

Evaluation of consumers' preferences on apple varieties: A case of Antalya province

İlknur ESKİMEZ¹, Mevlüt GÜL² and Dursun ÇETİN³

¹Isparta University of Applied Sciences, Faculty of Agriculture, Department of Horticulture, 32100 Isparta/Turkey

²Isparta University of Applied Sciences, Faculty of Agriculture, Department of Agricultural Economics, 32100 Isparta/Turkey

³Engin Agriculture Fruit Food Industry and Trade Limited Company, 70100 Akçaşehir, Karaman/Turkey

Abstract

In this study, it was aimed to determine the preferences for apple varieties and apple consumption of the households living in the city center of Antalya. In this regard, we examined consumers' decision to buy apples, purchasing frequency, supply channel preference, consumption level, attitudes to chemical drug residues. Cross-sectional data were collected from 300 households in February 2017 by face-to-face interviews. Consumers were classified as low, medium-low, medium-high and high-income groups according to their income, and according to these groups, other variables were interpreted by cross-tabulation. Consumers' opinions and behaviours towards food were scored by a five-point Likert scale. Consumers perceived criteria as price, quality, appearance, diversity, taste, organic as important in apple purchases. Consumers' choice of apples differed in parallel with their income level. As income increased, consumers were also more likely to know about apple varieties. We observed that consumers are generally aware of the traditional varieties (Golden delicious, Starking delicious, Granny Smith, Amasya) and buy these varieties. When the reasons for choosing apple varieties were examined the taste of Golden and Starking varieties; crisp and hardness of Granny Smith and Amasya variety were detected as main criteria. The most important criteria in apple purchases were factors such as price, appearance, quality, taste and flavour at the forefront, and it was determined that the varieties came after these factors. The most preferred channel for apple purchases was the street market. The most known and most consumed apple varieties were classic varieties (Starking delicious, Golden delicious, Granny Smith and Amasya). Developments in the production front, which can convince the consumer, especially for reliable food (such as organic, good agricultural production), may increase the consumption of apples.

Keywords: Apple, variety, consumption, preference, Antalya

Introduction

The issue of nutrition has become more important. Rapid population growth and urbanisation and differences in food consumption habits of the society due to the differences in the social life of the people affect perceptions. In this respect, fruits and vegetables can be the forefront products, and people tend to increase the consumption of these products (Gül et al., 2008). Apple was one of the most popular fruit that was grown and traded economically after citrus fruits and banana. Turkey

was the homeland of apple species with a wealth of variety. However, the diversity of Turkey has not been developed to meet the needs of the food industry (Gül and Erkan, 2001). Approximately 60% of apple production was maintained in Isparta, Karaman, Niğde, Antalya, Denizli and Konya provinces of Turkey. The current food consumption and consumer's income level are important in the decisions of the public on food supply (Koç, 1995).

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*Corresponding author e-mail: ilknureskimez01@gmail.com

In addition to fresh consumption, apple was consumed, processed and cooked as vinegar and juices, pastries and desserts in Turkey. The pesticide residues in fruit and vegetable species and the use of hormones have been affecting consumer behaviours to a great extent in recent years. The awareness of consumers, along with the increasing income and knowledge level, has also caused some differences in the production techniques. GLOBALGAP protocol was prepared to protect consumers in the EU, and this protocol was applied in Turkey as well (Gül et al., 2008). Golden delicious was the most grown apple in the world. Instead of traditional varieties, the market share of new varieties was increasing, and this trend was expected to continue.

One of the important factors affecting the fruit production and trade was new varieties, and the other was production systems (such as Integrated Fruit Production-IFP) (Gül and Erkan, 2001). In Turkey, Golden delicious, Starking delicious, Granny smith, Starkrimson and Amasya are more widely grown varieties and are classified traditionally grown varieties in world trade (Gül and Erkan 2001). It was observed that the preferences of consumers change over time. Because there were no studies on consumer preferences of apple varieties in Turkey, we did this study. This study aimed to examine the perspectives of consumers in Turkey regarding apple consumption with respect to a sample from Antalya province. Therefore, it was intended to determine the consumer's judgement on apple varieties, preferences of consumers, purchasing channels, consumption structure.

Materials and Methods

The primary data used for the paper was collected through face-to-face interviews from 300 households living in the urban area of Antalya. The survey was conducted in February 2017. Cross-tabulation was performed in the evaluation of the data. The questions were prepared according to the Likert scale to measure consumer satisfaction and preference. Four groups

were formed according to average incomes. Households with income groups less than 404 USD was identified as I. group, households with income between 404-808 USD was II. group, households with income between 808-1347 USD was III. group, households with an income of 1347 USD and more was IV. group.

Results and Discussion

Demographic Characteristics of Households

Consumer-related variables affect the demand for agriculture and food. Socio-demographic characteristics of consumers are influential on consumption and buying habits (Akpınar et al., 2015). In this study, consumers' demand for apple varieties were determined. Demographic characteristics of the sample consumer population were analysed with respect to gender, age, occupation, marital status, education, household size and lifestyle.

Accordingly, 45.3% of the 300 interviewees surveyed were male, and 54.7% were female consumers. Also, according to TUIK 2017 General Population Data, the female population ratio was 50.4% in Antalya province. Household size was 3-4 people in Turkey and Antalya. Akpınar et al. (2015) determined that the household size was 3.2 persons in Antalya. In this study, the average household size was 3.7 persons. Interviewees were mostly students, civil servants, tradesmen and merchants. The majority was high school graduates. Many factors are affecting the activity of consumption, and the most critical factor was the income level. There was a direct relationship between income and consumption (Tari and Pehlivanoglu, 2007). Therefore, the income level was accepted as an essential factor in the study. 13% of the households interviewed were in Group I due to income level, 28% was in Group II, 36% was in Group III, and 23% was in Group IV. The households interviewed were predominantly in Group III (Table 1).

Table 1. Demographic characteristics of households (%)

Variables	Income Groups				Total/Average
	I	II	III	IV	
Number of people (n)	39	84	108	69	300
Number of people (%)	13	28	36	23	100.0
Gender of interviews (%)					
Woman	76.9	58.3	46.3	44.9	54.3
Man	23.1	41.7	53.8	55.0	45.7
	Households by income groups (%)				
0-404 USD	100	0.0	0.0	0.0	3.0
404-808 USD	0.0	100	0.0	0.0	28.0
808-1347 USD	0.0	0.0	0.0	100.0	36.0
1347-2156 USD	0.0	0.0	0.0	76.8	17.7
2156-3504 USD	0.0	0.0	0.0	18.8	4.3
3504-5390 USD	0.0	0.0	0.0	2.9	0.7
5390+ USD	0.0	0.0	0.0	1.4	0.3
	Education (%)				
Literate	0.6	0.0	1.9	0.0	1.0
Primary education	0.0	7.1	10.2	5.8	7.0
High school	59.0	51.2	49.1	55.1	52.3
College	10.3	9.5	9.3	7.2	9.0
University	25.6	31.0	22.2	17.4	24.0
MSc	2.6	1.2	7.4	10.1	5.7
PhD	0.0	0.0	0.0	4.3	1.1

Consumer behaviour was defined as the process of purchasing and exchanging goods (Moven and Minor, 2001). Individual and non-individual factors affect consumer behaviours. Individual factors include needs, motives, perceptions, attitudes and experiences (Cömert and Durmaz, 2006). Nowadays, consumers' expectation for product variety related to consumption has been rising. Numerous goods and services are produced to meet the expectations of consumers. Public authorities, retailers and marketers should act together to meet consumers' expectations (Oral et al., 2017).

Apple was usually consumed fresh in Turkey. Most of the apple was consumed fresh in the world. In countries such as China, England, Brazil, Japan, and Taiwan, the vast majority of consumption was fresh (Gül and Akpınar, 2006). According to 2017 FAO figures, 17.8% of the total apple production in

the world is subject to foreign trade. There was a 10% loss of output, 10% was processed in the fruit industry. Based on this, it can be said that 57% of the total apple production was consumed fresh. Apple has an important place among soft stone fruits. Turkey's quince, fig, apricot, cherry, cherry pistachio, walnut, carob, grape, chestnut, strawberry, lemon and apple production receive a significant share in the world (Gül and Akpınar, 2006).

Distribution of the households interviewed by income groups was given (Figure 1). Accordingly, 13% of the households interviewed were in Group I due to income level, 28% was in Group II, 36% was in Group III, and 23% was in Group IV. The frequency of interviewees' apple consumption was presented in Table 2. Most consumers consume apple two and three days per week, and this was followed by daily use.

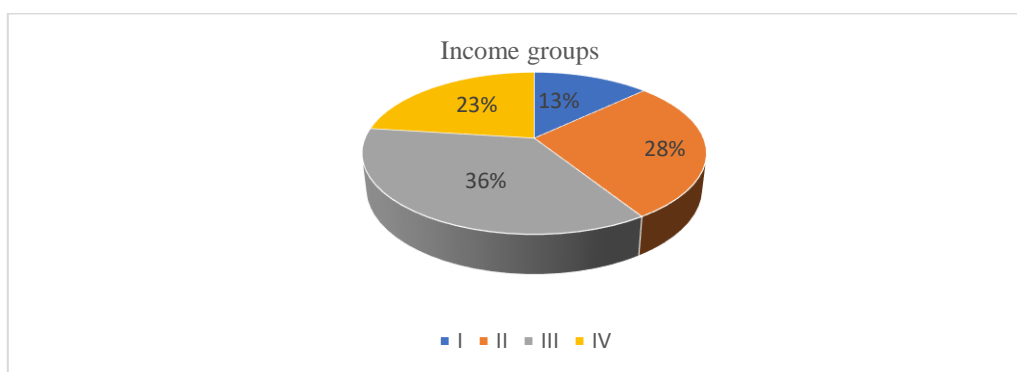


Figure 1. By income groups of the interviewed households (%)

Table 2. Frequency of apple consumption (%)

Frequency	Income Groups				Total/Average
	I	II	III	IV	
Regularly daily	17.9	25.0	23.1	27.5	24.0
Irregularly per day	7.7	11.9	22.2	8.7	14.3
Two to three days a week	23.1	23.8	23.1	33.3	25.7
Two to three times a week	25.6	19.0	15.7	5.9	18.0
Once a week	10.3	11.9	8.3	10.1	10.0
Every fifteen days	12.8	7.1	4.6	4.3	6.3
Once in a month	2.6	1.2	2.8	0.0	1.7
Total	100.0	100.0	100.0	100.0	100.0

The demand for food products was rising, and in recent years, many studies have been carried out on food safety for consumers. Consumers' thoughts on the reliability of fresh fruit and vegetables vary over time. The interviewees' safety evaluation of fresh fruits and vegetables in terms of health was

given in Table 3. Accordingly, 8.3% of interviewees did not find it reliable, and 39.3% found it quite reliable. Interviewees generally found fresh fruit and vegetables as very reliable in terms of health (Table 3).

Table 3. Determination of the safety of fresh fruits and vegetables in terms of health (%)

	Income Groups				Total/Average
	I	II	III	IV	
Not reliable at all	5.1	7.1	11.1	7.2	8.3
A little reliable	7.7	22.6	14.8	20.3	17.3
Moderately reliable	28.2	28.6	38.9	37.7	34.3
Quite reliable	43.6	35.7	20.4	21.7	28.0
Very reliable	15.4	6.0	14.8	13.0	12.0
Total	100.0	100.0	100.0	100.0	100.0

Apple types preferred by consumers

Turkey was known with the classic varieties as Starking delicious, Golden delicious, Granny Smith, Starkrimson and Amasya. In the world, new varieties such as Fuji, Braeburn, Gala and Jonagold were prominent (Gündüz, 1997). We observed that consumers did not have enough information on new apple varieties in the research area.

The level of knowledge on the apple varieties was given in Table 4. 75.3% of the interviewees declared that they knew Amasya apple variety, 64.7% of them knew Golden delicious,

55.3% of them knew Starking delicious, 52.7% of them knew Granny Smith, 18.7% of them knew Red Delicious, 6.7% of them knew Gala, 6.3% of them knew Pink Lady, and 5.7% of them knew Fuji apple varieties. Interviewees indicated awareness information on more than one apple variety mostly. In general, interviewees had ideas about the classic varieties (Amasya, Golden delicious, Starking delicious and Granny Smith). As the level of income rises, interviewees' knowledge on new apple varieties increases as well (Table 4).

Table 4. Consumers' awareness level on apple varieties (%)

Variety	Income Groups				Total/Average
	I	II	III	IV	
Amasya	71.8	73.8	77.8	75.4	75.3
Golden delicious	48.7	60.7	65.7	76.8	64.7
Starking delicious	38.5	50.0	61.1	62.3	55.3
Granny smith	30.8	51.2	59.3	56.5	52.7
Red delicious	12.8	21.4	17.6	20.3	18.7
Gala	5.13	6.0	6.5	11.6	6.7
Pink lady	7.7	6.0	7.4	4.3	6.3
Fuji	7.7	7.1	3.7	5.8	5.7

We found that the most preferred varieties were predominantly classic varieties. Starking delicious was the first with 27%, and

Golden delicious was the second with 18%. Fuji was not preferred by 96.3% of the sample (Table 5).

Table 5. Prefer apple varieties (%)

Variety	Ever	Less	Sometimes	Continuous	Always
Amasya	47.0	6.7	15.3	21.3	9.7
Golden delicious	37.3	6.0	14.3	24.7	18.0
Starking delicious	48.0	2.7	6.3	16.0	27.0
Granny smith	48.3	3.0	19.0	22.7	7.0
Red delicious	86.0	1.3	4.0	6.0	2.7
Gala	94.3	0.3	1.7	1.7	2.0
Pink lady	95.7	0.7	2.3	1.3	0.0
Fuji	96.3	0.7	0.3	2.0	0.7

Reasons for Consumers in Apple Variety Preference

The reasons why consumers prefer different apple varieties were given in Table 6. Accordingly, individuals often prefer Golden delicious due to habit, taste, smell, organoleptic quality and durability. When the preferences of the consumers were examined according to the taste factor, the demand for the *Golden delicious* variety increases as the income level increases. Amasya variety was preferred in terms of durability.

Consumers with high-income groups in terms of habit prefer the Golden Delicious variety. While Granny Smith was preferred in terms of hardness, it can be said that the Amasya variety was preferred in terms of fruit juice and durability. In terms of odour, the *Golden delicious* variety was preferred as the income group increases. The new varieties were not included in the ranking because they were not statistically significant.

Table 6. Reasons for choosing apple varieties

Variables	I	II	III	IV
Taste	Starking d.	Golden d.	Golden d.	Golden d.
Durability	Amasya	Amasya	Amasya	Golden d.
Habit	Starking d.	Golden d.	Golden d.	Golden d.
Organoleptic quality	Granny s.	Amasya	Golden d.	Starking d.
Hardness	Amasya	Granny s.	Granny s.	Granny s.
Juiciness	Amasya	Amasya	Amasya	Amasya
Brittleness	Granny s.	Granny s.	Granny s.	Granny s.
Smell	Amasya	Golden d.	Golden d.	Golden d.

Good agricultural practices are the main name for techniques that care agricultural production system's socially liveable, economically profitable and efficient; human, animal and

environmental health (Ekmekçi et al., 2012). Good agricultural practices aims to assure the sustainability of agricultural production without harm to the environment, human and

animal health, protection of natural resources, traceability in agriculture, ensuring food safety. Interviewees declared that their consumption could increase by 78.7% with good agricultural practices in apple production (Table 7).

Table 7. The effect of Good Agricultural Practice on apple consumption (%)

Status	I	II	III	IV	Average
Decreases	5.1	4.8	6.5	1.4	4.7
Constant	17.9	15.5	19.4	13.0	16.7
Increases	76.9	79.8	74.1	85.5	78.7
Total	100.0	100.0	100.0	100.0	100.0

Effective Criteria for Apple Consumption and Purchasing

In a study conducted on fresh fruits and vegetables in Adana, the most significant criteria for fresh fruit and vegetable

purchases were freshness, health, flavour, quality, hygiene, medicine, and hormone (Gül et al., 2008). In a different study carried out in Izmir, Ankara and Istanbul, nutritional value, drug, hormone and additive, flavour and price were the most striking features (Akgüngör et al., 1999).

Table 8 showed that which criteria were considered in apple consumption for this study. In this regard, consumer rating was determined by using the 5-point Likert scale. The quality, flavour, taste, health benefits, being organic, being eligible for the palate, water loss, cleaning, sweet, sour, astringent taste, vitamin and mineral content found important for the interviewees. Price was also an important factor. Features like quality, flavour, delicate taste, health benefits, being organic, appeal to the taste buds were found as important for consumers. The income level increases, consumers' health benefits, being organic, nutritional content, appearance, vitamin and mineral content affect purchasing behaviour.

Table 8. The criteria were taken into account in apple consumption

Variables	I	II	III	IV	Average
Quality	4.5	4.5	4.5	4.5	4.5
Taste	4.5	4.5	4.5	4.3	4.4
Nice taste	4.5	4.5	4.2	4.3	4.3
Health benefits	4.4	4.1	4.2	4.3	4.3
Be organic	4.2	4.2	4.2	4.3	4.3
Appeal to the taste buds	4.2	4.2	4.3	4.3	4.2
Water loss	4.0	4.3	4.3	4.3	4.2
Cleaning	4.4	4.1	4.3	4.2	4.2
Sweet, sour, astringent taste	4.3	4.1	4.2	4.2	4.2
Vitamin and mineral content	4.0	4.1	4.2	4.2	4.2
Price	4.0	4.2	4.0	4.1	4.1
To be cheap	4.3	4.0	4.1	4.0	4.1
Smell	4.0	4.1	4.1	4.1	4.1
Appearance	4.4	3.8	4.1	3.9	4.0
Insect damage	4.0	3.9	4.0	4.2	4.0
Having pleasant texture	4.2	3.8	4.1	3.9	4.0
Woolliness	3.9	3.8	4.1	4.1	4.0
Useful for body	4.3	3.7	3.7	4.2	4.0
Cracking	3.8	3.9	4.0	4.1	4.0
Physiological damage	3.9	3.8	3.9	4.2	4.0
Sunburn	3.9	3.8	4.0	4.1	4.0
Variety	3.9	4.0	3.9	4.0	3.9
Mechanical damage	3.9	3.9	3.8	4.2	3.9
Residue problem	3.9	3.8	3.9	4.1	3.9
Nice smell	4.1	3.5	4.0	4.0	3.9
Helping to weaken	3.6	3.6	4.1	4.0	3.8
High fiber content	3.8	3.5	3.7	3.9	3.7
Keep awake	3.6	3.3	3.4	3.4	3.4

Businesses attract consumers with various communication and media. These tools are used to reach consumers. In addition to the environment and friends, television, newspapers, magazines and radio broadcasts are effective. The sources where consumers were informed about fruit and vegetable trust in the last six months(%) were given in Table 9. Family and friends around, and the internet were influential on the

purchasing behaviour in the Group I. Group II affected more by TV and radio, by the product labels of the Group III consumers, and by the product labels, doctor's advice and the internet for those with the Group IV.

The companies can maintain their progressions in this way, and they can produce according to the demands of consumers (Karaman et al., 2013). The sources of information on the

reliability of fruit and vegetable in the last six months of interviewees were given in Table 9. 15% of the interviewees stated that they received information from newspapers and magazines, 41.7% from TV and radio, 46.3% from family and friends, 20.7% from product labels and 13.3% from doctors and experts. As a result, we observed that the interviewees

received most of the information from family and friends, the internet as well as TV and radio.

According to a survey conducted in Tokat province, it was revealed that consumers received most of the information about food safety from radio and television programs and were mostly influenced by TV commercials in food purchases (Onurlubaş, 2011).

Table 9. Resources that consumers have been informed about fruit and vegetable trust in the last six months(%)

Variables	Income Groups				Total/Average
	I	II	III	IV	
Newspaper and magazine	12,8	19,1	14,8	11,6	15,0
TV and radio	43,6	51,2	39,8	31,9	41,7
Family and friends	53,9	40,5	46,3	49,3	46,3
Product tags	2,6	13,1	25,9	31,9	20,7
Doctor and expert advice	5,1	6,0	13,9	26,1	13,3
Internet	43,6	36,9	38,0	53,6	42,0

*Answers exceeded one hundred percent because the consumers marked more than one option.

Today, the remnants of pesticide used in agriculture and the use of and unnecessary agrochemicals have become a fundamental problem in terms of sustainability in agriculture. Due to this problem, consumers have become cautious about food products. As the use of agrochemicals increases, fruits and vegetables become more threatful in terms of food safety.

The importance of the problem of pesticide residues in fruits and vegetables was shown in Table 10 using the 5-point Likert scale presented to the consumers. Accordingly, pesticide residues in fruit vegetables were found to be important by 57.4% of consumers. Also, the majority of the interviewees stated that the use of agrochemicals should be reduced.

Table 10. The importance of chemical drug residues in vendor selection in fruit vegetable species (%)

Variables	Income Groups				Total/Average
	I	II	III	IV	
Never important	7.7	6.0	8.3	4.3	6.7
Not important	25.6	13.1	13.0	13.0	14.7
Middle	30.8	20.2	21.3	20.3	22.0
Important	20.5	31.0	27.8	24.6	27.7
Very important	15.4	29.8	29.6	37.7	29.7
Total	100.0	100.0	100.0	100.0	100.0

In sufficient and high-quality agricultural production, plant protection products are necessary. However, the use of high doses and unconscious pesticides can be dangerous for human and environmental health (Tiryaki et al., 2010). Therefore, the remnants of medicines have become more and more important in the consumption of fruits and vegetables for consumers. In

recent years, people have preferred organic products. The effect of organic production on fruit and vegetable consumption was demonstrated in Table 11. Organic products were preferred more in all income groups. In general, as the income level increases, consumers prefer quality and natural products.

Table 11. The effect of organic vegetables on consumption

Variables	Income Groups				Total/Average
	I	II	III	IV	
Does not change	12.8	17.9	24.1	23.2	20.7
Increases	87.2	82.1	75.9	76.8	79.3
Total	100.0	100.0	100.0	100.0	100.0

There are many economic and social factors affecting the purchasing behaviours of individuals. These are income level, education level, family and friends, TV ads and price discounts. Based on this information, the factors affecting fruits and vegetable buying behaviour of the consumers were

examined and shown in Table 12. Individuals interviewed stated that they were affected by their family and friends by 31.7% in fruits and vegetable purchases. 11.7% consider dietitians' advice, with 24% price cuts and doctor's advice.

Table 12. Factors affecting purchasing behaviour (%)

Variables	Income Groups				Total/Average
	I	II	III	IV	
Circle of friends	41.0	27.4	30.6	33.3	31.7
Price discounts	15.4	28.6	23.1	24.6	24.0
Doctor's advice	33.3	23.8	25.0	17.4	24.0
Dietitian advice	5.1	10.7	15.7	10.1	11.7
TV ads	5.1	11.9	4.6	10.1	8.0
Total	100.0	100.0	100.0	100.0	100.0

The Effect of Purchasing Channels on Consumer

The level of income varies depending on many factors such as habits, demand, and public policies. Many factors affect consumers' buying behaviour. In this regard, many factors such as the income level of the family, number of children, life status in rural or urban areas and quality of goods to be purchased are taken into consideration (Güneş et al., 2002).

The level of income of consumers was an important criterion in purchasing. While families with low income tend towards relatively affordable products, families with high-income groups prefer products that are more suitable with organic and quality standards. The distance to the supply channels, customer satisfaction, product and price diversity, the price of the products are effective in consumer decisions.

When evaluations of consumers towards neighbourhood markets examined, it can be said that they were satisfied with the price, products' freshness, variety of products and prices. While pick-up function provided reasonable satisfaction, behaviours towards costumers and interest, health conditions and cleanliness and weighing reliability provided moderate satisfaction. However, consumers were dissatisfied with the

packaging. Supermarkets, unlike neighbourhood markets, provided consumers with high satisfaction, especially in terms of weighing reliability, health conditions and cleanliness and packaging. In addition to these, behaviours towards customers and interest, product freshness, product and price diversity, pick-up function provided reasonable satisfaction. In terms of receiving the level of satisfaction with the price was moderate, and there was no marketing activity for supermarkets with low levels of satisfaction. It can be said that consumers were mostly dissatisfied with the peddlers. Among the evaluations made for the peddlers, it was reported that only the price criterion provided a good satisfaction level, and the degree of satisfaction with other activities was found to be moderate and low.

The most preferred purchasing channel in Antalya was the local market (bazaar) with 77%, supermarket with 11%, grocery with 7% and the other with 2.3% (Table 13). Accordingly, consumers generally prefer bazaars. Also, high-income consumers preferred more supermarket and greengrocer.

Table 13. Sorting of apple purchasing channels by importance level (%)

Purchasing channels	Income groups				Average/Total
	I	II	III	IV	
Bazaar	82.1	82.1	79.6	63.8	77.0
Greengrocer	7.7	8.3	4.6	8.7	7.0
Peddler	0.0	1.2	0.0	5.8	1.7
Supermarket	5.1	6.0	11.1	20.3	11.0
Other	5.1	2.4	1.9	1.4	2.3
Total	100.0	100.0	100.0	100.0	100.0

Purchasing channels are important for consumers. In this context, the factors affecting consumer preferences were examined, and the results were listed in order of importance for the consumers who prefer to purchase fruits and vegetables. According to the results; affordability, the freshness of the product, proximity, product variety and prices were found to be statistically significant factors affecting consumers while choosing district bazaar. For supermarkets, features like shopping via credit card, shopping opportunities, health conditions and cleaning, ease of purchase stand out. On the other hand, greengrocers were found to be important for consumers due to reasons such as proximity, ease of purchase, the freshness of products, health conditions and cleanliness. In this respect, price appropriateness, proximity, product freshness, product and price diversity and selection were the most critical factors in determining the purchasing channels

that consumers would prefer to buy fruits and vegetables (Gül et al., 2008).

The criteria to be considered by consumers in the selection of retailers when buying fresh fruits and vegetables were examined, and findings were given in Table 14. The most important criteria for district bazaar were proximity, product freshness, affordability, habit, variety of product price, and selecting. The most important features when buying from groceries were product mainly by selecting, product freshness, product price and variety. The most important factors that were taken into consideration when shopping by the peddler were the freshness of the product and the behaviour to the customer. Peddler seller was preferred because of the freshness of the product. The supermarket was preferred for product freshness, health conditions, selection, credit card shopping and parking facilities (Table 14).

Table 14. Reasons for buying channels when buying fresh fruits and vegetables

Criteria	District Bazaar	Greengrocer	Peddler	Supermarket
Affordability	4.4	4.2	4.0	4.1
Proximity	4.5	4.2	3.9	4.4
Habit	4.4	4.2	3.8	4.3
Product freshness	4.5	4.3	4.2	4.5
Product-price diversity	4.4	4.3	4.0	4.4
Packing	3.7	3.9	3.5	4.2
Health conditions	4.1	4.2	3.9	4.5
Selecting	4.4	4.4	4.0	4.5
Customer behaviour	4.1	4.2	4.1	4.3
Ease of purchase	4.1	4.1	3.9	4.3
Collective shopping opportunities	3.8	3.7	3.5	4.1
Shopping with credit card	1.9	3.3	2.9	4.0
Parking facilities	2.2	3.5	3.0	4.0
Weighing reliability	4.0	4.2	4.0	4.3
Price	4.3	4.1	4.0	4.2
Ease of payment	4.2	4.1	4.0	4.2
Product reliability	4.2	4.2	4.0	4.4

*1. Never important, 2. Not important, 3. Middle, 4. Important, 5. Very important

Conclusion

Consumers mainly used to consume apples per every two to three days. Consumers knew and generally, bought the classic apple varieties. Golden and Starking varieties were preferred for taste, Granny Smith was preferred for crisp and hardness and Amasya for juiciness. Price, appearance, quality and taste were the most important criteria for buying apples. Variety came after these factors. In the study, we observed that people did not have enough information about apple varieties. It was determined that colour was important to factor in fruit consumption, and the reddest colour was preferred. The most preferred channel for buying apples was the district bazaar. The district bazaar was preferred due to the reasons of cheapness, intimacy, habit, product freshness and product-price variety. Supermarkets were preferred due to product freshness, health conditions, selection, product-price diversity and product reliability. The most important feature to be developed in the varieties preferred by the consumers was found as agrochemicals residues. More than 20 different varieties of apples have been produced in our country, but consumers had more information on only classical varieties. Therefore, consumers should be informed by producers about new varieties. Businesses should provide goods and services by paying attention to consumer demand. Consumers prefer the *Granny smith* variety in terms of durability, the *Golden delicious* variety in terms of taste and durability, and the *Amasya* variety was more preferred in terms of juiciness. When the results of the study were evaluated in general, producers had to produce according to consumer preferences. For this purpose, productive, high quality, disease and pest resistant varieties should be improved. Producers should focus on the juicier, harder, taste criteria of the apple varieties they will grow.

Conflict of Interest

There is no conflict of this manuscript.

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