Analyzing Households' Fruit Juice Consumption and Purchasing Tendency: A Case Study From Isparta

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Abstract

The investments of fruit juice industry had been begun in 1969 in Turkey and accelerated since 1983 in modern sense. 37 fruit juice firms are officially registered as trademark. The fruit juice consumption per head was increased in the beginning of 1970s by about 13 fold augmentation, however, this value is still considerably lower than the developed countries. Relatively high fresh fruit consumption is caused lower fruit juice consumption in Turkey. However, an increasing in the domestic demand of fruit juice is observed by the years. This study was carried out to determine the fruit juice consumption and the expenditure of the families in Isparta Province. Thus, this investigation was conducted in the centre of Isparta. In this means, purchasing behaviours on socio-economic variables which are related with fruit juice consumption and expenditure pattern, types and brand preferences, tendency of consumption and purchasing of households were carried out. The data used in this study were collected from 384 consumers (5% Standard Error, 95% Confidence Interval) by using face to face survey method in Isparta downtown.

Keywords: *Fruit Juice, Consumption, Expenditure Structure*

1 Introduction

In parallel with the healthy life trend in the world, the fruit juice consumption and industry which is in the category of non-alcoholic drinks, is gaining popularity and developing in Turkey as in the world.

It is known that both fruits and fruit juices have antioxidant activities that are sourced from the phenolic compounds, vitamin C and the carotenoids (Netzel et al., 2002; Lugasi and Hóvári, 2003). The daily consumption of at least five portions of vegetables, fruits and their derivatives as an important factor of healthy nutrition is suggested by some worldwide health institutions. Fruit juice contributes significantly to healthy life through their contents of vitamins, minerals, antioxidants, and phytochemical compounds. Fruit juices are not only an important complements of all fruits, they are also contribute to the liquid consumption of a human for healthy nutrition (Kefeli and Özçelik, 2007).

Especially in the developed countries, the consumers choose fruit juice for their vitamin, liquid, and mineral requirements for a long time, but in Turkish life we have been reached this stage yet. The development of healthy life intelligence and the increased trend of the need of high life quality and the easy consumption of fruit juice, play a major role in fruit juice consumption. It is emphasized that the fruit juice production as an industrial product in the sixties was increased in parallel to the world in the 2000s as a result of the increased intelligence of healthy life all over the world. As a result of the development in the healthy nutritional life trend in a parallel with the buying power of the consumers, it is observed that the companies are turning to utmost new products and adding a new tastefulness to the markets in Turkey similarly to the trends in the EU markets.

The preferred fruit types in the fruit juice production changes based on the cultural differences. The consumption of fruit juice which was 0.4 liter for per person in the early seventies, increased 10 times and reached to 3.9 liters in 1996, 4.0 liters in 1998 and 10.83 liters (consisting of 7.9 liters of fruit nectar and 100% fruit juice) in 2008. Despite the recent increases in the fruit juice consumption in Turkey, it is still low in comparison to the developed countries. This number is reported as 36 liters for the United States, 25 liters for Canada, 22.94 liters for the average of Europe, 33.52 liters for Germany, 25.35 liters for France, 24.69 liters for England and 14.65 liters for Italy (AIJN, 2008). In the assessment of fruit juice consumption on the basis of juice types, it could be seen that orange and apple juice are in the European countries while peach and cherry nectar are preferred in Turkey.

The fruit juice industry is composed from 34 companies and 38 factories in Turkey. While the production of fruit juice in Turkey was 295 million liters for the year 2000, this number increased by 2.5 times and reached 748,1 million liters for 2007 and 821,6 million liters for 2008. 64% of these numbers were from fruit nectar and 22% were from drinks with aroma. When the production's 9% consist of 100% fruit juice, the 5% of them are from fruit drinks. Domestic consumption of fruit juice and their derivatives totalled up to 709.6 million liters. The number of this consumption for 2007, showed an increase as 141% compared with 2000 and 19% compare with 2006. The rate of increase for the categories of the drinks greatly differs from each other.

Since 2000, the increases in 100% fruit juice consumption have been reached 30 times and this rate in fruit nectar has evaluated as 250% (Ekşi and Akdağ, 2007).

In the recent year's there are not enough studies in the literature about the amount of fruit juice consumption and consumer behaviours. The research studies on consumption and consumer behaviours on the sales are very essential information resources for the marketing managements of the companies.

Companies need information which are from consumer studies, for additional investments, to increase the variety of the product, to develop products and to decide the marketing mix. On the other hand, the effective factors on the consumption level of the product in the socio-economical groups are closely related to the consumer organizations. In this study, it was targeted to evaluate the food sector which is one of the leading sectors of the Turkish economy, also especially the beverage sector and the consumer preferences on fruit juice sector that is related with the public health.

2 Material and Methods

The main material of the research is composed from cross sectional data which was retrieved from the households inhabited in urban districts of Isparta by face to face interview. The previous studies conducted on familiar subject were also utilised. The

relevant sample size was determined as 356 questionnaires with utilisation of the sampling technique (Collins, 1986). The questionnaire was implemented between February-March 2008 and the data belongs to this period. The results found after the analysis and interpretation of the data was demonstrated in table and graphics format.

3 Results and Discussion

3.1 The Consumer Profile

One of the factors that affect the consumption and the buying decisions is also the factors related with the consumer. The socio-demographic properties have been able to have a certain role in the demand of food and their buying behaviours for the product. Therefore the consumers' demographic and economical properties, their gender, age, education, occupation, and income properties were evaluated (Table 1). The results showed that two-thirds of the sample consumer population consists of 31-50 age groups, whereas the majority of the sampled population with 57%, were in the intermediate education level group. In terms of gender distribution, the sample consumer population was composed from 51.4% female and 48.6% male, totally 356 sample units (person). The samples falling in the lowest income group were found as 6.7%, while the distribution of samples was intensified in the second lowest and middle income group. Besides, the rate of the samples falling in the highest income group was 5.6%. Based on the occupation classes, the public employee and the housewives were observed in majority.

Table 1. Consumer (Sample) Profiles

n=356	%		%		%
***Gender*:**		***Occupation*:**		***Income (TL/month):***	
Female	51.4	Public employee	33.4	<501	6.7
Male	48.6	Housewife	30.3	501-1000	29.6
		Retired	12.6	1001-1500	24.0
***Age*:**		Self employed	9.6	1501-2000	17.6
20-30	13.5	Worker	9.3	2001- 3000	16.5
31-40	33.1	Unemployed	1.4	3000<	5.6
41-50	32.6	Private employee	3.3		
51+	20.8				
***Education Level*:**					
Literacy	4.2				
Primary School	28.9				
High School	28.1				
University	38.8				

3.2 Fruit Juice Consumption and Buying Preference

In this section of the study, the findings were based on the participation of family members to the fruit juice purchasing and the decision of buying fruit juice, the level of fruit juice preparation at home, important criterias for buying fruit juice, brand preference and loyalty level, the preference of fruit juice types and the expenses for the fruit juice.

The children are the major determiners (36.2%) in the consumer family in the decision of buying fruit juice and other drinks. This is followed by the mothers (35.3%) and fathers (28.4%). The percentage of consumers who are going to shopping alone was 39.6 % whereas 60.4% of them are shopping with their children. It is noteworthy that the children buyers are directly effective for the evolution of the preference in fruit juice shopping.
The 48.9% of the interviewed families prepare their own fruit juice at home and 51.1% of them demand it from other sources. Most of the home-made juice consumer families prefer mostly orange juice, apple and peach respectively. The harvest time of the citrus fruits coincided with the implementation of the survey (February-March), so it was certainly resulted in high percentage of home-made fruit juice consumption. Upon evaluating the criterias of buying fruit juice, it can be said that 52.2% of the consumer population gave the highest importance to the brand of the fruit juice. The second important criteria were the price with the rate of 37.6% in the decision. On the other hand, the rate of accessibility of the product was 5.9% and the package facilities were effective on the preference of the consumers with the rate of 4.3% (Figure 1).

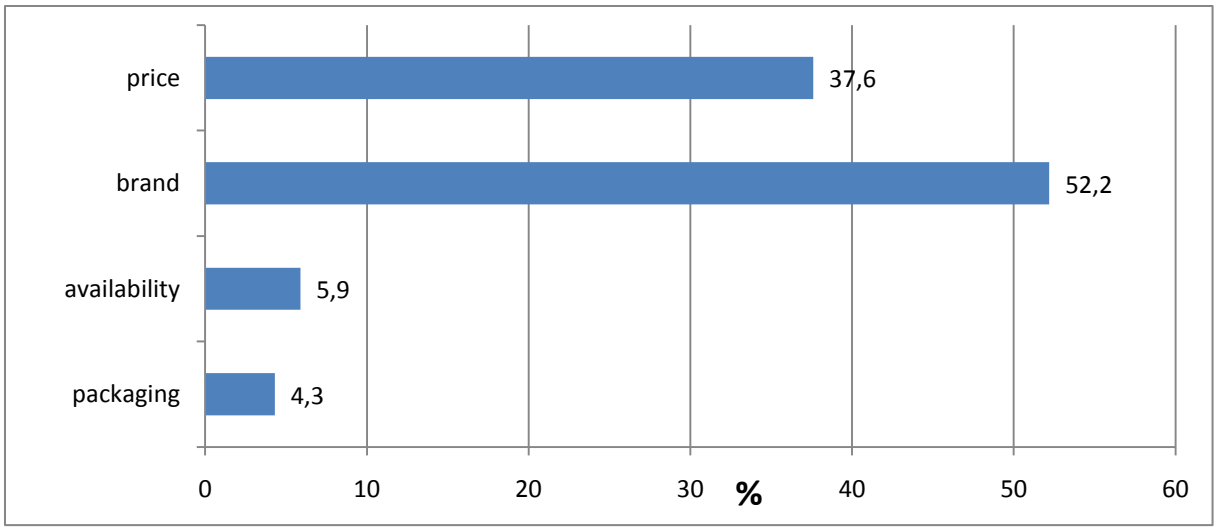

Figure 1. The criterias effective on the fruit juice buying decision

The fruit types used in fruit juice manufacturing in Turkey are mainly apple, apricot, peach, sour cherry, orange, grape, and pomegranate. As a row material, the ratio of apple in the juice production decreases yearly, nevertheless apple juice is the number one in the production list with 43.3%in the total fruit juice production in Turkey. It is followed by peach juice (15.4%), apricot juice (9.7%), orange juice (8.3%), and sour cherry juice (7.1%). It was also noted that pomegranate, carrot, grape, strawberry, and quince are joined in the production as row materials (Anon., 2010). Fruit juice consumption is lower in Turkey than the European countries. This is because the fresh fruit consumption in the family residence

in Turkey is an important factor. In Europe, orange and apple juice are commonly consumed whereas peach and sour cherry nectar which are mostly consumed in Turkey.
In the study area, the highest consumer preference was for peach juice in terms of fruit juice type which was followed by sour cherry, apricot, orange and apple juice respectively (Figure 2). Roughly 80% of the consumers (79.8%) stated that they did not consume pure fruit juice without nectar whereas 20.2% of the consumers stated the opposite.
Although apple comes the first in the list of fruits which are added to the fruit juice, it is not preferred by the consumers as the first choice in apple juice consumption. “When do you decide the fruit juice type to buy, at home or in the market?” The answers of this question were “at home” by the 34% of the consumers, “in the supermarket” by 59.3% of them and 6.7% of them were “no idea”. These results showed that the consumers are mostly unplanned in their shopping for fruit juice brand and types. It is observed that the consumers preferred supermarkets for their purchasing chain and 1-liter tetra pack boxes for their weigh choices.

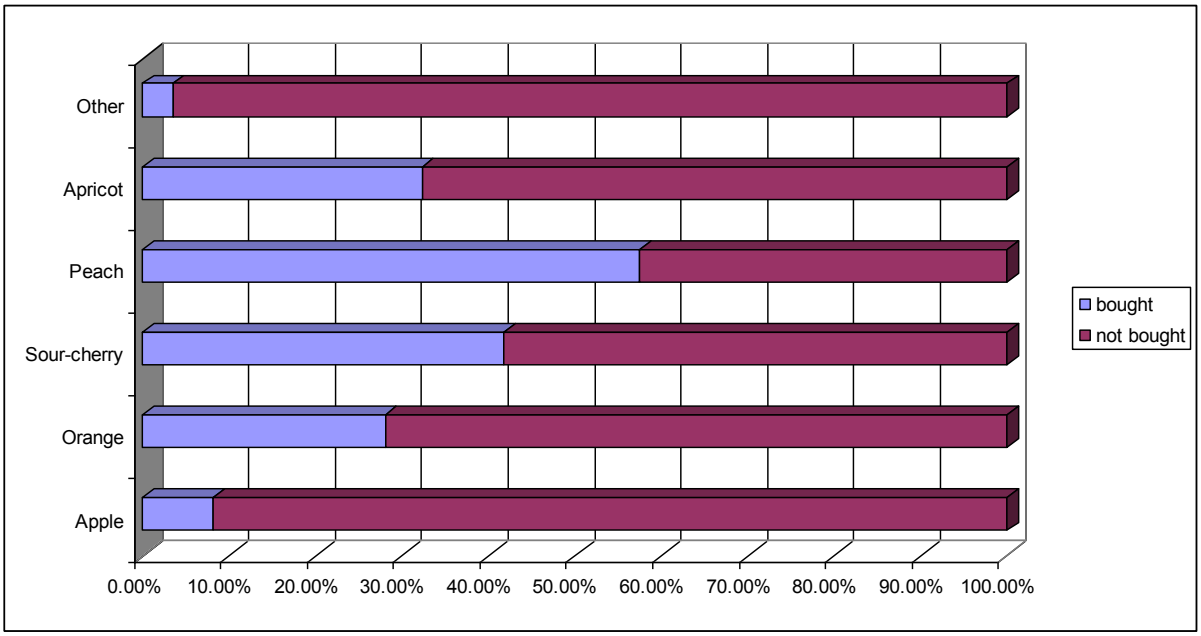

Figure 2. Consumers’ preferences by fruit juice type

In terms of consumer loyalty level to the fruit juice, the percentage of consumers that will be able to be dependent on the same brand of fruit juice and to buy exactly the same brand of fruit juice was about 42.4% in the total population. On the other hand, the percentage of consumers that can be described as independent of fruit juice brand and no exact brands of the juice and consumers frequently changing the preference of juice brand was about 27% in the population. Consumers who are deciding the juice brand coincidently at the moment of buying were 30.6% of the total population.

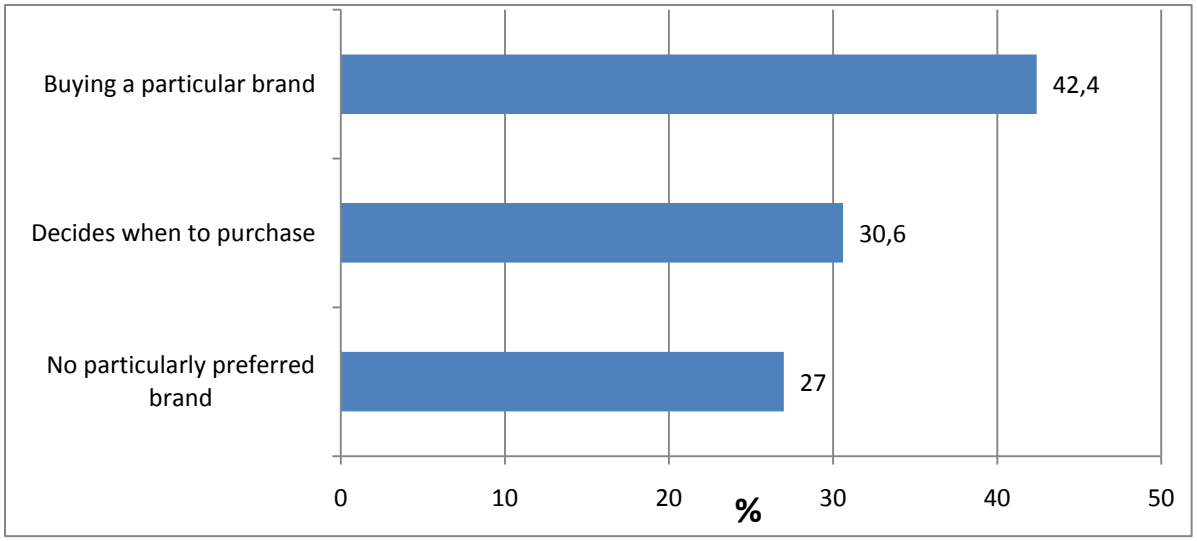

Figure 3. Consumer loyalty to the preferred fruit juice

A conscious consumer is the one who is a socio-economic factor that is organized, targeting maximum utility from the product while buying it, considering his/her real needs, buying planned with receipts, carrying the mature of the choice high quality, safe, healthy environmentally-friendly product, making the product choice that best suits the budget, saves his/her money and controlling the quality (Hekimci, 2002).
In the consumer assessment upon the price ranges, the price positioning is accepted by the consumers. Moreover, about 90% of the interviewed consumers stated that the prices of the juice brands were either low or normal (Table 2).

Table 2. Consumer evaluation of the fruit juice prices

Price	**Frequency**	**%**
Very cheap	9	2,5
Cheap	170	47,8
Normal	144	40,4
Expensive	32	9,0
Very expensive	1	0,3
Total	356	100,0

Table 3 shows monthly average food and fruit juice expenses for per capita income groups for a household. The results showed that monthly average household income was 1.646,7 TL, average food expenses were 479.3 TL, and the expenses for the fruit juice were 22.3 TL. According to cross-sectional data, the rate of the food expenses in general expenses were 29.1% and the fruit juice expenses were 4.7% of the total food expenses. Although the amount of the budget of the consumers allocated for the fruit juice, increases in absolute values and also fluctuated proportionally.

Table 3. The expenses for the fruit juice in the consumer income groups

Income Groups (TL)	Income (TL/month)	Expenditure of food (TL/month)	Expenditure of fruit juice (TL/month)	(II/I*100)	(III/II*100)
<501	459,8	164,8	9,3	35.8	5.6
501-1000	809,1	337,0	17,3	41.7	5.1
1001-1500	1.377,2	449,4	22,0	32.6	4.9
1501-2000	1.913,5	565,8	23,8	29.6	4.2
2001- 3000	2.672,9	684,3	25,3	25.6	3.7
3000<	4.797,5	862,5	51,4	18.0	6.0
Average	1.646,5	479,3	22,3	29.1	4.7

3.3 The Effects of Demographic Variables on the Fruit Juice Consumption

In this part of the study, statistical relationships between demographic properties of the consumers and the consumption of fruit juice were investigated through Chi-square test. As a consequence, there is a significant relationship ($p<0.05$) between age, gender, education and income level factors whereas no relations were found between the occupations and fruit juice consumption. Statistical test are as follows:

Test 1: *Gender- fruit juice consumption: 5 % significance level*

			1	2	3	4	5	
gender	Male	Count	22	49	16	26	60	173
		% within gender	12,7%	28,3%	9,2%	15,0%	34,7%	100,0%
	Female	Count	23	44	38	33	45	183
		% within gender	12,6%	24,0%	20,8%	18,0%	24,6%	100,0%
Total		Count	45	93	54	59	105	356
		% within gender	12,6%	26,1%	15,2%	16,6%	29,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,956[a]	4	,018
Likelihood Ratio	12,222	4	,016
Linear-by-Linear Association	,686	1	,408
N of Valid Cases	356		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 21,87.

Test 2: *Age- fruit juice consumption: 5 % significance level*

			1	2	3	4	5	
Groups of age	1	Count	3	10	11	9	15	48
		% within groups of age	6,2%	20,8%	22,9%	18,8%	31,2%	100,0%
	2	Count	12	25	20	22	39	118
		% within groups of age	10,2%	21,2%	16,9%	18,6%	33,1%	100,0%
	3	Count	20	26	16	16	38	116
		% within groups of age	17,2%	22,4%	13,8%	13,8%	32,8%	100,0%
	4	Count	10	32	7	12	13	74

	% within groups of age	13,5%	43,2%	9,5%	16,2%	17,6%	100,0%
Total	Count	45	93	54	59	105	356
	% within groups of age	12,6%	26,1%	15,2%	16,6%	29,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24,051[a]	12	,020
Likelihood Ratio	23,588	12	,023
Linear-by-Linear Association	8,791	1	,003
N of Valid Cases	356		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 6,07.

Test 3: *Education level- fruit juice consumption: 5 % significance level*

			1	2	3	4	5	
Education level	2	Count	23	38	26	10	21	118
		% within education level	19,5%	32,2%	22,0%	8,5%	17,8%	100,0%
	3	Count	12	21	13	21	33	100
		% within education level	12,0%	21,0%	13,0%	21,0%	33,0%	100,0%
	4	Count	10	34	15	28	51	138
		% within education level	7,2%	24,6%	10,9%	20,3%	37,0%	100,0%
Total		Count	45	93	54	59	105	356
		% within education level	12,6%	26,1%	15,2%	16,6%	29,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31,539[a]	8	,000
Likelihood Ratio	32,762	8	,000
Linear-by-Linear Association	20,274	1	,000
N of Valid Cases	356		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 12,64.

Test 4: *Income- fruit juice consumption: 5 % significance level*

			1	2	3	4	5	
Groups of income	1	Count	9	6	3	1	4	23
		% within groups of income	39,1%	26,1%	13,0%	4,3%	17,4%	100,0%
	2	Count	15	32	22	18	19	106
		% within groups of income	14,2%	30,2%	20,8%	17,0%	17,9%	100,0%
	3	Count	8	18	15	14	31	86
		% within groups of income	9,3%	20,9%	17,4%	16,3%	36,0%	100,0%
	4	Count	7	18	7	11	20	63
		% within groups of income	11,1%	28,6%	11,1%	17,5%	31,7%	100,0%
	5	Count	3	17	5	13	21	59
		% within groups of income	5,1%	28,8%	8,5%	22,0%	35,6%	100,0%
	6	Count	3	2	2	2	10	19
		% within groups of income	15,8%	10,5%	10,5%	10,5%	52,6%	100,0%
Total		Count	45	93	54	59	105	356
		% within groups of income	12,6%	26,1%	15,2%	16,6%	29,5%	100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40,628[a]	20	,004
Likelihood Ratio	38,647	20	,007
Linear-by-Linear Association	14,749	1	,000
N of Valid Cases	356		

a. 7 cells (23,3%) have expected count less than 5. The minimum expected count is 2,40.

Test 5: *Occupation- fruit juice consumption: not significance at 5 % level*

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24,375[a]	28	,662
Likelihood Ratio	27,888	28	,470
Linear-by-Linear Association	0,384	1	,536
N of Valid Cases	356		

a. 17 cells (42,5%) have expected count less than 5. The minimum expected count is ,51.

4 Conclusion

Although there is a great potential to produce fruit juice in Turkey, the inadequate domestic demand and high proportion of fresh fruit consumption can be seen as a barrier for the fruit juice production.

In the current structural system in Turkey, it can be said that the consciousness of the fruit juice consumption is inadequate. In this respect, the improvements in the educational and occupational level of consumers are the most important factors which affect the fruit juice consumption.

MEYED (Fruit Juice Industry Association) which was established in 1993 to introduce the concept of fruit juice in Turkey and inform the related institutions and the public about the fruit juice, is working on the increasing of fruit production and fruit juice consumption and make the consumers conscious about fruit juice consumption.

According to the campaigns and advertisements on the fruit juice consumption in the domestic market and with the development of the consumption consciousness, it is expected that the interest to the fruit juice consumption will increase.

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