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İ Ç İ N D E K İ L E R / C O N T E N T S

Consumer Expectation and Preference of Ezine Cheese

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The objective of this study was to determine the preferences and purchasing behaviors of consumers of Ezine cheese. Consumer acceptance tests on two representative Ezine cheeses and face to face interviews were conducted in Çanakkale-Turkey. Data provided from both tests were evaluated by *Analysis of Variance* and *K-Means Cluster Analysis*. Our data showed that Ezine cheese is mainly preferred for breakfast. Most consumers purchased Ezine cheese at least once a week. Our data detected a positive relationship between consumer age and acceptance of Ezine cheese. The age group 60-69 years old most preferred both cheeses. Statistical analysis clustered the Ezine cheese consumers into four groups, and significant differences were observed among the clusters with regards to consumption and purchasing behaviors. Cheese flavor and overall liking appear to be the most important factors for consumption. As a result, habits of cheese consumption, benefits of dairy products, and enhancement of breakfast choices influenced consumer decisions for purchasing Ezine cheese.

Keywords: Ezine cheese, consumer behavior, consumer preferences

Ezine Peynirinde Tüketici Tercihi ve Beklentisi

Bu çalışmanın amacı Ezine peynirinin tüketici beğenisini ve satın alma davranışlarını belirlemektir. Çanakkale kent merkezinde yaşayan tüketicilere seçilen iki peynir örneğinde tüketici testi ve yüz yüze anket çalışması uygulanmıştır. Her iki uygulamadan elde edilen veriler, ayrı ayrı varyans analizi ve kümeleme analiz yöntemleriyle incelenmiştir. Elde edilen sonuçlar göstermiştir ki Ezine peyniri çoğunlukla sabah kahvaltıda tercih edilmektedir. Tüketicilerin çoğunluğu Ezine peynirini haftada en az bir kez satın almaktadır. Ayrıca tüketici yaşı ve Ezine peyniri beğenisi arasında pozitif ilişki olduğu belirlenmiştir. 60-69 yaş grubundaki tüketiciler her iki peyniri de tercih etmişlerdir.

İstatistiksel analizler sonucunda peynir tüketicileri dört kümeye ayrılmış olup tüketim ve davranış özellikleri bakımından kümeler arasında pozitif ilişki olduğu ortaya çıkmıştır. Peynirin lezzeti ve genel beğeni tüketimi etkileyen önemli faktörlerdir. Sonuç olarak tüketim alışkanlıkları, süt ürünlerinin yararları ve kahvaltı seçeneklerini artırma, Ezine peyniri alımında tüketici kararını etkilemektedir.

Anahtar kelimeler: Ezine peyniri, tüketici davranışı, tüketici tercihi

Introduction

Due to high nutritional value, cheese is an important food for human nutrition. The history of cheese has not exactly been known. It has been produced for about 9000 years (Fox et al. 2000). Over 1000 cheese varieties are produced around the world. There are 40-50 cheese varieties in Turkey. The most popular cheeses in Turkey are Turkish White cheese (Beyaz Peynir), Kaşar, Tulum, Mihalic, Otlu, Örgü, Dil, and Civil cheeses. Among these cheese varieties, Turkish White, Kaşar and Tulum cheeses are produced in large scale. Turkish White cheese takes the first place in cheese consumption among Turkish consumers (Hayaloglu et al. 2002; Sert, 2004). The Turkish Ministry of Development stated that 265,000 tons of White cheese was produced in 2005 and its production accounts for approximately 60-80% of total cheese production in Turkey (Anonymous, 2007a).

Ezine cheese, which is one of the traditional cheeses in Turkey, is a full fat, white cheese. It is produced from a mixture of goat milk, sheep milk, and cow milk provided from the towns and villages located in the north and west of the Mount Ida. It has a protected geographical indication. Ezine cheese is manufactured without any starter culture and is aged, in brine, in 20 kg tinplate containers for about twelve months. It is estimated that 4,000 tons of Ezine cheese is produced annually. It has made a major contribution to the local and regional economy

(Karagül Yüceer et al. 2007; Karagül Yüceer et al. 2009; Diler et al. 2011).

Analysis of consumers' behavior is a more sophisticated and complex phenomenon. It allows for a very effective approach for companies to create marketing strategies for their products (Anonymous, 2011; Blackwell et al. 2001; Solomon et al. 2006). Consumer studies on several food products such as edible fats/oils (Daştan et al. 2009), sharp Cheddar cheese (Drake et al. 2009), whole and refined wheat bread (Bakke and Vickers, 2007), traditional Spanish cheeses (Barcenas et al. 2001), and processed meats (Huang and Fu, 1995) were conducted by many researchers. The main objectives of these consumer studies were to understand and determine product properties (price, sensory attributes, quality etc.) and consumer characteristics (sociodemographic situation, choices, attitudes etc.). Consumer studies on traditional foods are limited because of their economical status. However, nowadays traditional foods have become commercial and strong branded foods. Consumers often consider traditional foods as healthy foods so consumer demands for traditional foods have increased (Anonymous, 2007b). The objective of this study was to determine consumer behaviors related to consumer preference and purchase attitudes for Ezine cheese.

Materials and Method

Cheese samples

Five cheeses in 5 kg tinplate packages were obtained from different dairy plants located in Ezine-Canakkale. The samples were aged for 12 months. Two out of five cheeses were used for sensory evaluation. Representative two cheese samples were selected by three expert panelists. The samples were stored at +10oC and analyzed in our laboratory in terms of chemical properties.

Chemical analysis

General composition of Ezine cheese was determined. For this purpose, titratable acidity (lactic acid, %), pH, dry matter (%), salt (%) and ash (%) content of the cheeses were determined (Bradley et al., 1992). Fat content was determined by Gerber-van Gulik method (NEN 1969). Total nitrogen contents (TN) of the samples were determined by micro-Kjeldahl method (IDF, 1993).

Consumer acceptance test

The cheese samples were evaluated for sensory properties of appearance, aroma, taste, firmness, salty and fatty flavors on a 7 point hedonic scale anchored on the left with "1: dislike extremely" and on the right with "7: like extremely" (Meilgaard et al. 1999). The cheese samples (2 x 2 x 2 cm) were served on disposable plates labeled with random 3-digit codes. Besides consumer acceptance tests, consumers also answered a survey consisting of fifteen questions about demographic information, purchasing, and consumption habits of Ezine cheese.

Analysis of consumer behavior

Consumer behavior for Ezine cheese was evaluated by face to face interview. The face to face survey was with 422 consumers. The participants of survey were volunteers living in Çanakkale-Turkey. The number of participants was determined based on the method recommended by Bitinas (1974) which depends on the population of Çanakkale. The survey consisted of two different parts, with a total of 27 questions. While the first part of the survey was about demographic and socioeconomic status of consumers, the second part was related to demands, preferences, and consumer expectations for Ezine cheese. The participants answered questions in the survey by using likert scale (Likert, 1932). The questionnaire form was shown in Figure 1.

DEMOGRAPHIC QUESTIONS

How old are you?......
How many people are living in your family? ……
What is your education degree? (1) Primary (2) Elementary (3) High (4) Bachelor (5) Master, PhD
What is your occupation status? (1) Full time (2) Part time (3) Retired (4) Student (5) Unemployed
What is your family income monthly? (1) <300 Euro (2) 300-650 Euro (3) 650-1300 Euro (4) >1300 Euro

CONSUMPTION AND PURCHASING BEHAVOIR QUESTIONS

Do you eat Ezine cheese ? (0) Yes (1) No
How many people do you purchase Ezine cheese in you family?......
How many people consume Ezine cheese in your family? (1) 1 person (2) 2 people (3) 3 people (4) 4 people (5) >5 people
Do you prefer only Ezine cheese for your cheese consumption? (1) Yes (2) No, I can prefer others cheeses
Which frequency do you purchase Ezine cheese? (1) Once a week (2) More than once per month (3) Once a month (4) More than once per year
What is your consumption reason for Ezine cheese?
(1) Eating habit (2) Liking and taste (3) Enhancing meal choices (4) Suggestion by a friend (5) Nutritional value for child and younger
What is your purchasing portion of Ezine cheese? (1) 100-250g (2) 251-500g (3) 501-1000g (4) 2-3 kg (5) 5 kg (6) 20kg
Which mealtime do you prefer to consume Ezine cheese?
(1) Only Breakfast (2) Only Lunch (3) Only Appetizer (4) Breakfast and Lunch (5) Breakfast and Diner (6) Every Mealtimes
What is your preference of price (Euro/kg) for Ezine cheese?
(1)<3.38 (2) 3.91-4.66 (3) 5.08-5.94 (4) 6.35-7.20 (5) >7.62
Where do you purchase Ezine cheese?
(1) Local market (2) Dairy farm (3) Familiar Dairy Farmer (4) Grocer market (5) Shopping center
What kind of packaging do you prefer when you buy Ezine cheese?
(1) Plastic bag (Nylon) (2) Shrink wrapped (3) Tinplate (4) Plastic package (5) Vacuum package

CONSUMER LIKING AND FACTORS INFLUENCING PURCHASE

Salty taste liking	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Fatty flavor liking	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Cheese flavor liking	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Texture liking (firmness)	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Overall liking	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much

Figure 1. The questionnaire form for Ezine cheese

Reason for eating cheese: nutritional value :

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Adequacy of price:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Confidence for hygiene:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Confidence for health property:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Trust for quality:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

CONSUMPTION AND PURCHASING DRAWBACKS

Salty taste	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Cheese flavor	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Fatty flavor	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much
Overall liking	(1) Dislike very much	(2) Dislike	(3) Neither like nor dislike	(4) Like	(5) Like very much

Health property:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Price:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Unconfidence for hygiene:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Unconfidence for health property:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Lack of quality:

(1) Not at all important reason	(2) Not important reason	(3) Neither important nor unimportant reason	(4) Important reason	(5) Very important reason

Figure 1. The questionnaire form for Ezine cheese

Statistical analysis

Analysis of variance (One way ANOVA) and Mann-Whitney U tests were applied for consumer acceptance data to determine the differences and preferences. Duncan's Multiple Range test was performed for mean separations. Furthermore, K-Means Cluster Analysis was used for consumer survey to evaluate behavior of consumer purchase and attitudes for Ezine cheese (Sheskin, 2004). SPSS for Windows (version 13.0 version 13; SPSS Institute Inc., Chicago, IL) was used for all statistical analysis.

Results and Discussion

Chemical properties

Chemical composition of the cheese samples was shown in Table 1. In general, cheeses had similar composition, but some differences were observed between cheeses. Sample B had higher fat and salt contents, while sample A had higher lactic acid (%) and pH values. Chemical compositions of the cheeses were within the normal ranges stated in previous studies for Ezine cheese (Karagül Yüceer et al. 2009; Tuncel et al. 2010; Karagül Yüceer et al. 2008). Tuncel et al. (2010) indicated that the chemical composition of Ezine cheese aged 12 months was 1.17 % lactic acid, 5.03 pH, 23.75 % fat, 48.13 % dry matter, 4.63 % salt, and 5.66 % ash. In another study by Karagül Yüceer et al. (2008), the chemical composition and sensory properties of Ezine cheeses were determined. The researchers determined that titratable acidity, dry matter, fat in dry matter, salt in dry matter of a representative sample of twenty two Ezine cheeses ranged between 0.73-2.13%, 43.10-51.78%, 49.29-58.78%, and 5.61-11.87%, respectively.

Consumer Acceptance

Consumer acceptance tests were conducted on 106 consumers aged between 15 to 69 years old in the present study. 51% of the participants were female. The demographic data for consumers surveyed in the consumer acceptance tests, in addition to, purchasing and consumption percentages of Ezine cheese were shown in Table 2.

It was determined that 55.7% of the participants consumed Ezine cheese mostly at breakfast, while 22.6% of the participants consumed Ezine cheese at breakfast and dinner. In other words, most of the Turkish families prefer to consume white cheese at breakfast. A total of 1.9% of the participants consumed Ezine cheese as appetizer. When the purchasing and consumption frequency were examined, it was found that 54.8% of the participants consumed Ezine cheese once a week and more than once a month. However, 19.8% of the participants consumed Ezine cheese more than once per year. 44.3% of participants reported that they purchased Ezine cheese in shopping centers in Çanakkale, 20.8% of the participants purchased the cheese from local markets or dairy farms. In general, 500 g-1.0 kg of Ezine cheese was purchased by 52.8% of the participants.

Table 1. Chemical properties of Ezine cheese samples

Chemical Properties (Mean± Standard Deviation)	Cheese Samples	
	A	B
pH	5.26±0.01	4.75±0.01
Lactic acid %	1.12±0.02	1.07±0.05
Fat (%)	24.75±0.35	27.10±0.14
Dry matter (%)	50.82±0.35	50.00±0.00
Total nitrogen (%)	2.76±0.01	2.66±0.10
Salt (%)	4.46±0.42	5.97±0.67
Ash (%)	4.87±0.01	4.80±0.02

Table 2. Ezine cheese purchasing and consumption data for the consumer participated in consumer acceptance test (n=92).

Demographic Data	Percent (%)	Purchasing and Consumption Behavior	Percent (%)
Gender		Number of Person who consumed Ezine cheese in the Family	
Male	49.1	1	9.4
Female	50.9	2	34.0
		3	20.8
		4	26.4
		≥5	9.4
Education		Purchasing Frequency of Ezine cheese	
Primary School	6.6	Once a week	27.4
Elementary School	0.9	More than once per month	27.4
High School	9.4	Once a month	25.5
Bachelor	49.1	More than once per year	19.8
Master	34.0		
Occupation		Purchasing portion	
Full-time	44.3	100-250 g	5.7
Part-time	0.9	251-500 g	32.1
Retired	9.4	501-1000 g	52.8
Student	44.3	2-3 kg	8.5
Unemployed	0.9	5 kg	0.9
Income (Monthly)		Consumption time of Ezine Cheese	
<300 Euro	14.2	Only Breakfast	55.7
300-650 Euro	30.2	Only Lunch	0.9
650-1300 Euro	33.0	Only appetizer	1.9
>1300 Euro	22.6	Breakfast and Lunch	4.7
		Breakfast and dinner	22.6
		Every Mealtimes	14.2
		Purchasing of Place	
		Local Market	20.8
		Dairy Farm	20.8
		Familiar Dairy Farmer	2.8
		Grocer Market	11.3
		Shopping Center	44.3

It was determined that 13.4% of participants did not have any idea about the price of Ezine cheese, while 52.8% of participants bought Ezine cheese for 4-5 Euros/kg cheese. Çelik-Ates and Ceylan (2010) investigated the effects of socioeconomic factors on the consumption of some dairy products in Van (Eastern Turkey). They reported that traditional herby cheese (Van Otlu Cheese) was consumed by 91.62 % of the population in urban and rural areas of Van and consumption of herby cheese was not affected by socioeconomic differences in rural and urban areas. It was determined that the average consumption of herby cheese was 8.55 kg/month in both areas. Rural consumers cited price as reason for purchasing the herby cheese, while quality and cleanliness of herby cheese were the most important factors for urban consumers. In a study by Teng et al (2004), it was determined that 56% of the consumers lived in Ontario-Canada preferred to purchase cheese at the farmers market and 34% of consumers purchased cheese at a grocery store. Consumers who purchased cheese from farmers' market indicated that the reasons of preference were the market's selection (60 %), freshness (28 %) and flavor (28 %) of the cheeses. In addition, consumers purchased cheese from the farmers' market weekly and monthly at the rate of 32% and 26%, respectively. Hysen et al. (2008) investigated consumer behaviors for dairy products in Kosovo.

It was determined that the price of the product was a very important evaluation criteria for consumers in the case of white cheese and yogurt. The researchers found that trust, quality, price, and origin of the product were more effective factors for the consumption of dairy products for consumer. Sensory scores of Ezine cheese samples in terms of consumer groups were shown in Table 3.

It was determined that liking and consumer acceptance of Ezine cheese was related to consumer ages. Consumers aged 60-69 years old liked both Ezine cheeses compared to other age groups. Consumers aged 60-69 years gave higher taste and flavor scores for Ezine cheese than younger consumers (15-19 ages). These results may be related to the milk source of Ezine cheese. Ezine cheese is made from 45-55% sheep milk, at least 40 % goat's milk, and at most 10-15% cow milk; and, it has a sharp flavor and taste (Karagül Yüceer et al. 2009). Therefore, most younger people may not prefer these types of sheep milk cheeses due to their flavor profile. Similar results were reported by Murray and Delahunty (2000), Ryfell et al. (2008) and Murphy et al. (2004). Murray and Delehunty (2000) investigated consumer preference for the sensory and packaging attributes of Cheddar cheese. They found that consumers' age, maturation of cheese, firmness, saltiness, and sour attributes were significant on consumer preference of Cheddar cheese. Ryfell et al. (2008) evaluated consumer acceptability of Swiss goat and sheep cheeses with 688 consumer participants. They found that over 70% and 80% of consumers did not appreciate strong animalic flavors in goat and sheep cheeses, respectively. It was determined that the buying frequency of goat cheeses was higher than that of sheep cheeses by consumers due to traditional eating habits in Switzerland. Ritvanen et al. (2005) determined the acceptance of Havarti-type, Edam, and Emmental cheeses by consumers in Finland. The researchers found that the pleasantness of mouth feels and flavor had more effect on consumer liking of the cheeses than pleasantness of appearance. It was also found that there were no differences in liking full fat and reduced fat types of the cheeses by consumers.

Consumer behavior

In the second part of this study, a consumer behavior survey without sensory evaluation was conducted by 422 consumers who lived in Çanakkale. 48.6% of respondents were female and 51.4% were male. The demographic data for consumers, purchasing, and consumption percentages of Ezine cheese were shown in Table 4.

Table 3. Sensory scores of Ezine cheese samples in terms of consumer groups

Cheese Samples	Sensory Properties	Consumer Groups (Mean ± Standard Deviation)				*P* value
		1	2	3	4	
A	Appearance	6.00±0.84	5.34±1.12	5.61±0.96	6.00±1.61	0.122
	Firmness	5.93±0.79^{A}	4.96±1.12^{B}	5.97±1.04^{A}	6.00±1.26^{A}	0.001
	Taste	4.80±1.78^{B}	5.00±1.53^{B}	5.73±1.30^{AB}	6.18±1.25^{A}	0.024
	Aroma/Flavor	4.47±1.72^{B}	4.87±1.74^{BC}	5.61±1.24^{AB}	6.18±1.168^{A}	0.001
	Fatty flavor	4.47±1.80	5.09±1.48	5.39±1.47	5.64±1.12	0.209
	Salty	4.47±1.40	4.83±1.52	5.45±1.39	5.27±1.42	0.118
	Overall	5.13±1.30^{B}	5.17±1.25^{B}	5.82±1.18^{AB}	6.00±1.08^{A}	0.032
B	Appearance	5.53±0.99^{AB}	5.13±1.01^{B}	5.67±0.99^{AB}	6.18±1.08^{A}	0.022
	Firmness	5.80±1.01	5.06±1.35	5.39±1.11	5.45±0.93	0.192
	Taste	4.73±1.66	5.06±1.58	5.18±1.40	5.82±1.32	0.312
	Aroma/Flavor	3.80±1.52^{B}	4.60±1.66^{B}	4.76±1.41^{B}	5.91±1.04^{A}	0.002
	Fatty flavor	5.27±1.38^{B}	5.06±1.43^{B}	5.64±1.19^{AB}	6.18±0.75^{A}	0.009
	Salty	4.00±1.69	4.83±1.59	4.52±1.58	5.18±1.60	0.271
	Overall	4.93±1.38	5.15±1.35	5.27±1.25	5.73±0.90	0.288

A-C Means followed by different superscript letters represents significant differences in the groups for each chemical properties of Ezine cheese samples (P<0.05). Group 1:15-19 ages, Group 2:20-39 ages, Group 3: 40-59 ages, Group 4:60-69 ages

It was determined that 72.7% of respondents (n=307) consumed Ezine cheese, while 27.3% of respondents (n=115) indicated that they did not consume Ezine cheese because of its flavor characteristics. Most of the respondents (62.5%) mentioned that they consumed Ezine cheese at breakfast, while 18.2% of respondent consumed Ezine cheese in every meal. It was indicated that 37.8% of respondents consumed Ezine cheese because of eating habits, but 28% of the respondents reported that they consumed Ezine cheese due to its flavor (Table 4). Among consumers' liking scores, several linear relationships were observed (Spearman rank's correlation, $P<0.01$). Overall liking was correlated with cheese flavor liking ($r = 0.65$), salty taste ($r=0.55$) and texture liking ($r=0.51$). Good linear correlation was observed between fatty flavor liking and cheese flavor liking ($r=0.54$) (data not shown). Similar results were observed for sharp Cheddar cheese (Drake et al. 2009), mild Cheddar cheese (Drake et al. 2008), and Swiss type cheese (Liggett et al. 2008).

Table 4. Purchasing and consumption behavior of consumer surveyed (n=422)

Demographic Data	Percent (%)	Purchasing and Consumption Behavior	Percent (%)
Gender		Purchasing Frequency of Ezine cheese	
Male	48.6	Once a week	43.0
Female	51.4	More than once per month	32.6
		Once a month	19.5
		More than once per year	4.9
Education		Purchasing portion	
Primary School	21.6	100-250 g	7.5
Elementary School	10.9	251-500 g	20.5
High School	34.8	501-1000 g	52.4
Bachelor	23.9	2-3 kg	14.3
Master	8.8	5 kg	4.2
		20kg	1.0
Occupation		Consumption time of Ezine Cheese	
Full-time	53.1	Only Breakfast	62.5
Part-time	5.9	Only Lunch	0.3
Retired	15.9	Only appetizer	1.6
Student	15.4	Breakfast and lunch	7.8
Unemployed	9.7	Breakfast and dinner	9.4
		Every Mealtimes	18.2
Income (Monthly)		Purchasing Place	
<300 Euro	17.1	Local Market	21.5
300-650 Euro	43.4	Dairy Farm	15.6
650-1300 Euro	28.2	Familiar Dairy Farmer	2.0
>1300 Euro	11.4	Grocer Market	15.3
		Shopping Center	45.6
Ezine Cheese Consumption		Packaging preferences	
Consume	72.7	Plastic bag (Nylon)	15.6
Do not consume	27.3	Shrink wrapped	23.7
Consumption Reason of Ezine Cheese		Tinplate	19.7
Eating habit	37.8	Plastic package	12.3
Liking flavor and taste	28.0	Vacuum package	1.4
Enhancing meal varieties	14.0		
Suggestion by a friend	10.1		
Nutritional value for child and younger	2.6		
Others	7.5		

In the present study, 43% of respondents purchased Ezine cheese once a week and 32.6% of respondents expressed that their purchasing frequency of Ezine cheese was more than once a month. 45.6% of participants reported that they purchased Ezine cheese in shopping centers, while 21.5% of them purchased Ezine in local markets. Similar to consumer acceptance tests, 500 g-1.0 kg of Ezine cheese was purchased by most of the respondents (52.4%). This result showed that consumers prefer to purchase cheese at their weekly consumption rate as a traditional consumer habit and they did not desire to keep cheese in refrigerator for a long time. In addition, shrink wrapped, tinplates, and plastic bags as packaging materials were preferred by 23.7%, 19.7% and 15.6% of respondents, respectively. Murphy et al. (2004) identified that packaging is the most important factor for Irish farmhouse cheese for consumers. However, Hysen et al. (2008) reported that packaging did not have any effect on the cheese purchasing behavior of consumers in Kosovo.

According to K-Means cluster analysis results, four consumer (n=307) clusters were identified for Ezine cheese. The characteristics of the consumer clusters were shown in Table 5. The cluster relationships were diverse in terms of the sociodemographic situation of consumers. When socioeconomic situations of clusters were examined, clusters one and three consisted of younger and older consumers, respectively. Specifically, clusters one, two, and four include consumers who have higher or graduate level education; cluster three includes consumers at the primary or secondary level education. Clusters two and three consisted of middle aged consumers and, clusters two and four include high-middle socioeconomic level consumers; while, lower-middle and low socioeconomic level consumers coincided in clusters one and three, respectively.

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Table 5. Characteristics of consumer clusters for Ezine cheese (n=307)

Variables	Clusters				P value
	1 (96)	2 (69)	3 (37)	4 (105)	
Demographic Data					
Gender	1	2	1	2	0.02
Age (mean)	22	49	64	36	0.01
Family Size	3.60	3.49	3.22	3.44	0.41
Education	3.35	2.91	2.08	3.21	0.01
Occupation	2.46	2.01	3.22	1.49	0.01
Income-Monthly	2.44	2.58	1.92	2.52	0.01
Consumption and Purchasing Behavior					
Number of Person who purchase Ezine cheese in family	1	1	1	1	0.01
Number of person who consumed Ezine cheese in family	3.20	3.25	3.19	3.12	0.94
Preferences for only Ezine cheese	0	0	0	0	0.24
Purchasing period	3.0	2.9	3.1	2.9	0.50
Reason for eating Ezine cheese	2.4	2.4	2.1	2.9	0.01
Purchasing frequency of Ezine cheese	1.9	1.8	2.1	1.8	0.45
Purchasing portion	2.9	3.0	3.2	2.7	0.01
Consumption time	3.3	3.6	3.5	2.5	0.04
Preferences of price	2.0	2.2	2.3	2.1	0.33
Consumer Liking and Factors Influencing Purchase					
Salty taste liking	3.7	3.8	3.9	3.7	0.41
Fatty flavor liking	4	4	4	4	0.04
Cheese flavor liking	3.8	4.1	4.1	4.1	0.36
Texture liking (firmness)	3.9	4.0	4.3	4.1	0.05
Overall liking	4.2	4.3	4.4	4.2	0.50
Reason for eating cheese: nutritional value	3.8	3.6	3.9	4.0	0.05
Adequacy of price	3.2	3.4	4.0	3.6	0.01
Confidence for hygiene	4.1	4.2	4.3	4.3	0.31
Confidence for health property	4.2	4.3	4.4	4.2	0.73
Trust for quality	4.1	4.1	4.3	4.2	0.62
Consumption and Purchasing Drawbacks					
Salty taste	3.5	3.7	3.9	3.6	0.17
Cheese flavor	3.8	4.0	4.2	3.7	0.02
Fatty flavor	3.6	4.0	4.0	3.8	0.06
Overall liking	4.0	4.2	4.4	4.0	0.02
Health property	3.0	2.9	3.1	3.0	0.84
Price	3.0	3.5	4.2	3.9	0.01
Unconfidence for hygiene	3.3	3.0	3.0	3.2	0.62
Unconfidence for health property	3.2	3.0	3.0	3.2	0.84
Lack of quality	3.3	3.1	2.89	3.4	0.30

Four cheese consumer clusters were identified. The clusters were major cured cheese consumers, medium consumers, major fresh cheese consumers, and major fresh and cured cheese consumers. The researchers indicated that the clusters were differentiated by the level of consumption of fresh cheese and cured cheese, the family unit size, the price paid for cheese, type of fresh cheese eaten, and cheese eating as a dietary habit. In a study by Murphy et al. (2004), two consumer clusters were identified for Irish farmhouse cheese. It was determined that packaging was highly important for some consumers (cluster one), while cheese flavor, milk pasteurization, and the availability of nutritional and other information of cheese were more important for other consumers (cluster two). Price and texture properties of Irish farmhouse cheese were less important attributes for consumers in both clusters. Moreover, Drake et al. (2008), evaluated consumer preferences for mild Cheddar cheese flavors with sensory panels and consumer tests (n=215). They identified four consumer clusters for mild Cheddar cheese. The researchers indicated that flavor and color influenced the preference of mild Cheddar cheese by consumers. For example, some consumers (cluster two) liked the moderate whey flavor, sour taste, and orange color of Cheddar cheese. Consumers in cluster three preferred mild Cheddar cheese with cooked/milky, whey, milk fat flavor, low level of brothy or sulfur flavor, and sour taste. Moreover, white colored Cheddar cheese was also preferred by some consumers (cluster four).

Conclusion

In this research, the relationship between consumer behaviors and attitudes, as well as, consumer preference and purchasing, of Ezine cheese was studied. It was determined that there were some differences between cheeses in terms of some chemical properties such as fat and salt contents. This may be related to differences in milk source and traditional production steps of Ezine cheese that applied to local producers. It was determined that most consumers consumed Ezine cheese at breakfast. Consumers purchased it once a week and more than once a month. Liking and consumer acceptance of Ezine cheese related to consumer ages. Consumers aged 60-69 years old liked both Ezine cheese samples more than younger consumer groups. It was found that overall liking of Ezine cheese was correlated with liking cheese flavor, saltiness, and texture. According to consumer behavior analysis, four consumer clusters were identified for Ezine cheese. Significant differences were observed between consumer clusters regarding some consumption and purchasing behavior, consumer liking, and factors influencing purchase of Ezine cheese. Consumers indicated that cheese flavor and overall preference are the most important disincentive factors in the consumption of Ezine cheese in high proportions. Cheese consumption habits, benefits of dairy products, and enhancing breakfast choices also influenced consumers' decisions for purchasing Ezine cheese.

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