243	0.10903	1.00	5.00
Travel Management	69	2.6966	0.76271	0.09182	1.00	4.35
Total	675	3.1648	0.71366	0.02747	1.00	5.00

4.4.5. The Relationship between Expectation, Perception, and Satisfaction of Academic Education

The relationship between expectation of academic education, perception of academic education, and satisfaction of academic education in Table 9 was examined through Pearson's correlation technique. In the correlation Table 9 are seen the mean values were found as ($\overline{X}$ = 3.7329) for the expectation of academic education, ($\overline{X}$ = 3.4328) for the perception of academic education, ($\overline{X}$ = 3.1648) for the satisfaction of academic education, ($\overline{X}$ = 2.9414) for the satisfaction of vocational education, ($\overline{X}$ = 3.2854) for the satisfaction of personal development, ($\overline{X}$ = 3.0309) for the satisfaction of university, and ($\overline{X}$ = 3.0237) for the satisfaction of school. The mean values indicate that the mean value of the satisfaction of academic education is lower than the mean values of the other variables. There is a positive relation between expectation of academic education and perception of academic education (expectation tourism education (r = 0.530, $p > 0.01$). In addition, there is a positive relation between satisfaction of academic education, and its dimensions and the expectation of academic education (satisfaction of academic education (r = 0.047, $p > 0.01$), satisfaction of vocational education (r = 0.398, $p > 0.01$), satisfaction of personal development (r = 0.391, $p > 0.01$), satisfaction of the university (r = 0.293, $p > 0.01$), and satisfaction of the school (r = 0.347, $p > 0.01$)). There is a positive relation between satisfaction of academic education, and its dimensions and perception of academic education (satisfaction of academic education (r = 0.693, $p > 0.01$)), satisfaction of vocational education (r = 0.540, $p > 0.01$), satisfaction of personal development (r = 0.533, $p > 0.01$), satisfaction of the university (r = 0.467, $p > 0.01$), and satisfaction of the school (r = 0.562, $p > 0.01$)).

Table 9. The relationship between students' expectation, perception, and satisfaction regarding academic education in the correlation matrix.

Scale	N	Mean	St	1	2	3	4	5	6	7
1. Expectation of Academic Education	675	3.7329	0.70924	1						
2. Perception of Academic Education	675	3.4328	0.83236	0.530 * 0.000	1					
3. Satisfaction of Academic Education	675	3.1648	0.71366	0.478 * 0.000	0.693 * 0.000	1				
4. Satisfaction of Vocational Education	675	2.9414	0.94892	0.398 * 0.000	0.540 * 0.000	0.815 * 0.000	1			
5. Satisfaction of Personal Development	675	3.2854	0.94494	0.391 * 0.000	0.533 * 0.000	0.820 * 0.000	0.619 * 0.000	1		
6. Satisfaction of University	675	3.0309	0.92627	0.293 * 0.000	0.467 * 0.000	0.712 * 0.000	0.428 * 0.000	0.470 * 0.000	1	
7. Satisfaction of School	675	3.0237	1.01091	0.347 *	0.562 *	0.742 *	0.511 *	0.445 *	0.453 *	1
				0.000	0.000	0.000	0.000	0.000	0.000	

*. Correlation is significant at the 0.01 level (two-tailed).

Considering these results, students' tourism education expectation and perception are positively related with their satisfaction that is their satisfaction increases or decreases in line with their expectations and perceptions. In this context, the hypothesis H5 "*There is a positive relationship between the students' expectation, perception and satisfaction.*" was accepted.

4.4.6. The Impact of Perception of Tourism Education on Satisfaction and Its Dimensions of Satisfaction of Academic Education

According to Table 10, the F values indicate that the models are significant as a whole at all levels (Sig. = 0.000). In the Table 10, it seems from the statistical t values of the parameters that each variable included in the model is individually significant (5% significance level). Satisfaction of the school with a ß value (0.684) is the dimension that is most affected by perception. Students' levels of perception explain their satisfaction of vocational education at the rate of 0.291 (R^2 = 0.29), satisfaction of personal development at the rate of 0.284 (R^2 = 0.28), satisfaction of the university at the rate of 0.218 (R^2 = 0.21), and satisfaction of the school at the rate of 0.315 (R^2 = 0.31). In this case, hypothesis H6 "*Students' perceptions affect satisfaction positively.*" was accepted.

Table 10. The impact of perception of tourism education on satisfaction and its dimensions on the satisfaction of the academic education.

Dependent Variable	Independent Variable	Coefficient		t	F	R²	p
		β	S. Error				
Satisfaction of Academic Education	Fixed Value Perception of Academic Education	1.127 0.594	0.085 0.024	24.790	614.566	0.480	0.000 *
Satisfaction of Vocational Education	Fixed Value Perception of Academic Education	0.839 0.614	0.131 0.037	16.544	273.693	0.291	0.001 *
Satisfaction of Personal Development	Fixed Value Perception of Academic Education	1.209 0.605	0.132 0.037	16.248	264.004	0.284	0.001 *
Satisfaction of University	Fixed Value Perception of Academic Education	1.243 0.521	0.135 0.038	13.621	185.536	0.218	0.001 *
Satisfaction of School	Fixed Value Perception of Academic Education	0.672 0.684	0.138 0.039	17.514	306.747	0.315	0.001 *

* $p < 0.01$.

According to this result, the 29% of the change in satisfaction of vocational education, the 28% of change in satisfaction of personal development, the 21% of the change in satisfaction of the university, and the 31% of change in satisfaction of school are explained by the perception of tourism education

variable. In this case, hypothesis H7 "*Students' perceptions affect the dimensions of satisfaction positively*." was accepted.

4.4.7. Regression Analysis of the Mediating Role of Perception in the Relationship between Expectation and Satisfaction

The F value (197.597) in the relation between the independent variable "expectation" and the dependent variable "satisfaction" indicates that the model is significant as a whole at all levels (Sig. = 0.000). In Table 11, it seems from the statistical t values of the parameters that each variable included in the model is individually significant (1% significance level). The expectation affects satisfaction and explains 23% of the satisfaction level (R^2 = 0.22). Expectation (ß = 0.481) affects satisfaction positively (Table 11). In this case; hypothesis H8 "*Students' expectations affect their satisfaction positively*." was accepted.

In the context of fulfilling the three conditions identified in the method addressed; in the first step, the F value (260.823) shows that our model is significant as a whole at all levels (Sig. = 0.000). In the Table 11, it seems from the statistical t values of the parameters that each variable included in the model is individually significant (1% significance level). The expectation of tourism education with a ß value (0.623) affects the perception of tourism education positively. This means that when students' expectations of tourism education increase, their perceptions will increase as well. The expectation level, which affects perception of tourism education, explains the level of perception at the rate of 0.281 (R^2 = 0.28). In this case, hypothesis H9 "*Students' expectations affect their perceptions positively*." was accepted.

Table 11. Regression analysis of the mediating role of perception in the relationship between expectation and satisfaction.

Dependent Variables	Variables	β	S.E.	*t*	F	R^2	*p*
(c) Satisfaction (dependent variable)	**Constant** Expectation	1.369 0.481	0.130 0.034	10.522 14.057	197.597	0.229	0.000 *
Step 1 (a) Perception (dependent variable)	**Constant** Expectation	1.109 0.623	0.146 0.039	7.570 16.150	260.823	0.281	0.000 *
Step 2 (b) Satisfaction (dependent variable)	**Constant** Perception	1.127 0.594	0.085 0.024	13.313 24.790	614.566	0.480	0.000 *
Step 3 (c') Satisfaction (dependent variable) Expectation (independent variables) Perception (mediating variables)	**Constant** Perception Expectation	0.788 0.155 0.424	0.110 0.033 0.028	7.192 4.754 18.831	328.552	0.497	0.000 *

* *p* < 0.01.

In the second step, the F value (614.566) indicates that our model is meaningful as a whole at all levels (Sig. = 0.000). It is seen from the statistical t values of the parameters that each variable included in the model is individually significant (1% significance level). The perception of tourism education with a ß value (0.594) affects the satisfaction of academic education positively. This means that when students' perceptions of tourism education increase, their satisfactions will increase as well. The perception level, which affects students' satisfaction of academic education, explains the level of satisfaction at the rate of 48% (R^2 = 0.48).

In the third and last step, regression analysis was performed to predict the role of the mediator variable in the relation between the independent variable "expectation" and the dependent variable "satisfaction". The F value (328.552) indicates that the model is significant as a whole at all levels (Sig. = 0.000). It seems from the statistical "*t*" values of the parameters that each variable included in the model is individually meaningful (1% significance level). Expectation explains 49% of the satisfaction level together with perception, which is the mediator variable that affects satisfaction (R^2 = 0.49). In addition, when expectation and the mediator variable perception are

handled together, the relationship between expectation and satisfaction increases ($\beta = 0.424$, $p < 0.001$). This suggests that perception partially mediates the relationship between expectation and satisfaction. Whether perception has a partial mediating effect depends on the significance level of the amount of increase in beta values. The significance level of the increase in the beta values was assessed using the Sobel test. The Sobel test is a test developed to determine whether the indirect effect of the independent variable (via the mediator variable) on the dependent variable is significant [45].

The Sobel test, formulated as $Z = ab/[b^2(sa)^2 + a^2(sb)^2 + (sa)^2(sb)^2]^{1/2}$, was performed by entering the unmodified regression coefficients (β) of the relevant variables and their standard error values. a, b, and c are path coefficients. a = raw (unstandardized) regression coefficient for the relationship between independent variable and mediator. b = raw coefficient for the relationship between the mediator and the dependent variable (as the independent variable is also a predictor of the dependent variable).Values in parentheses are standard errors (sa = standard error of a and sb = standard error of b) of those path coefficients. The fact that Sobel, Aroian, and Goodman test results were significant (S = 13.42, A = 13.41, G = 13.43, $p < 0.01$, respectively) showed that perception had a partial mediating effect on the relation between expectation and satisfaction. Thus, expectation affects satisfaction both directly and through perception. In line with this finding; hypothesis H10 "*Perception has a partial mediator role in the relation between expectation and satisfaction.*" was accepted.

When multiple regression analysis was used to examine the effects of factors expectation ($\beta = 0.424$) and perception ($\beta = 0.155$) on satisfaction, it was found that the factor "perception" is more effective than the factor "perception". The factors (expectation and perception) that affect students' satisfaction of academic education explain the level at the rate of 0.497 ($R^2 = 0.49$). According to this result, 49% of the change in satisfaction of academic education is explained by the factors (expectation and perception) of the academic education variables. In this case, hypothesis H11 "*Students' expectations affect their satisfaction more than perception positively.*" was accepted. In the multiple regression formula this can be shown by the following:

$$\text{Satisfaction} = 0.788 + 0.424 \times (\text{Expectation}) + 0.155 \times (\text{Perception})$$

5. Results, Conclusions, and Recommendations

In the scope of the current research carried out at the Faculty of Tourism of a state university in the province of Antalya, the intent was to determine the impact of students' expectations regarding the education they received and the educational environment on determining their perceptions emerging during their experience, and their educational satisfaction in terms of sustainable tourism education. Within this framework, the relation between the educational satisfaction of the tourism faculty students and their demographic features was revealed. When the relation between the educational satisfaction and demographic features was examined, it was determined that the satisfaction of the academic education did not change based on gender, however, there were some changes based on age, class, and department variables.

This study indented to determine the expectations, perceptions, and satisfaction of the students regarding the tourism education provided in a tourism faculty offering academic tourism education in Antalya, which is the most important city in the Turkish tourism sector in terms of the number of present tourism establishments, the quality of the establishments, the number of incoming tourists, and the amount of tourism revenues obtained. It is thought that the studies carried out will contribute to the schools providing tourism education in terms of questioning, renewing, and improving themselves. Above all, schools giving tourism education have to ensure that the students with a high level of expectation prefer their schools. These schools should ask themselves the questions "What kind of school must we be?" and "What kind of tourism education must we offer the students?" As a result, satisfaction of the academic education can be obtained by determining, fulfilling, and exceeding of students expectations.

In this study, it is understood that students attend the school with an above-average level of tourism education. Although the educational perception of the students starting to receive tourism education was relatively low at the end of the experience compared to educational expectation, it is clearly seen that it was above average. In addition, it was revealed that, regarding the school preferred and tourism education provided, the students with a high level of expectation have a high level of perception, the students with a moderate level of expectation have a moderate level of perception, and the students with a low level of expectation have a low level of perception. According to this finding, it can be stated that there is a significant and positive relation between the level of expectation and the level of perception existing at the end of the experience.

In this context, it is clearly understood that the educational institution offering tourism education met the students' expectations, however, it could not create a perception above the expectations. Among the reasons why perception above the expectations could not be created, there may be students' attitudes towards the sector and tourism education provided, inadequate research, lack of communication between the academic, and administrative staff who are in direct contact with the students and the management, the reluctance of the management about raising the quality, the impossibility perception, insufficient service standards and not setting a goal, role ambiguity, lack of teamwork, or misleading attitude policies. Firstly, the school should make an effort to raise the level of student expectations and increase the current efforts in order to have students at the desired quantity and quality.

In this study it was found that there is a highly positive relation between the perception and satisfaction of academic tourism education. It is understood that expectation is more effective on student satisfaction than perception emerging at the end of the experience. Tourism schools should make efforts to inform and help the conscious students who have a high expectation of academic education (like having a good career in the tourism sector) to prefer their schools. A study conducted by Demir revealed that student expectations and perceptions arising had an important effect on ensuring student satisfaction of educational services [46].

In addition, in this study, the indirect relationship between the expectation of academic education and satisfaction of academic education has been examined. This research has shown that perception of academic education plays a mediating role between expectation and satisfaction of academic education in terms of sustainability in education. That is, the positive effects of expectation on satisfaction are higher in students with a high positive perception. According to these results, it can be said that students will be more satisfied with the given academic education if they perceived that the academic education was better than expected. At the same time, it seems that expectation has more influence on satisfaction than perception.

As a result of the factor analysis performed on the satisfaction of academic education scale created within the scope of the relevant literature, a four-factor structure, including satisfaction of vocational education, satisfaction of personal development, satisfaction of the university, and satisfaction of the school, emerged. When the level of relation between satisfaction of academic education and its sub-dimensions was examined, it was revealed that, based on the level of relation, there was a highly positive relation between satisfaction of academic education and satisfaction of personal development, satisfaction of vocational education, satisfaction of the school, and satisfaction of the university, respectively. In addition, the students receiving tourism education had an above-average level of satisfaction of academic tourism education. When the sub-dimensions of the satisfaction of academic tourism education offered were examined, it was seen that the mean values of the satisfaction of vocational education were below average and the mean values of the other three dimensions, which were satisfaction of personal development, satisfaction of the university, and satisfaction of the school, were above average.

In conclusion, it is understood that in order to ensure the sustainability of tourism education in the direction of the findings obtained, besides fulfilling the expectations of the tourism sector, it is very important to determine and fulfill the expectations of the tourism education students. It was

determined that the students whose expectations were met had a positive perception and that their tourism education satisfaction levels were higher.

As in any research, a number of limitations require a more careful evaluation of the research results in this study as well. This study was carried out in a single faculty and cannot be generalized, but the findings obtained are expected to contribute to future research. There is no doubt that this study should be carried out again with more detailed studies, including more schools and more students, by conducting this research in other cities and other schools providing tourism education. In this context, by evaluating the results obtained as a result of the studies conducted, it will be ensured that students are highly satisfied with the sustainable tourism education provided.

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