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Bottled Water Consumption Habits and Purchase Behaviours of Consumers in the Urban Areas of Adana

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ARTICLE INFO	ABSTRACT
	In recent years, the world population, urbanization process and need for natural water resources have increased. Therefore, providing the safe and clean drinking water has become an important topic of our day. This research was carried out to determine the bottled water consumption habits and purchasing behaviours of consumers. Primary data were obtained from 384 consumers living in urban areas of Adana province. The demographic characteristics and consumption habits of consumers were determined by calculating frequencies, ratios and averages. Factor analysis was used to determine the factors that affect the purchasing behaviours of the consumers and the cluster analysis were used to distinguish consumers with different perception levels from those with similar characteristics. Results indicated that 40.4% of participants consumed bottled water and 85.2% of these consumers took into account the brand of bottled water. Factor analysis revealed that 3 factors, product characteristics, packaging and price, and recognition affected purchasing behaviours in this sample. As a result of the K-means clustering analysis consumers in this study were divided into 3 groups. The most important factors for consumers in these observed clusters were shelf life, product freshness and product hygiene.

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Introduction

Bottled water, which is a healthy and reliable source of drinking water, has become a major market due to the rapid decline of clean water resources, global warming and migration from villages to the city. The idea that the network water is dirty in large cities, change in consumer preferences and awareness about healthy life also has contributed to this process. (Tümer et al., 2011). For the purposes of the current work, bottled water is defined as water that is kept in bottles or other containers, which is suitable for human consumption and does not contain added substances other than those that are appropriate for health and which inhibit microbial growth (Tosun, 2005).

Turkey has 3690 m³ of drinking water per person. According to estimates, if the population of Turkey reaches 100 million by 2030, the per capita drinking water consumption capacity will decrease to 1000 m³ (Tosun, 2005). Therefore, the drinking water demand that is estimated to increase is important for the drinking water industry. In Turkey, packaged water was first introduced to the market in 1997 and in 2015 bottled water consumption per capita had reached 139 litters with a market size of around 1.3 billion dollars (SUDER, 2016). By 2016, there were 264 bottled water brands available to consumers, 216 of which produce spring water; while 36 produce mineral water and 12 produce filtered water (Gül and Akpinar, 2012).

Today, there are a number of health concerns about tap water. Many people now believe that bottled water is healthier than tap water and have placed increased importance in the consumption of bottled water. In the literature, a number of studies report on bottled water consumption habits of consumers.

Bal (2014) examined consumers' behaviour toward bottled water consumption and the factors affecting it in Tokat city centre. Results indicated that more than half of participants (54%) consumed bottled water and, according to consumers, the most important reason for consuming bottled water was the feeling that tap water is unsafe to drink. Ferrier (2001) reviewed history of bottled water and the current structure of the bottled water industry in detail.

As part of his conclusion, Ferrier underlined that bottled water has become a common habit in many people's everyday lives and such as bad taste or quality of tap water, fitness objectives or safety concerns, and easy transport of bottled water lead consumers to buy bottled water. Based on his work in Florida (USA), Foote (2011) asserted that the current rates of use of natural water resources are unsustainable. He noted that extreme water consumption, especially in developed countries, puts pressure on water resources and irreversibly damages the environment. He also found that consumers' preference for drinking water tended to change in favour of bottled water as the quality of tap water decreased. Miller (2006) conducted study on the causes of the rapid growth of bottled water industries in the USA. He compared tap water and bottled water in the study. According to this research, for people living in the United States or in other developed countries, bottled water is not "better" water, and steady consumption of bottled water is neither economically nor environmentally sensible. However, if such a person is traveling to areas where municipal water is unavailable or unreliable, then opting for bottled water makes slightly more sense. Quansah et al. (2015) found a relationship between age groups, income groups, educational levels and bottled water purchasing behaviours in the Ghanaian market. Their research also showed that quality, brand price, availability and package also influence consumers' choice of bottled water. Tümer et al. (2011) determined the factors affecting consumption of bottled water in Keçiören city. According to this research, when consumers bought bottled water, they were most concerned about the odour, flavour and turbidity of the water, while advertisements, promotions and packaging of the water were the least important factors for consumers.

Although many studies on bottled water have been conducted, none have been done in Adana province. It is implied in the previous studies and also observed that consumers prefer to use bottled water and clustered by these preferences. The purpose of this study is to determine reasons for individuals consume bottled water, what factors affect its consumption and to cluster consumers who have different perception levels about bottled water.

Material and Methods

Material
The main material of the study consisted of primary data which were obtained from face to face questionaire with consumers in Adana province. In order to prepare the questionnaire used in the study, similar studies were examined (Bal, 2014; Foote, 2011; Janmaat, 2007; Jones et al., 2006; Talatala, 2008; Tümer et al., 2011). The questionnaire was pretested on a set of 20 participants to assess its validity and reliability. According to results of Pre-survey application, the questionnaire was successful. Later, the final version of the questionnaire was compiled. The questionnaire consists of three parts. In the first part, questions about demographic characteristics, in the second part, questions about purchasing preferences and in the third part, questions about factors effecting purchasing behaviour were asked.

In order to measure the perception of the consumers about the criteria of consuming bottled water and its underlying factors, a questionnaire on different items related to the attributes of preferring bottled water was constructed on 5-point Likert scale for all fifteen variables. These variables used in factor analysis and clustering analysis were selected by examining previously published studies on bottled water (Bal, 2014; Foote, 2011; Janmaat, 2007; Tümer et al., 2011). Additionally, the characteristics of bottled waters in the market were investigated. The expressions were measured on the 5-point Likert scale where 5, indicates absolutely important and 1 indicates, absolutely unimportant.

Method Used to Determine the Sampling Size
The sample size of the study was determined by Simple Random Probability Sampling based on Main Mass Ratios. This sampling method is frequently used in consumer household studies (Mutlu, 2007) and is given below (Malhotra, 2004; Hair et al., 2000).

$$n = z^2 \frac{(p \times q)}{d^2}$$

n : Sample volume

z : 1.96 (standard z-value corresponding to 95% confidence level),

p : The percentage of the population that has a specific feature based on preliminary information or judgments about the topic being examined. In such cases, it is recommended to take 50% of p, which will give the highest value in the multiplication of p (1-p), to ensure that the sample size is as large as possible.

q : (1-p) The percentage of the population that does not have the relevant feature.

d : Acceptable error tolerance level. This was set at ± 5% in this study.

Based on this method, the sampling volume was calculated as follows:

$$n = (1.96)^2 \frac{(0.50 \times 0.50)}{(0.05)^2} = 384$$

The result was a sample size of 384 with 95% confidence level and 5% error margin. In order to ensure accurate representation of individuals with different socio-economic levels, the number of samples determined was distributed proportionally between the districts of Seyhan, Yüreğir, Sarıçam and Çukurova, which are located in the center of Adana. Thus, a total of 384 questionnaires were distributed in these regions (176 in Seyhan, 93 in Yüreğir, 80 in Çukurova and 35 in Sarıçam). Numbers of questionnaires were determined according to population density of these districts. Consumers who responded to the questionnaire were separated into 2 groups - those who don't consume bottled water (i.e., those who typically consume tap water) and those who regularly consume bottled water.

Method Used in Data Analysis

Factor analysis: Factor analysis is a technique that is used to reduce a large number of variables into fewer numbers of factors. This technique extracts maximum common variance from all variables and puts them into a common score (Altunışık et al. 2012). The main goal of factor analysis is to detect the number of basic influences underlying a concern of variables. Additionally, other goals of factor analysis are to measure the extent to which each variable is related with the factors, and to attain information about their nature from observing which factors contribute to performance on which variables (Cudeck, 2000). The variables used in this study are taste, mineral content, shelf life, freshness, hygiene, ph value, packaging, brand, recycling, price, different size, advertisement, salesroom and production place.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in your variables that might be caused by underlying factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with data. If the value is less than 0.50, the results of the factor analysis probably won't be very useful.

Bartlett's test of sphericity tests the hypothesis that the correlation matrix is an identity matrix, which would indicate that variables are unrelated and, therefore, unsuitable for structure detection. Small values (less than 0.05) of the significance level indicate that a factor analysis may be useful (IBM, 2017).

In order to determine the number of factors, the researcher, after extraction, must decide how many factors to retain for rotation. Both over extraction and under extraction of factors retained for rotation can have deleterious effects on the results. The default in most statistical software packages is to retain all factors with eigenvalues greater than 1.0 (Costello and Osborne, 2005). Factor loads higher than + 0.30 are significant, those higher than + 0.40 are more important, and factor loads with +0.50 and higher are interpreted as very important (Kalayci, 2006).

Reliability is concerned with the ability of an instrument to provide stable and consistent measurements. The reliability of an instrument is closely associated with its validity, such that an instrument cannot be valid unless it is reliable. Cronbach's alpha is the most widely used objective measure of reliability. It is used to provide a measure of the internal consistency of a test or scale and expressed as a number between 0 and 1. The acceptable values of alpha are 0.70 – 0.90 (Tavakol, 2011).

The variables entered into the factor analysis were derived from previous studies about bottled water consumption (Foote, 2011; Karakuş et al., 2015; Tümer et al., 2011).

Clustering analysis: Cluster analysis is a multivariate method which aims to classify a sample of subjects (or objects) on the basis of a set of measured variables into a number of different groups such that similar subjects are placed in the same group (Cornish, 2007). It divides data into clusters that are meaningful, useful or both. If meaningful groups are the goal, then the clusters should capture the natural structure of the data (Steinbach et al., 2013). There are a number of different methods that can be used to carry out a cluster analysis. In this study, the K-means algorithm, which is one of the most widely used non-hierarchical clustering algorithms, was used. With a large number of variables, K-Means may be computationally faster than hierarchical clustering (Santini, 2016). So k-means clustering method was selected in this study. The variables used in this study are taste, mineral content, shelf life, freshness, hygiene, ph value, packaging, brand, recycling, price, different size, advertisement, salesroom and production place.

Results and Discussion

Socio-demographic Characteristics of Participants

It was examined the ways in which bottled water consumption vary across different levels of various socio-demographic variables, such as income, gender, education, occupation, size of the family, and the number of children. Of the consumers who participated in the survey; majority of them (53.1%) were women and the others (46.9%) were men. Most participants (38.5%) fell within the 31 – 45 year age group and the average age of the sample was 38.3 years. Nearly half of the samples (48.4%) were high school graduates, 30.5% received only a primary education and 17.4% were university graduates. In terms of their occupation, 28.0% of respondents were workers, while 25.0% were civil servants. The vast majority of participants (67.7%) were married and the average household size was 4 (4.02) people with approximately 2 (2.2) children on average.

Consumers' income is of vital importance as it heavily influences purchasing power. In this research, different income groups were established, and income and total household income of participants were handled separately. The average monthly income was found to be 2092 TL. Most of the sample (61.2%) reported a monthly income between 1301 and 3000 TL. The average monthly household income was found to be 2739 TL, with 47.9% of consumers indicating that their monthly household income was less than 2000 TL and 33.9% reporting a household income within the 2001 – 4000 TL range (Table 1).

Information on Bottled Water Consumers

The relationship between socio-demographic property of consumers and bottled water purchasing behaviours were investigated in the study. It was found that 56,1% of women and 43.9% of men drank bottled water.

Across age groups, similar numbers of consumers have drunk bottled water. In this sample, 38.7% of bottled water consumers were between the ages of 31 and 45, 31% were between 18 and 30 years and 27.7% were between 46 and 60 years of age. Notably, university graduates were more likely to consume bottled water. While 58.2% of the college graduates who completed the survey consumed bottled water.

In the current study, it was determined that 33.3% of the bottled water consumers were civil servants and 26.5% were workers. However, since 58.2% of civil servants consumed bottled water, it is clear that bottled water is consumed more by those in this occupation.

In the current study, 68.3% of people who consumed bottled water were married. The number of children in the family is an important factor affecting food and other consumption patterns, with increasing implications for water consumption. While only 18.7% of the consumers with no children reported consuming bottled water, 50.4% of those with 1 or 2 children did.

Table 1 Socioeconomic characteristics of participants

Characters	Groups	N	%
Gender	Female	204	53.1
	Male	180	46.9
	Total	384	100.0
Age Groups	18-30	119	31.0
	31-45	148	38.5
	46-60	101	26.3
	>60	16	4.2
	Total	384	100.0
	Mean	38.3	
Education Level	Literates	11	2.9
	Primary S	117	30.5
	High S.	186	48.4
	University	67	17.4
	Master	3	0.8
	Total	384	100.0
Occupation	Worker	75	28.0
	C. Servant	67	25.0
	Artisan	52	19.4
	Retired	37	13.8
	*Others	37	13.8
	Total	268	100.0
Marital Status	Married	260	67.7
	Single	124	32.3
	Total	384	100.0
Household Size	1-2	44	11.5
	3-4	215	56.0
	>4	125	32.6
	Total	384	100.0
	Mean	4.02	
Having Child	0	85	22.1
	1-2	198	51.6
	3-4	96	25.0
	>4	5	1.3
	Total	384	100.0
	Mean	2.2	
Income Status ($/month)	0-1300 TL	105	27.4
	1301-3000 TL	235	61.2
	3001-4500 TL	32	8.3
	>4500 TL	12	3.1
	Total	384	100.0
	Mean	2092 TL	
Household Income Status ($/month)	0-2000 TL	184	47.9
	2001-4000 TL	130	33.9
	4001-6000 TL	57	14.8
	>6000 TL	13	3.4
	Total	384	100.0
	Mean	2739 TL	

*Others: Farmers, managers, self-employed individuals

A consumer's economic situation has a great influence on his/her purchasing behaviour. If the income and savings of a consumer are high, then he will purchase more expensive products. On the other hand, a person with low income and savings will purchase inexpensive products (Gajjar, 2013). In the current study, consumers were divided into income groups. One of the most remarkable result was obtained with those in the 4001 – 6000 TL income group. In this income group, 63.2% of respondents stated that they consumed bottled water. In the lower income groups, the percentage of those who consumed bottled water was lower levels (35.4%). In addition, it was determined that the average monthly household income of those who consume packaged water was 2984 TL, while those who do not consume packaged water had an average monthly household income of 2574 TL. Durga (2010) focused on the demographic and psychological factors related to bottled water purchasing behaviours in Surinam and found that high income individuals preferred bottled water. Demographic factors such as gender, age, education, however, did not affect bottled water purchasing behaviours. Yao (2011) reported that the most important predictors of bottled water consumption were advertising, education and bad quality of tap water.

In the current study, participants also reported on their monthly water expenditure. More than half of the participants (58.6%) reported spending between 41 TL and 80 TL a month on water, while 15.9% reported spending less than 40 TL. The average monthly water expenditure of consumers was 76.6 TL. While the average monthly water expenditure of bottled water consumers was 105.2 TL, those who didn't consume packaged water spent, on average, 57.3 per month on water. In addition, 92.7% of individuals who consumed packed water stated that their monthly water expenditures were over 120 TL. Monthly water expenditures for individuals who consume packed water were considerably higher than those who don't consume it.

Preferences of Bottled Water Consumers

Today, there are many concerns about the cleanliness and healthiness of tap water. Many people think packaged water is healthier and that its mineral content is more varied than tap water Tümer et al., 2011). This may help to explain why consumers find bottled water more and more desirable. In this part of the study, the consumption habits (consumption places, consumption amount, purchasing location, purchasing frequency, packaging size, etc.) of those who regularly consume packaged water are presented.

Those who regularly consumed packaged water in their daily lives amounted to 40.4% of the respondents (155 consumers). In a similar study carried out by Bal (2011) in Tokat, 54% of the sample consumed bottled water. Therefore, it can be said that the packaged water consumption rates differ from region to region. Additionally, in this study, bottled water consumers were asked where they bought their bottled water and 41.6% of them said that they typically buy it from the distributor. The frequency of purchase and the package size of the water were researched in this study and two key results are notable. First, within this sample, it was found that consumers who use packaged water at home preferred larger sizes of packaged water which they bought less frequently than those who consume packaged water in the workplace. A substantial proportion of consumers (61.8%) bought bottled water once or twice a week and preferred 5 or 10 liter packages. Second, people who consumed bottled water at their workplace preferred smaller sizes, which they bought more frequently. In fact, 81.5% of these consumers bought bottled water every day and 83,7% of them preferred 0.5- to 1.5 liter bottles. These consumers likely preferred smaller bottles at their workplace because they can be carried easily and drunk quickly.

The growing number of bottled water producers and the increasingly competitive environment has resulted in the need for increased differentiation of products. This necessity has stimulated the formulation of new concepts about brand use and other brand-related research, which now feature prominently in the literature. Businesses utilize the power of brands in order to make a strong connection with their consumers. Consumers gain knowledge about both products and businesses by looking at the brand (Aysen et al., 2012). In the current study, 85.2% of consumers stated that they preferred certain brands of packaged water over others. The main factors affecting brand choice were confidence in the trademark (61.4%) and the quality certificate of the brand (19.7%). Additionally, 15.1% of consumers stated that they don't attach importance to the brand when choosing packaged water since, as indicated by these consumers, "there is no difference among the brands".

A variety of factors contribute to the decision to consume a given product, and these factors, or their order of importance, differ from consumer to consumer. In the current study, in response to the question about the reason they consume packaged water, 64.5% of respondents indicated that packaged water is healthier than tap water and 27.7% of them said that it is cleaner than tap water. Similar results were reported by Doria (2006) who also determined that the taste of bottled water is very important for consumers. As with many other products, consumers have to keep their packaged water under appropriate conditions until it can be consumed. Bottled water that is not kept under proper storage conditions may vary in color and taste, may deteriorate in quality, and may undergo deformation of the packaging. Research also indicates that the chemicals in the PET (polyethylene terephthalate) used as packaging material can leak into the water after a certain period of time (Realsimple, 2017). It is necessary to store packaged water in a cool, dry place that does not receive direct sunlight and consume it within 10 days after opening the cover. Fortunately, 85.8% of consumers said that they knew the appropriate storage conditions for packaged water, which, according to 78.9% of these consumers, involved storing the water in a "cool place".

Factor Effecting Consumer Purchasing Behaviour on Bottled Water

Factor analysis was used to determine which factors significantly affect the purchasing behaviours of consumers in the study. In this study, only data gathered from packaged water consumers were subjected to the factor analysis. The KMO (Kaiser-Meyer-Olkin) criterion was found to be 0.869 and Bartlett's test of sphericity was found to be 0.000 (P<0.001), both of which indicate that the data are well suited for factor analysis. In addition, internal consistency was established, since a high correlation value (80% and over) was not detected among the variables in the correlation matrix obtained after the analysis. Reliability Analysis was applied to the data obtained from packaged water consumers in order to measure the internal reliability of the factors determined by factor analysis or of the pre-determined factors. Results of the reliability analysis indicated excellent internal reliability since the observed Cronbach's Alpha values were between 0.887-0.793, which is above the minimum acceptable value of 0.70 (Tavakol, 2011). Taken together, these values show that factor analysis was appropriately applied.

Initially, 15 variables captured different dimensions of consumer's thoughts on packaged water consumption. Following factor analysis, these variables were reduced to 3 factors (eigenvalue > 1). The first factor obtained, called product characteristics, accounted for 43.1% of the total variance; the second factor, packaging and price, accounted for 13.1% of the total variance; and, the third factor, recognition, accounted for 7.7% of the total variance. These 3 factors explained 63.9% of the total variance. Tümer et al. (2011) reported that there were 20 variables in their research about bottled water, which were reduced to 5 factors. The number of factors in Tümer et al.'s work is higher when compared to this study due to the number of variables. In this research some variables weren't used because participants were considered insignificant.

The variables under the product characteristics factor include taste, flavour and aroma, mineral content, shelf life, freshness, hygiene conditions and pH value. The variables that make up the packaging and price factor are the look of the packaging, the brand, the recyclability of the used packaging material, the price, and the availability of different packaging sizes. The variables that make up the recognition factor are brand advertisement, the place where the product is sold and the place where the product is produced (Table 2).

Cluster Analysis Results of Consumers' Opinions about Bottled Water

A hierarchical clustering followed by a K-means cluster analysis was used to specify the optimal number of clusters (so-called segments) yielding the highest degree of differentiation. This resulted in a three-cluster solution.

While performing K-means cluster analysis, the number of repetitions was set to ten. Three clusters emerged from this analyses and the number of consumers in these clusters was as follows: 95 persons in the first cluster, 29 persons in the second cluster and 31 persons in the third cluster According to cluster analysis (K-means method) there are three types of consumer; the responsible bottled water consumer (61.2% of the sample of the bottled water consumer), the conscious bottled water consumer (18.7%) and traditional bottled water consumer (20.0%). Similar scores within clusters are found for some variables while different results emerge from other important variables.

For consumers in the first cluster, the most important factor in the consumption of bottled water was the "shelf life" of the product. All of the consumers stated that the shelf life of the water is very important for them. Other important factors for this first cluster of consumers were "product hygiene", "freshness of product" and "taste of product". The factors that the consumers in this cluster regarded as relatively insignificant were "sales place of product (3.97)" and "product advertisement (3.70)".

Consumers in the second group stated that they gave more importance to the "freshness" (4.86) and "pH value" (4.79) of the packaged water they consumed. "Mineral content" (4.76), "Hygiene" (4.76) and "Flavour" (4.69) were other important factors for consumers in this group. Consumers in this group were less concerned with the "production place of product" (2.10) and "product advertisement" (1.93) than other factors.

Table 2 Factor loading for performance factors

Variable	Factor 1	Factor 2	Factor 3	Communality
Taste of product	0.815	0.110	0.158	0.771
Mineral content of product	0.804	0.032	0.186	0.758
Shelf life of product	0.775	0.378	0.131	0.734
Freshness of product	0.721	0.399	0.043	0.742
Hygiene of product	0.695	0.316	0.163	0.673
Ph Value of product	0.681	0.265	0.089	0.588
Packaging of product	0.328	0.732	0.050	0.636
Brand of product	0.079	0.678	0.146	0.652
Packaging recycling	0.236	0.592	0.433	0.524
Product Price	0.219	0.585	0.373	0.538
Size alternatives of packaging	0.417	0.582	0.369	0.557
Advertisement	0.104	0.188	0.827	0.694
Outlet of product	0.177	0.063	0.797	0.663
The place of product	0.031	0.423	0.703	0.597
Eigenvalues	6.03	1.84	1.08	
Percentage of variance %	43.1	13.1	7.7	
Cronbach's Alpha	0.887	0.826	0.793	

Factor 1: Product Characteristic, Factor 2: Packaging and Price, Factor 3: Recognition

Table 3 Water purchasing behaviours

Variables	Clust. 1	Clust. 2	Clust. 3	Total	Sig.
Product price is important	4.91	3.62	3.51	4.35	0.000
Hygiene of product is important	4.99	4.76	4.26	4.78	0.000
Freshness of product is important	4.99	4.86	4.06	4.75	0.000
Packing of product is important	4.78	4.41	3.74	4.48	0.000
Outlet of product is important	3.97	3.28	3.37	3.70	0.218
Brand of product is important	4.67	3.76	3.77	4.30	0.000
Advertisement is important	3.70	1.93	2.69	3.14	0.000
Taste of product is important	4.98	4.69	4.03	4.71	0.000
Shelf life of product is important	5.00	4.59	3.69	4.63	0.000
Ph value of product is important	4.84	4.79	3.63	4.55	0.010
Production place is important	4.38	2.10	3.46	3.75	0.106
Mineral content of product is important	4.86	4.76	3.74	4.59	0.000
Packaging size alternatives are important	4.87	3.76	3.09	4.26	0.000
It is important that the product packaging be recycled	4.96	4.07	3.91	4.55	0.000
Easy access to product is important	4.97	4.38	3.94	4.63	0.000

Note: 1; "Absolutely unimportant". 5; "Absolutely important"

The most important item for consumers in the third cluster was product hygiene and the least important item for these consumers was "product advertisement". In fact, as can be seen in Table 3, in all three consumer groups, advertisement of the product was the least important factor.

Conclusion

In this study we examined the habits and purchasing behaviours related to the bottled water consumption of individuals in the urban areas of Adana where increased population and urbanization are evident.

Even though tap water is a easily accessible and low-cost beverage with health benefits approximately four in ten individuals prefer bottled water. Results show that some socio-demographic factors can affect packaged water consumption. A larger proportion of participants of the lower-income groups were more likely to drink tap water. After all participants of the higher-income groups seem to have more confidence to bottled water. Additionally, education, gender, martial status were other determinants on bottled water consumption. Especially, among all the educational levels showed that, as individuals go higher on the educational level, the more they consume bottled water frequently. On the other hand, the reasons why some consumers didn't consume tap water were lack of confidence in tap water and worries about the hygiene of tap water. There was no relation between age group and bottled water consumption. As predicted, brand was very important for bottled water consumer. It should be noted that the percentage of individuals who consume packaged water was different in each of the other studies (Bal, 2014; Foote, 2011; Karakuş et al., 2015; Tümer et al., 2011). This is probably related to the quality of the tap water provided by the municipality, which differs from region to region. Additionally, people in underdeveloped regions especially might prefer tap water because of economic reasons.

In the study, factor analysis was carry out to determine the factors that affect purchasing behaviour toward bottled water. To obtain stronger factors for further analysis on responders ratings of the 15 variables was performed by using by principal-axis extraction method and pairwise wipe option. Three factors were chosen according to eigenvalue criterion, completely being found to account for 64% of the total variance.

Variables with the highest factor loadings are most

representative of the factor (Hair et al., 1998). For each factor there were some high loadings. The factors were labelled as follows to reflect the variables loading high on each factor.

- Factor 1 Product characteristics
- Factor 2 Packaging and price
- Factor 3 Recognition

It was the aim of the present study to find different consumer groups that differ in their attitudes and their purchasing behaviour about bottled water consumption. This goal was achieved by grouping the consumers into three clusters according to their bottled water consumption preferences. Based on our results, we derived specific marketing implications for each cluster. These implications can help develop a more differentiated market segment for bottled water manufacturers.

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