Attitudes and Behaviors of Turkish Consumers Regarding the Olive Oil Consumption

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Abstract

The aim of this study is to reveal the attitudes and behaviors of Turkish consumers about olive oil consumption, which is an important part of the Mediterranean diet, to measure the effect of olive oil sensory properties on consumers and to determine consumers' awareness and attitudes on this subject. In line with the literature research, the characteristics that consumers give the most importance in olive oil preference and the frequency of purchasing/consumption of olive oil, considering the importance and current situation of olive oil, were examined in order to evaluate the parameters that are effective in the olive oil preference of consumers. The questions of questionnaire survey such as frequency of olive oil consumption and purchasing, packaging preferences, importance of sensory properties of olive oil were prepared and this survey study was designed. In this survey study, demographic and socio-economic structures of consumers were also taken into consideration and it was statistically determined whether the obtained data differed according to demographic characteristics (gender, age, education, income level) or not. The questionnaire, which was prepared with the "VETİ" program in line with the determined design, was applied to 272 people living in Türkiye. Statistical analysis of the questionnaire was carried out with the SPSS package program, as well as frequency distribution and Chi square tests were used in the analysis of the data. As a result of this survey study, there are statistical differences according to the answers given by Turkish consumers to the questions directed to them, depending on demographic variables examined, "gender" "age" and "education status" and "income level".

Keywords: Olive oil, Questionnaire survey, Consumer awareness, Consumer attitude, Demographic

Türk Tüketicilerinin Zeytinyağı Tüketimi İle İlgili Tutum ve Davranışları

Öz

Bu çalışmanın amacı, Türk tüketicilerinin Akdeniz diyetinin önemli bir parçası olan zeytinyağı tüketimine ilişkin tutum ve davranışlarını ortaya koymak, zeytinyağının duyusal özelliklerinin tüketiciler üzerindeki etkisini ölçmek ve bu konudaki farkındalıklarını ve tutumlarını belirlemektir. Literatür araştırması doğrultusunda, tüketicilerin zeytinyağı tercihinde en çok önem verdiği özellikler ve zeytinyağı satın alma/tüketim sıklığı Türkiye'de sıklıkla mutfaklarda kullanılan zeytinyağının önemi ve mevcut durumu göz önünde bulundurularak, tüketicilerin zeytinyağı tercihinde etkili olan parametreleri değerlendirmek için incelenmiştir. Zeytinyağı tüketim ve satın alma sıklığı, ambalaj tercihi, duyusal özelliklerin önemi gibi anket soruları hazırlanmış ve anket çalışması tasarlanmıştır. Bu anket çalışmasında tüketicilerin demografik ve sosyo-ekonomik yapıları da dikkate alınmış ve elde edilen verilerin demografik özelliklerine (cinsiyet, yaş, eğitim, gelir düzeyi) göre farklılık gösterip göstermediği istatistiksel olarak tespit edilmiştir. Belirlenen tasarım doğrultusunda "VETİ" programı ile hazırlanan anket Türkiye'de yaşayan 272 kişiye uygulanmıştır. Anketin istatistiksel analizi SPSS paket programı ile gerçekleştirilmiş, verilerin analizinde frekans dağılımı ve Ki kare testleri kullanılmıştır. Bu anket çalışması sonucunda, Türk tüketicilerin kendilerine yönltilen sorulara verdikleri yanıtlara göre, incelenen demografik değişkenlere, "cinsiyet", "yaş" ve "eğitim durumu" ve "gelir düzeyi"ne göre istatistiksel farklılıklar bulunmaktadır.

Anahtar Kelimeler: Zeytinyağı, Anket çalışması, Tüketici farkındalığı, Tüketici tutumu, Demografi

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1 Introduction

In recent years, with the increase in consumer awareness about food safety, behavioral changes in the consumption of vegetable oils have been observed. In particular, depending on their socio-economic level, consumers have started to prefer oils that they believe to be healthy and safe. A wide variety of vegetable oils are produced and consumed in Türkiye, especially sunflower oil, olive oil and corn oil. Many brands of each oil type are trying to hold on to the market and increase their market share [1]. Olive oil, as an integral part of Mediterranean diet, has strong and long-life relations with Turkish consumers, as it is continuously used not only to cover nutritional needs, but also for social and cultural purposes. Türkiye is one of the world's leading olive and olive oil producers with its geographical location and Mediterranean climate characteristics. The Aegean region is Türkiye's leading olive-growing region and an important area for olive production with an approximately 65% of olive oil production amount [2]. The Food and Agriculture Organization has reported that Türkiye is one of the important producer countries of olive oil with 206,300 tons per year (average for last years) [3]. According to the Agricultural Products Market report of Türkiye, olive oil production is 173.000 tones per year, whereas the most consumed oil in Turkey is sunflower oil with a 2 million tones production in 2021.

Olive oil contains high ratio of mono-saturated fatty acid and also, they are a good source of tocopherols, carotenoids, and phenols. The high content of polyunsaturated fatty acids and phenolic compounds are considered to be health benefits of olive oil [2]. Phenolic compounds are responsible for the sensory characteristics bitterness and pungency [4]. The odour and flavour (green olive, ripe olive, grassy, almond, artichoke, tomato leaf, apple, and citrus), taste (bitterness), tactile (astringency, thickness, and viscosity), and chemesthetic (pungency, peppery) attributes define olive oil [4,5]. ''Green'' aroma is positively related to product acceptability, Bitterness and pungency appeared as negative drivers of liking also by consumers [6]. Mediterranean diet suggests consuming olive oils in daily meal, which contains high levels of mono-saturated fatty acids and health benefits. There is growing interest in authenticity and traceability of virgin olive oil for consumer, because adulteration is a serious problem in oil industry [7]. On the other hand, the demand for olive oil has increased in recent years, due to its positive effects such as increasing the synthesis of high-density lipoprotein, positive effects on the digestive system, and low-level free radical formation both during heat treatments and in nutrition. However, the price of olive oil is higher than other oils due to the limited production of years. This situation causes olive oil to be adulterated with other cheap oils. While the adulteration of olive oil with other oils poses an economic problem, it also poses a significant threat to consumer health [2].

The social, economic and cultural characteristics of the consumer, both individual and family, are effective in the evaluation of the olive oils offered by the companies by the consumers [1]. By knowing these features, which affect the purchasing behavior of Turkish consumers, makes the marketing of the product much easier. Conducting research on the olive oil purchasing behavior of consumers and benefiting from the results of these researches will help companies gain a relative advantage over rival companies in meeting the oil demand of the population in

an intensely competitive environment. For this reason, in this research, it is aimed to determine the purchasing behavior of individuals in olive oil consumption based on the demographic information of Turkish consumers, by asking 15 questions to obtain data about the consumption habits of consumers and the factors affecting it, the characteristics of the preferred olive oil, and the issues that consumers consider important when purchasing olive oil.

This paper can be considered as a first study about to reveal the attitudes and behaviors of Turkish consumers regarding the use of olive oil and to investigate their preferences and reasons on the subject. Therefore, the purpose of this study is to evaluate Turkish consumers' attitudes toward the olive oil consumption depending on their gender, socio-economic status, age and educational levels.

2 Material and Method

2.1 Objectives and Design of Survey

The aim of the study is to reveal the attitudes and behaviors of consumers regarding the use of olive oil and to investigate their preferences and reasons on the subject. In line with the literature research, survey questions were prepared by considering the importance and current situation of olive oil, which is mostly found Turkish cuisine and at home and frequently consumed by some segments, and also demographic and socioeconomic structures of consumers were taken into consideration. In line with this purpose, the feature that consumers give the most importance when choosing olive oil; frequency of purchase/consumption; packaging preference; characteristics of olive oil. The answers they gave to the questions directed to them, such as the importance of their sensory characteristics, will be revealed and it will be tried to determine whether they differ according to demographic characteristics and socio-economic status. The list of survey questions was given below in Table 1.

Table 1. List of Survey Questions*

1. How often do you consume olive oil?
2. How often do you purchase olive oil?
3. How much would you like to pay for 1 liter of extra virgin olive oil?
4. How do you prefer to buy olive oil?
5. Which types of olive oil do you prefer when purchasing olive oil?
6. Have you tried flavored olive oil; would you prefer to consume it?
7. If you do not prefer flavored olive oil; what is your reason?
8. How important is the olive oil packaging material for you?
9. Which packaging material do you prefer when purchasing olive oil?
10. Do the cold-press, lithographic labels on the olive oil packaging material affect your product preference positively?
11. How often do you use olive oil as frying oil?
12. How important is the color of olive oil to you in your product purchase preference?
13. How important is it to you that olive oil contains sediment?
14. How important is it to you that olive oil leaves a burning sensation in the throat?
15. How often do you use olive oil in its plain form (on a salad, by itself)?

* *Survey questions about demographic characteristics of participants were excluded*

We asked respondents to choose the best response to three statements about the available grades of olive oil in order to gauge how well they understood the quality of the product. In several questions, the response options for each statement were strongly agree, agree, neither agree nor disagree, or it doesn't matter.

The questionnaire including 15 questions except of demographic information of the respondents, which was prepared with the "VETİ" program in line with the determined design, was applied to 272 people living in Türkiye in different age ranges, income levels and education levels.

2.2. Data analysis

The analysis of the data was made using the IBM SPSS Statistics 20 (Statistical Package for the Social Sciences) package program. The research was statistically evaluated with the Chi-Square (c^2) test. After the chi-square values were calculated, the hypotheses established were analyzed at the 5% (p<0.05) significance level.

2.3 Testing Research Hypotheses

Within the scope of the research, some relationships were developed between demographic characteristics and questions in order to determine the consumers' purchasing attitudes for packaged products, all relationships were tested with a Chi-Square analysis at *p<0.05* significance level and only the findings that were found to be significant were included.

3   RESULTS AND DISCUSSION

The questionnaire survey filled by 103 men (38%) and 169 women (62%) participants. Of the consumers who answered the survey, 48% are between the ages of 18-30, 39% are between the ages of 31-50, and 13% are aged 51 and over. The education level (status) of 62% of the surveyed consumers is postgraduate, 35% of them are university graduates (graduate) and 4% of them are high school graduates. Consumers are grouped according to their monthly income distribution, which is thought to affect their shopping preferences; Those with income scaled as 0-2500TL make up 15% of the participants. In addition, the income level of 2500-5000 and 5000-15000 TL, which is called "Average level", is 50%, and the income group of 15000 TL and above is 35%.

All the demographic information of the Participants was given in Table 2.

Table 2. The demographic characteristics of the participants

Sex	Frequency	Percentage (%)
Man	103	38
Woman	169	62
Total	*272*	*100*
Age Groups		
0-30	129	48
31-50	107	39
51 and above	36	13
Total	*272*	*100*
Education Level		
High School graduate	10	3
Undergraduate (University)	94	35
Postgraduate (MSc or PhD)	168	62
Total	*512*	*100*
Income Level (1 month)		
0-2500 TL	42	15
2501-6000 TL	39	14
6001-15000 TL	98	36
15001 TL and above	93	35
Total	*512*	*100*

In recent years, the concept of "Mediterranean diet" is a diet that has been especially discussed in terms of healthy nutrition and heart diseases. Olive oil, which is consumed in abundance in the Mediterranean diet, has many positive effects on human health [8]. Olive oil consumption in Türkiye is affected by the price difference between local habits and other vegetable oils. Today, Turkish people, who are interested in healthy living conditions as in the world, acquire new eating habits within the framework of the Mediterranean Diet. Olive oil has started to be consumed gradually outside the middle-income segment [9,10]. It is thought that income status also has an effect on consumers' evaluation of different choices and options for the same product.

After obtaining the demographic information, questions were asked in order to examine the attitudes of consumers during shopping for olive oil and behaviors after shopping and the answers were obtained graphically. In the survey, firstly, consumers were asked how often they consume and purchase olive oil, and the answers given to this question are shown in Chart 1 and Chart 2. When asked how often they consume olive oil, as seen in Chart 1, more than 60% of respondents indicated that they consume olive oil every day, with 27% indicating that they consume it at least twice in a week.
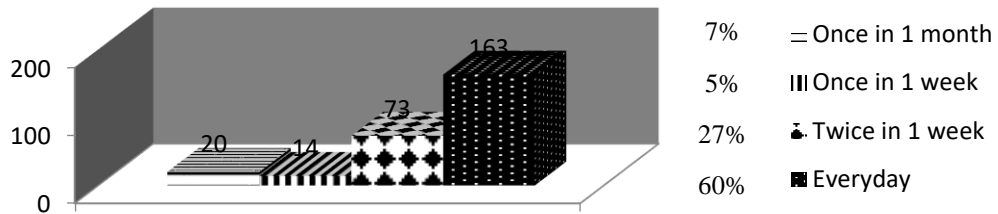
Chart 1: Frequency of olive oil consumption of participants

When asked how often they purchase olive oil, Chart 2 shows that more than 39% of respondents indicated that they purchase olive oil once in a month, with 27 percent indicating that they consume it at least twice in a week.
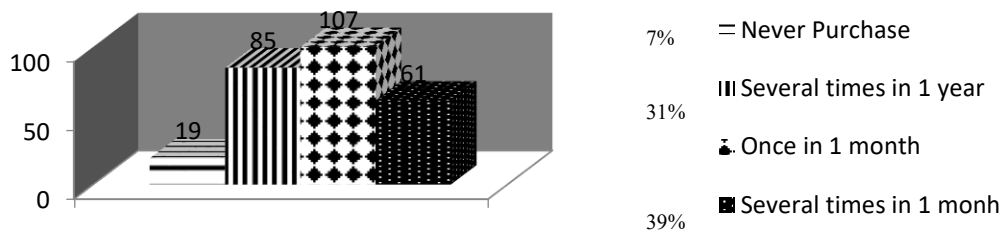

Chart 2: Frequency of purchasing olive oil of the participants

Although all the consumers participating in the survey consume olive oil, 7% of the respondents do not show any purchasing behavior.

The results of the questionnaire survey firstly extracted from VETİ system and then prepared results were given in Table 3. At the same time, Table 3 represents both the number of the participants that responded each question given at the top of each row and the percentage of the participants for every response.

Table 3: Questionnaire Survey Results

1. How often do you consume olive oil?	Number	%	2. How often do you purchase olive oil?	Number	%	3. How much would you like to pay for 1 liter of extra virgin olive oil?	Number	%
Once in a month	20	7	Never purchase	19	7	Less than 40 TL	64	23
Once in a week	14	5	Several times in 1 year	85	31	40-50 TL	75	28
Several times in a week	73	27	Once in 1 month	107	39	50-60 TL	89	33
Everyday	163	60	Several times in 1 month	61	22	60-70 TL	32	12
						More than 70 TL	11	4

4. How do you prefer to buy olive oil?	Number	%	5. Which types of olive oil do you prefer when purchasing olive oil?	Number	%	6. Have you tried flavored olive oil, would you prefer to consume it?	Number	%
From markets	96	35	Extra virgin	226	83	Never tried before	118	43
From local producers	114	42	Riviera	19	7	Tried, I do not prefer	51	19
From boutique shops	15	6	Refined	5	2	Tried, I do prefer	58	21
Does not matter	46	17	I do not care	21	8	I never heard	45	17

7. If you do not prefer flavored olive oil; what is your reason?	Number	%	8. How important is the olive oil packaging material for you?	Number	%	9. Which packaging material do you prefer when purchasing olive oil?	Number	%
I do not like the flavor	31	12	Does not matter	29	11	Plastic	10	4
Prices are expensive	15	6	Less important	35	13	Glass	183	68
Not used to that flavor	25	9	İmportant	133	49	Tin box	65	24
No definite judgment	193	73	Very important	74	27	It does not matter	13	5

10. Do the cold-press, lithographic labels on the olive oil packaging material affect your product preference positively?	Number	%	11. How often do you use olive oil as frying oil?	Number	%	12. How important is the color of olive oil to you in your product purchase preference?	Number	%
Yes	160	59	Never use it	91	34	Not important	20	7
No	46	17	Rarely	79	29	Relatively important	67	25
I have no idea	65	24	Generally	46	17	Important	117	43
			Always	65	20	Very important	67	25

13. How important is it to you that olive oil contains sediment?	Number	%	14. How important is it to you that olive oil leaves a burning sensation in the throat?	Number	%	15. How often do you use olive oil in its plain form (on a salad, by itself)?	Number	%
Never prefer	144	53	Never prefer	127	47	Never use it	15	6
Rarely prefer	37	14	Rarely prefer	50	19	Rarely	26	10
It does not matter	69	26	It does not matter	48	18	Frequently	98	36
I prefer it	20	7	I prefer it	45	17	Always	132	49

The data emerging from the survey showed that consumers were not conscious enough although they seemed like aware in some questions. In some questions participants did not know the reason for their correct answers or they act in accordance with habits. Therefore, the attitude and behavior of consumers regarding the use of olive oil is a common issue on the agenda. The survey presented to consumers a variety of reasons as to why they purchase olive oil and asked them to rate the importance.

According to the results of the study, extra virgin olive oil was the most frequently cited choice influencing consumer purchase of olive oil, with 80 percent indicating this factor to be extremely or very important. It is important that the preference for refined olive oil is quite low. It is understood that the consumer only cares about olive oil obtained by physical extraction. However, although 8% of them think that olive oil is beneficial and take it, it is also seen that they have no idea about which type is very useful. Or they just consume it purely culturally. When the participants are asked where they buy olive oil from, 35% of them want easy access and prefer markets, while those who buy from local producers are at a very high rate (40%). It is concluded that they do not have much doubt about the quality of the olive oils they buy. Furthermore, only 4% of the participants shows a buying attitude when 1 liter of olive oil is 70 TL or more. Other people don't want to pay very high prices.

Approximately more than half of respondents (68%) rated the color of the olive oil as important or very significant. The importance of color to consumers accounts for the fact that many companies offer olive oil in clear containers despite the fact that color is not a good predictor of quality. Package type was important for 27% and very important factor for 49% respondents. In the choice of product packaging, it was very important that it be in glass packaging. There are 7% who do not care about the color of olive oil, and 25% who partially care. The part that does not care about the packaging material or packaging may be in partnership with the 7% parts that does not care about the color of olive oil. Future studies could want to examine at the factors that influence consumers to choose particular packaging materials. Results of the survey showed that 24% of participants were unsure of the term "cold pressed," which is frequently used on labels for olive oil. Since almost all commercially available olive oil is extracted by centrifugation rather than using a press, the term "cold pressed" actually has no meaning in the manufacturing of modern olive oil. The majority of consumers seem to view "cold pressed" as a sign of quality, as evidenced by the large percentage of respondents (59%) who gave it a favorable response.

According to data obtained from the survey results, surveyed consumers pay attention to how much they would like to pay for 1 liter of olive oil when purchasing, the answer were detected as the option of '50-60' in the first place as 33% and, the option of '40-50 TL' in the second place as 27%. The survey concluded that 60% of the consumers have no information about flavored olive oil, however, it has been determined that their attitudes toward flavored oil comes from their limited knowledge about this issue. However, about 70% of the participants do not have a certain judgment about of consuming flavored olive oil. The significance of flavor may present a chance for high-quality producers to encourage consumers to taste the difference between fresh extra virgin olive oil and the inferior oil that many Turkish consumers are

accustomed to. When the participants were asked whether they would use olive oil as frying oil, 34% answered yes. They probably don't want to spend the oil they think is of good quality for frying, because the odor caused by the low burning point is uncomfortable. However, olive oil is very healthy in terms of being used as frying oil due to its high antioxidant capacity.

Most consumers who participated in the survey do not want olive oil to contain sediment, and 53% and even 14% of consumers rarely want it. However, in terms of quality, extra virgin olive oil containing sediment is an expected feature. Since the clearness of the vegetable oils gives the product appeal to the consumer, it is possible that we have a consumption habit as well as the quality of such a product. This may unwittingly lead us to the conclusion that there is a false consciousness of extra virgin olive oil among consumers. The burning sensation of the olive oil that leaves in the throat has not preferred by consumers at a very high rate (76%). However, this characteristic aroma and taste, which comes from the phenolic components contained in olive oil, should definitely be in a quality extra virgin olive oil. In addition, the vast majority of consumers (86%) prefer olive oil in its plain form for breakfast, not just for meals.

As seen in Table 1 that shows demographic information of consumers, a great majority of the participants were woman (62%), between the ages of 17-30, college student or be a graduate, mostly be food engineers (48%), and have educational status as postgraduate (62%) and more than half of the participants have an income level higher that 6000 TL. It has been revealed that almost in all the questions answered by the participants, there are statistically significant (p<0,05) relationships between demographic characteristics and whether olive oil issues are preferred or not. Table 4 and Table 6 show the relationship between gender and preferences for some olive oil-specific traits; educational status and preferences for some olive oil-specific traits, respectively. Table 5 and Table 7 represents the relationship between age and preferences for some olive oil-specific traits and purchasing behaviors; monthly income level and preferences for some olive oil-specific traits and purchasing behaviors, respectively.

Table 4: Relationship between gender and preference for some olive oil-specific traits

	Q 13				Q 14			
Gender	Never prefer	Rarely prefer	Does not matter	Prefer it	Never prefer	Rarely prefer	Does not matter	Prefer it
Woman	96 [a]	27 [a]	34 [a]	12 [a]	87 [a]	37 [a]	23 [a]	22 [a]
Man	48 [a]	10 [a]	35 [b]	29 [b]	48 [a]	13 [a]	25 [b]	23 [b]
	x^2:8,007; df:3; p:0,046				x^2:12,699; df:3; p:0,005			

* Different letters show the statistically differences

As seen in Table 4, according to the Chi square test results there are statistically significant differences between man and woman participant and their responses to the whether they prefer olive oil contains sediment and leaves a burning sensation after consumption or not. Man, participants prefer sediment in olive oil more that women. And also, the burning sensation in the throat is important for man than woman.

Table 5: Relationship between age and preferences for some olive oil-specific traits and purchasing behaviors

Age	Q 1				Q2			
	once in a month	once in a week	several times in a week	everyday	Never purchase	Several times in 1 year	Once in 1 month	Several times in 1 mnth
18-30	18 [a]	10 [a]	44 [a]	55 [a]	11 [a]	45 [a]	54 [a]	19 [a]
31-50	2 [b]	2 [b]	26 [a]	77 [b]	7 [a]	34 [a]	36 [a]	30 [b]
51 & above	0 [b]	2 [a,b]	3 [b]	31 [b]	1 [a]	6 [a]	17 [a]	12 [b]
	C^2:39,127; df:6; p:0,000				C^2:12,865; df:6; p:0,045			
	Q 4				Q 5			
Age	From markets	From local producers	From boutique shops	Does not matter	Extra virgin	Riviera	Refined	I do not care
18-30	55 [a]	58 [a]	4 [a]	11 [a]	92 [a]	15 [a]	4 [a]	17 [a]
31-50	24 [b]	43 [a]	10 [b]	30 [b]	101 [b]	3 [b]	0 [a]	3 [b]
51 & above	17 [a]	13 [a]	1 [a,b]	5 [a,b]	33 [b]	1 [a,b]	1 [a]	1 [a,b]
	C^2:27,144; df:6; p:0,000				C^2:24,413; df:6; p:0,000			
	Q 11				Q 12			
Age	Never use it	Rarely	Generally	Always	Not important	Relatively important	Important	Very important
18-30	63 [a]	40 [a]	13 [a]	12 [a]	3 [a]	32 [a]	59 [a]	34 [a]
31-50	21 [b]	33 [a]	22 [b]	31 [b]	11 [b]	50 [a]	43 [a]	23 [a]
51 & above	7 [b]	6 [a]	11 [b]	12 [b]	6 [b]	5 [a]	15 [a]	10 [a]
	C^2:42,626; df:6; p:0,000				C^2:13,269; df:6; p:0,039			
	Q 13				Q 14			
Age	Never prefer	rarely prefer	It does not matter	i prefer it	Never prefer	rarely prefer	It does not matter	i prefer it
18-30	84 [a]	14 [a]	22 [a]	7 [a]	64 [a]	31 [a]	17 [a]	15 [a]
31-50	43 [b]	18 [a]	35 [b]	11 [a]	39 [b]	19 [a]	26 [b]	23 [a]
51 & above	17 [b]	5 [a]	12 [b]	2 [a]	24 [a]	0 [b]	5 [a,b]	7 [a,b]
	C^2:17,391; df:6; p:0,008				C^2:22,588; df:6; p:0,001			

* Different letters show the statistically differences

As seen in Table 5, there are statistically significant differences between age and preferences for some olive oil-specific traits and purchasing behaviors of consumers. Young participants prefer olive oil less for daily use. Assuming that the individuals in this group are students, the result is considered normal. Particularly, the participant aged 31-50 can pay more for 1 liter of olive oil. In addition, the place where participants between the ages of 31-50 prefer to buy olive oil differs according to the other two groups. Participants between the ages of 18-30 differ from the other two groups in that they are not very aware of what type of olive oil they buy when purchasing olive oil.

Table 6: Relationship between Education status and preference for some olive oil-specific traits

Education Status	Q 5				Q 13			
	Extra virgin	Riviera	Refined	I do not care	Not important	Relatively important	Important	Very important
High school	7 [a]	1 [a]	0 [a]	2 [a]	2 [a]	2 [a]	6 [a]	0 [a]
Undergraduate	67 [a]	9 [a]	3 [b]	14 [a]	59 [b]	9 [b]	19 [b]	5 [b]
Postgraduate	152 [b]	9 [a]	2 [a,b]	5 [b]	83 [b]	26 [a]	44 [b]	15 [b]
	c^2:19,203 df;6; p:0,004				c^2:13,571 df:6; p:0,035			

* Different letters show the statistically differences

According to the Chi-square test results, Table 6 shows there are statistically significant differences between education status of the participant and their responses to the which type of olive they prefer to buy and whether they prefer olive oil contains sediment or not. As seen in Table 5, postgraduate participants are clearer in preferring extra virgin olive oil. Also, this group noted that the burning sensation of olive oil in the throat is very important and differ from the other groups in this regard.

Table 7: Relationship between monthly income and preferences for some olive oil-specific traits and purchasing behaviors

Income Level	Q 1				Q 2			
	Once in a month	Once in a week	Several times in a week	Everyday	Never purchase	Several times in 1 year	Once in 1 month	Several times in 1 mnth.
0-2500 TL	8 [a]	1 [a]	15 [a]	18 [a]	4 [a]	14 [a]	15 [a]	9 [a]
2501-5000 TL	5 [a]	5 [b]	10 [b]	18 [a]	5 [b]	11 [a]	17 [b]	6 [a]
5001-15000TL	6 [b]	4 [a]	32 [a]	55 [a]	7 [b]	31 [a]	40 [b]	20 [a]
>15000 TL	1 [b]	4 [a]	16 [a,b]	72 [b]	3 [b]	29 [a]	35 [a]	26 [b]
	c^2:33,921; df:9; p:0,000				c^2:12,865; df:6; p:0,045			
	Q 5				Q 11			
	Extra virgin	Riviera	Refined	I do not care	Never use it	Rarelly	Generally	Always
0-2500 TL	30 [a]	5 [a]	1 [a]	6 [a]	21 [a]	12 [a]	2 [a]	7 [a]
2501-5000TL	26 [a]	4 [a]	0 [a]	8 [b]	16 [a]	14 [b]	3 [a]	5 [a]
5001-15000TL	83 [b]	6 [b]	3 [a]	6 [a]	26 [b]	29 [a]	25 [b]	18 [a]
>15000 TL	87 [b]	4 [b]	1 [a]	1 [a,b]	28 [b]	24 [a]	16 [b]	25 [a]
	c^2:24,627; df:9; p:0,003				c^2:20,257; df:9; p:0,016			
	Q 3					Q 15		
	Less than 40 TL	40-50 TL	50-60 TL	60-70 TL	More than 70 TL	Never use it	Rarely	Frequently	Always
0-2500 TL	12 [a]	13 [a]	8 [a]	9 [a]	0 [a]	6 [a]	5 [a]	13 [a]	18 [a]
2501-5000 TL	16 [a]	12 [a,b]	7 [b]	2 [a,b]	1 [a,b]	3 [a]	7 [b]	14 [a]	15 [a]
5001-15000TL	26 [a]	18 [a]	36 [a]	11 [a]	7 [b]	3 [b]	12 [a]	42 [b]	40 [a]
>15001 TL &	10 [a]	32 [b]	38 [b]	10 [a,b]	3 [a,b]	3 [b]	2 [a,b]	29 [a]	59 [b]
	c^2:34,019; df:12; p:0.000					c^2: 16,789; df:9; p:0.038		

* Different letters show the statistically differences

As seen in Table 6, there are statistically significant differences ($p<0.05$) between monthly income level and preferences for some olive oil-specific traits and purchasing behaviors of consumers. As income increases, consumption of olive oil also increases. Likewise, there was a change in the frequency of consumers purchasing olive oil with the increase in income. With the increase in income level, there has been an increase in consumers' evaluation of olive oil as frying oil. Contrary to what is generally known, it is deduced that when consumers do not prefer olive oil as frying oil, it is not due to its low smoke point, but because of their own purchasing power.

4   CONCLUSION

This study offers insights into 272 Turkish customers' behavior regarding olive oil consumption by looking at their opinions and attitudes. According to survey findings, customers need more precise information to make the best possible choice of olive oil. The results also show that consumers overestimate their knowledge of olive oil; they cook with it despite the widespread belief that it has a low smoke point. Consumers are generally aware of the benefits of olive oil intake and the factors to take into consideration when making purchases, although these preferences can be influenced by purchasing power and income status of consumers. Olive oil is used in the frying process by almost half of customers, which may present manufacturers with a chance to start marketing olive oil as a tasty and nutritious frying choice. The olive oil producers have the opportunity to change their marketing strategy to help consumers to make more educated decisions when buying olive oil. Future studies might examine usage, preference and purchasing behaviors in more detail as well as provide a more in-depth understanding of consumer demographics. Moreover, gaining customer views on the value of price, package type, flavor, color and scent would also be beneficial.

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