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Review Article

Consumer Awareness, Attitudes and Preferences of Functional Bevarage Hardaliye

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Abstract

Traditional foods are important for the future functional food industry, and they might inspire the development of new products. Hardaliye is a functional beverage obtained from the lactic acid fermentation of dark colored aromatic grapes. The aim of this research is to investigate the perceptions, attitudes, and behaviors of Hardaliye between 300 participants who lived in Istanbul. The names of the developed surveys have been stated as the "Awareness of the Hardaliye", "the Obstacles to the Consumption of the Hardaliye", and "the Reasons for the Preference of the Hardaliye". According to the research results, the awareness level of Hardaliye is low. The age group with the highest recognition of the Hardaliye is 50 and above. The awareness of Hardaliye is higher among participants who consume any functional beverage. In addition, the participants who know that the raw material of Hardaliye is grape, has a high recognition of Hardaliye. It has been revealed that those who have not heard of Hardaliye before, those who do not consume any functional drinks, and those who do not know the raw material of Hardaliye have more obstacles for Hardaliye consumption. It was determined that the participants who heard Hardaliye before, knew the raw material of Hardaliye and consumed any functional drink had higher levels of reasons to prefer Hardaliye. Although there were many research about the functional properties, health benefits, consumers don't familiar about the this traditional functional beverage.

Keywords: Recognition, Hardaliye, Kırklareli, Reasons for preference, Local beverage

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Introduction

The most important factors affecting consumer preferences are related with the geographical, historical, and economic structure or culture of a country. Culture is the most important determining factor in food and beverage selection. There are significant differences between countries and cultures in the food and beverage preferences of consumers [1].

Hardaliye is generally produced around Kırklareli in the Thrace Region [2]. It is non-alcoholic grape-based fermented beverage and consumed since ancient times [3]. Mainly red grape juice and pomace was mixed with whole/ground or heat-treated mustard seeds (0,3-0,4%), sour cherry leaves and benzoic acid (0,1%) and fermented at room temperature nearly 10 days. Hardaliye which is the product of lactic acid fermentation of dark colored aromatic grapes production techniques differ by the people of the region. The main production steps of Hardaliye are listed as crushing the washed grapes, fermentation of crushed grapes, cherry leaves and mustard seeds, and filtering the mixture [4].
Hardaliye is characterized as a mild throat-burning beverage with a bitter taste. In 2017, Kırklareli Hardaliye was registered with the sign of origin.There are differences in the stages of traditional and industrial Hardaliye production. In the traditional method, mustard grains are lightly crushed together with the grapes. Next, mustard seeds, a layer of black grape puree and a layer of cherry leaves are filled into barrels. In the final stage, the mixture in these filled barrels is fermented for 10-15 days. In the industrial method, the grapes are first washed and mashed in barrels. In the next step, crushed mustard seeds and 0.1% benzoic acid are added into the barrel and the mixture in the barrels is left to ferment for 10 days at room temperature (18–24°C). In this method, the fermentation time varies depending on the ambient temperature. The mixture, whose fermentation is completed at the last stage, is filtered, bottled and cooled [1].

Chemical and microbiological properties are studied detailly in literature and results showed that Hardaliye have many health benefits such as beneficial for anemia, cardiac diseases and cancer and categorized as functional beverage [1, 4, 15-17] especially colon cancer [1]. Hardaliye contains more potassium, magnesium, zinc and selenium minerals and antioxidants, more phenolics, quercetin, gallic acid, and trans-resveratrol than grape juice. An anti-cancer effect of hardaliye is related with repressing FoxM1 expression [1].
The aim of this study is to determine the awareness and consumption level of Hardaliye. For this purpose, first of all, all the details about Hardaliye were included, and asked to 300 consuörs and then the results obtained within the framework of the analysis of the data collected by the survey method were interpreted.

Materials and Methods

The population of the research consists of individuals over the age of 18 living in Istanbul. The sample of the research consists of 300 participants residing in Istanbul, selected by simple random method from the population. Data were collected from the participants through an online survey.
This research aimed to determine effect of socio demographic properties like age, education level, profession, monthly income on consumer buying behavior, nutrition knowledge level on consumption of Hardaliye.

Since the Hardaliye consumption preferences didn’t study before, hypothesis was obtained because of the literature reviews.

The hypotheses of the research are given below:

H1: Awareness of Hardaliye differ according to consumer age
H2: Awareness of Hardaliye differ according to consumer gender
H3: Awareness of Hardaliye differ according to previous knowledge level of Hardaliye
H4: Awareness of Hardaliye as a functional beverage differ from other bevarages
H5: Awareness of Hardaliye differ based on knowledge about the main ingredient
H6: Obstacles for consumption of Hardaliye differ according to their age
H7: Obstacles for consumption of Hardaliye differ according to their gender
H8: Obstacles for consumption of Hardaliye differ according to previous knowledge level of Hardaliye
H9: Obstacles for consumption of Hardaliye as a functional beverage differ from other bevarages
H10: Obstacles for consumption of Hardaliye differ based on knowledge about the main ingredient
H11: Consumers preferences of Hardaliye changes according to their age
H12: Consumers preferences of Hardaliye changed depending on gender
H13 Consumers preferences of Hardaliye changes according to their previous information level about it
H14: Consumers preferences of Hardaliye changes because of its functional properties
H15: Consumers preferences of Hardaliye changes according to their knowledge about the main ingredient

The data was collected through 300 questionnaires nad processed using statistical software IBM SPSS 25.0 program and analyzed by descriptive statistics such as frequency, percentage, mean and standard deviation, and inference statistics to test the hypotheses. In the analyzes, the socio-demographic information of the participants was examined with descriptive statistics. In the research, firstly, internal consistency analysis was conducted for Hardaliye Awareness Survey, Hardaliye Consumption Obstacles Survey and Hardaliye Reasons for Preference Survey. If there was any inconvenience between the data, the consistency of the answers given by the participants to the scale statements were discussed. Then, the personal information of the participants and their answers to the survey statements were evaluated. In addition, the assumption of normal distribution of the scales was evaluated by looking at the skewness and kurtosis coefficients, and parametric test methods were preferred. While the "independent sample t test" was used in the comparisons of the variables satisfying the assumption of normal distribution in 2 groups, "one-way analysis of variance (One-way ANOVA)" was used in the comparisons of groups of three or more. Statistical significance was evaluated at the $p<0.05$ level in all the results obtained.

Results and Discussion

Explanatory Factor Analysis

Yaşlıoğlu [5], it is stated that “the smallest sample number for factor analysis should be 50”. The sample group of 300 people was considered to be sufficient for the research.

“Exploratory factor analysis may not be suitable for all data structures. The suitability of the data for factor analysis can be examined with the Kaiser-Meyer-Olkin (KMO) coefficient and the Barlett Sphericity test, and it shows that a value below 0.5 is unacceptable. In addition, the significance value of the Barlett Sphericity test should be less than 0.05” [6]. However, the scale expressions must satisfy the univariate normality assumption, and the univariate normality assumption was evaluated by looking at the skewness and kurtosis coefficients. “The skewness and kurtosis values of the scale expressions are

between +1.50 and -1.50 indicates that the variables comply with the univariate normality assumption" [7]. In the study conducted by George and Mallery [8], it was stated that the limit values of the skewness and kurtosis coefficients were wider and were accepted between +2.00 and -2.00. As a result, it was determined that all of the scale expressions were within the specified ranges, there were no extreme values, and they provided the assumption of univariate normality.

According to the principal components analysis applied to the data obtained as a result of the answers given to the questions in the "Hardaliye Awareness Survey", it was understood that the sample size was sufficient (KMO = 0.750) and the Barlett Sphericity test was also significant (X^2 =635.256; p < 0.001) [6]. In line with these results, the results of the "EFA" applied to the Hardaliye Awareness Survey are given in Table 1.

Table 1 EFA Results for Hardaliye Awareness Survey

In the EFA analysis applied to the data of the questions in the Hardaliye Awareness Survey, factors with an eigenvalue above 1.00, items with a common variance load above 0.50 and items with factor loads above 0.45 were included in the analysis. In addition, the difference between the load values of an item under two factors is expected to be greater than 0.10 [5]. 30 items consisted of one dimension and explained 63,128% of the total variance (Table 1).

In the EFA analysis applied to the data of the questions in the Hardaliye Consumption Obstacles Survey, factors with an eigenvalue above 1.00, items with a common variance load above 0.50 and items with factor loads above 0.45 were included in the analysis. In addition, the difference between the load values of an item under two factors is expected to be greater than 0.10 [5]. 12 items consisted of one dimension and explained 54,726% of the total variance (Table 2).

Table 2 EFA Results for Hardaliye Consumption Obstacles Survey

In the EFA analysis applied to the data of the questions in Hardaliye, Reasons for Preference Survey, factors with an eigenvalue above 1.00, items with a common variance load above 0.50, and items with factor loads above 0.45 and items with factor loads above 0.45 were included in the analysis. has been done. In addition, the difference between the load values of an item under two factors is expected to be greater than 0.10 [5].15 items consisted of one dimension and explained 90.06% of the total variance (Table 3).

Table 3EFA Results for Hardaliye Reasons for Preference Survey

Internal Consistency Analysis

"When look at the Cronbach's Alpha values of the Awareness of Hardaliye, the Obstacles of Hardaliye Consumption and the Reasons for Preference of Hardaliye; these values were determined respectively as 0.970, 0.896 and 0.992. These values are; reveals that the surveys are highly reliable and it has been concluded that it is suitable for use in the analysis (Table 4).

Table 4 Reliability Analysis Findings of the Surveys

Personal Information of Participants

According to the frequency analysis results in Table 5, when the distribution of the participants based on their age is examined; it is seen that 40.0% of the participants included in the research are between the ages of 18-25, 11.7% are between the ages

of 26-33, 14.7% are between the ages of 34-41, 12.0% are between the ages of 42-49, 11.3% are between the ages of 50-57 years old and 10.3% of them are 58 years old and over. The gender distribution of the participants included in the research is presented in Table 6.

Table 5 Age Distribution of Participants

Table 6 Gender Distribution of Participants

According to the frequency analysis results in Table 6, when the distribution of the participants based on their gender is examined; it is seen that 61.7% of the participants included in the research are female and 38.3% are male. The distribution of the hometown of the participants included in the research is presented in Table 7.

Table 7 Distribution of Participants' Hometowns

According to the frequency analysis results in Table 7, when the distribution of the participants based on their hometowns is examined; although the participants in the research live in Istanbul, only 2.0% of them are from Istanbul. The distribution of hearing status of Hardaliye before the participants included in the research is presented in Table 8.

Table 8 The participants' "Have You Heard of Hardaliye Before?" Distribution of Answers to the Question

According to the frequency analysis results in Table 8, it is seen that 64.3% of the participants had not heard of Hardaliye before. The distribution of any functional beverage consumed by the participants included in the research is presented in Table 9.

Table 9 "Do you consume any functional beverage?" Distribution of Answers to the Question

According to the frequency analysis results in Table 9, it is seen that 68.0% of the participants do not have a functional beverage that they consume. The distribution of the participants' knowledge of the main ingredient of Hardaliye is presented in Table 10.

Table 10 The participants were asked "What is the Main Ingredient of Hardaliye?" Distribution of Answers to the Question

According to the frequency analysis results in Table 10, 64.3% of the participants stated that they did not know the main ingredient of Hardaliye.

Findings on Survey Responses

When the analysis results obtained in Table 11 were evaluated;
- It was seen that the expression "16. Hardaliye is a beverage from the Thrace region." had the highest mean with an average value of 3.26±1.45. According to this result; it can be evaluated that the participants were consumed at the level where they were undecided about which region Hardaliye belongs.
- In the expression "8. Hardaliye is often consumed in my family." had the lowest mean with an average value of 1.66 ±0.74. According to this result; it can be concluded that the participants consumed Hardaliye at a very low level.

Table 11 Descriptive Analysis Results of Survey on Hardaliye Awareness

When the analysis results obtained in Table 12 were evaluated;
- It was seen from the expression "4. Far from sales points." showed the highest mean with an average value of 4.28±0.60. According to this result; it was seen that there was a very high level of obstacle, as the point of sale as far from the consumer.

- The expression "8. It has no superiority over other drinks." Had the lowest mean with an average value of 3.31±0.87. According to this result; it could be seen that the participants were not sure about the superiority of Hardaliye compared to other consumed bevarges and it didn't signifiactly effcet the obstacles to consume Hardaliye .

Table 12 Descriptive Analysis Results of the Survey on Obstacles to Hardaliye Consumption

According to the results obtained in Table 13, it was seen that the participants were generally undecided to drink hardaliye and this result may be explained by lack of participants knowledge about it. They didn't drink or heard Hardaliye before.

Table 13 Descriptive Analysis Results of Hardaliye Reasons for Preference Survey

Findings Regarding Surveys

According to the results in Table 14 it was found that the awareness of Hardaliye was very low, the perceptions of obstacles of Hardaliye consumption were high, and participants were undecided in their opinions to consume Hardaliye.

Table 14 Descriptive Analysis Results of Surveys

Difference Tests and Hypothesis Evaluation

The results of ANOVA shoved that hyphothesis H1 "Awareness of Hardaliye differ according to consumer age") was accepted (Table 15, $F=4.617$, $p<0.001$. However, between groups there was a statistically significant difference with the Bonferroni post-hoc test. When the analysis results were examined, it was concluded that the awareness level of Hardaliye of the participants aged 42-49 was lower than the level of awareness of Hardaliye of the participants aged 18-25, aged 50-57 and aged 58 and over, and this situation was statistically significant ($p<0.05$).

Table 15 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Age of the Participants

The results of the independent sample t-test were shown in Table 16. As a result of the analysis, it was determined that the awareness level of Hardaliye of female participants was higher than male participants, but this situation was not statistically significant ($p>0.05$). In this context, and the H2 hypothesis "Awareness of Hardaliye differ according to consumer gender" hypothesis was rejected.

Table 16 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Gender of the Participants

The hypothesis H3 "Awareness of Hardaliye differ according to previous knowledge level of Hardaliye" hypothesis was accepted depending on the results of the independent sample t-test shown in Table 17. The awareness level of the participants who had heard of Hardaliye before was significantly higher than the participants who had not heard of Hardaliye ($p<0.05$)

Table 17 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Participants' Hearing of Hardaliye

It was determined that the awareness level of Hardaliye of the participants who consumed any functional beverage was higher than the participants who did not consume it, and this situation was statistically significant ($p<0.05$). In this context, when the hypothesis was evaluated, H4 "Awareness of Hardaliye as

a functional beverage differ from other bevarages" hypothesis was accepted shown in Table (18).

Table 18 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Status of Any Functional Beverage Consumed by the Participants

The results of the independent sample t test showed that the awareness level of the participants who knew the main ingredient of Hardaliye was higher than the participants who did not know, and this situation was statistically significant ($p<0.05$) (Table 19). In this context, H5 "Awareness of Hardaliye differ based on knowledge about the main ingredient" was accepted.

Table 19 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Participants' Knowledge of the Main Ingredient of Hardaliye

The results of ANOVA presented in Table 20 showed that the age groups of the participants, the perceptions of the obstacles to Hardaliye consumption differ statistically ($F=3.611$, $p=0.003$) and H6 "Obstacles for consumption of Hardaliye differ according to their age" was accepted. However, between groups statistically significant difference were examined with the Bonferroni post-hoc test and it was concluded that the level of obstacles to Hardaliye consumption of the participants aged 26-33 was higher than the levels of obstacles to consumption of Hardaliye of the participants aged between 18-25 and 50-57 years old, and this situation was statistically significant ($p<0.05$).

Table 20 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Age of the Participants

The results of the independent sample t-test shown in Table 21 indicated that the level of obstacles to Hardaliye consumption of male participants was higher than female participants, but this situation was not statistically significant ($p>0.05$). In this context, when the hypothesis was evaluated; H7 "Obstacles for consumption of Hardaliye differ according to their gender" hypothesis was rejected.

Table 21 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Gender of the Participants

The level of obstacles to consumption of Hardaliye was higher in the participants who had not heard of Hardaliye before, and this situation was statistically significant ($p<0.05$). The results of the independent sample t-test were shown in Table 22. In this context, when the hypothesis was evaluated, H8 "Obstacles for consumption of Hardaliye differ according to previous knowledge level of Hardaliye" hypothesis was accepted.

Table 22 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Participants' Hearing of Hardaliye

The results of the independent sample t-test are shown in Table 23. As a result of the analysis; It was determined that the level of obstacles to Hardaliye consumption was higher in the participants who did not consume any functional beverage, and this situation was statistically significant ($p<0.05$). In this context, when the hypothesis is evaluated; "H9: Obstacles for consumption of Hardaliye as a functional beverage differ from other beverages" hypothesis was accepted.

Table 23 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the

Status of Any Functional Beverage Consumed by the Participants

It was determined that the participants who did not know the main ingredient of Hardaliye had a higher level of barriers to consumption of Hardaliye than those who knew, and this situation was statistically significant ($p<0.05$). The results of the independent sample t-test were shown in Table 24. In this context, hypothesis H10 "Obstacles for consumption of Hardaliye differ based on knowledge about the main ingredient" was accepted.

Table 24 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Participants' Knowledge of the Main Ingredient of Hardaliye

Between the age groups of the participants, the perceptions of Hardaliye were found as statistically ($F=20.133$, $p<0.001$) different. According to this result, H11 "Consumers preferences of Hardaliye changes according to their age." hypothesis was accepted. The results of ANOVA were shown in Table 25. However, between groups there was a statistically significant difference with the Bonferroni post-hoc test. When the analysis results were examined; It was concluded that preference of Hardaliye of the participants aged between 42-49 were lower than other age groups, and this situation was statistically significant ($p<0.05$).

Table 25 Differentiation of the Average Scores Obtained from the Reasons for Preference Hardaliye According to the Age of the Participants

The results of the independent sample t-test analysis showed that male participants preferred Hardaliye higher than female participants, but this situation was not statistically significant ($p>0.05$) and hyphothesis H12 "Consumers preferences of Hardaliye changed depending on gender" hypothesis was rejected.

Table 26 Differentiation of the Average Scores Obtained from the Reasons for Preferece Hardaliye According to the Gender of the Participants

The results of the independent sample t-test were shown in Table 27. As a result of the analysis, it was determined that the participants who had heard Hardaliye before showed a higher level of reasons for preference Hardaliye than the participants who had not heard of it, and this situation was statistically significant ($p<0.05$). In this context, when the hypothesis was evaluated; hypothesis H13 "Consumers preferences of Hardaliye changes according to their previous information level about it" was accepted.

Table 27 Differentiation of the Average Scores Obtained from the Reasons of Preference Hardaliye According to the Participants' Hearing of Hardaliye

The results of the independent sample t-test (Table 28) showed that preference of Hardaliye were higher in the participants who consumed any functional beverage than the participants who did not consume, and this situation was statistically significant ($p<0.05$). In this viewpoint, when the hypothesis H14 was evaluated, "Consumers preferences of Hardaliye changes because of its functional properties" was accepted.

Table 28 Differentiation of the Average Scores Obtained from the Reasons for Preference Hardaliye According to the Status of Any Functional Beverage Consumed by the Participants

The participants who knew the main ingredient of Hardaliye had a higher level of reasons for consumption of Hardaliye than the participants who did not know, and this situation was statistically significant

($p<0.05$). The results of the independent sample t-test were shown in Table 29. In this context, when the H15 hypothesis was evaluated, "Consumers preferences of Hardaliye changes according to their knowledge about the main ingredient" was accepted. The general evaluation of the hypotheses analyzed according to the socio-demographic characteristics of the participants included in the research was presented in Table 30.

Table 29 Differentiation of the Average Scores Obtained from the Reasons for Preference Hardaliye According to the Participants' Knowledge of the Main İngredient of Hardaliye

Table 30 Analysis of Hypothesis According to the Socio-Demographic Characteristics of the Participants

Conclusion

It was seen that 3 of the 15 hypotheses were rejected and the other hypotheses were accepted (Table 30). No significant differences were obtained between male or female about the awareness of Hardaliye, the obstacles to Hardaliye consumption and the reasons for preference of Hardaliye.

When the differences between the participants' age, gender, previous information about Hardaliye like functional beverage, being heard the main ingredient of Hardaliye before and the mean scores obtained from the research variables were examined, it was concluded that gender was not effective on these factors.

In another way, the perceptions of the awareness of Hardaliye differ significantly according to age, having heard before, consuming any functional beverage, and knowing the main ingredient of Hardaliye. Obstacles to Hardaliye consumption showed differences according to age, hearing about Hardaliye before, consuming any functional beverage, and knowing the main ingredient of Hardaliye. Similarly, it is understood that gender didn't significantly affected.

According to the results of the study, it was obtained that the level of awareness of Hardaliye is quite low, consumers don't familiar about this traditional functional beverage. In addition, the consumption of functional beverages among the participants is also quite low. The results of the research showed that the awareness level of Hardaliye is higher among the participants aged 50 and over. Participants who have heard Hardaliye before showed a high level of awareness and high preference for Hardaliye, while the level of obstacles to Hardaliye consumption is lower. The awareness level of Hardaliye is significantly higher in participants who consume a functional food and beverage.

In the literature, it is seen that Hardaliye has not been investigated within the scope of consumer awareness, reasons for consumption, preference and obstacles to consumption. Researchers were mostly carried out on the quality of Hardaliye, its sensory properties, production technology, the effect of the substances used on fermentation, pasteurization, chemical and microbiological quality, health benefits on human. But there were no information about the consumer preferences and this research lightens the consumer awareness level.

In the study of Turkoz Bakirci et al. [9], the effect of local product festivals on gastronomic tourism within the scope of Urla example were studied. As a result of the research, it was determined that food festivals significantly increased awareness of local foods. In the study of Alabacak [10], discussed the awareness of traditional foods in Turkish culinary culture within the framework of Ankara example. In the study, it was determined that the rate of hearing

about traditional food is very low. In the study of Çakır and Çakır [11], the awareness of Hayrabolu Cheese Dessert was investigated. In the study, the awareness of the dessert was determined to also quite low. Even in Tekirdağ cuisine which dessert mostly prepared in this area, awareness is unfortunately at a quite level. Unfortunately, findings of this study was in parallel with the studies in the literature

However, there are some positive results. Cömert and Dinç [12], investigated the awareness of medicinal plants by young people. The results of the research showed that the majority of the young people had knowledge about medicinal plants. Alabacak [10], investigated the awareness of traditional Turkish foods in the province of Ankara and found that the level of awareness of traditional Turkish was increasing. In the study of Sandıkcı [13], conducted research on the awareness of ceremonial meals in Afyon. According to the results of the research, the level of awareness of ceremonial dishes decreases as generations change. Accordingly, while the participants from the X generation have more information about ceremonial meals, the level of knowledge of the Y generation participants is lower. In this study is similar to Sandıkcı's (2019) [13] research in this finding. In this study, the level of awareness increases with age.

Within the scope of the analyzes made and the results obtained in this study, it is recommended to organize product festivals, information's about health benefits of hardaliye in social media, TV programs etc to increase the awareness of Hardaliye and to reduce the level of obstacles to Hardaliye consumption.

Another suggestion to increase the awareness and consumption of Hardaliye is to send products to accommodation service providers with various marketing activities by the producer brands. In this way, awareness of domestic tourists will be increased and it will be possible to introduce Hardaliye to foreign tourists. In later studies, the awareness and consumption of Hardaliye can be studied to fill the gap in the literature.

There are many kinds of traditional functional foods and beverages that contain extraordinary bioactive compounds like Hardaliye. Although Hardaliye has important health benefits, familiar taste, and functional properties, awareness of Turkish consumer was limited as seen in the study. This kind of functional traditional beverages need to be increased familiarities, consumer knowledge and may provide increase in marketing size. Because the development of designed functional foods and beverages without a noticeable reduction in their flavor and sensory acceptability has become the modern-day challenge for researchers. Recently, the interest in developing functional foods has been thriving, driven largely by the market potential for foods that can improve the health and wellbeing of the consumer. Increasing consumer awareness in combination with advances in various scientific domains provide companies with unique opportunities to develop an almost infinite array of new functional food concepts. The development and marketing of these products is rather complex, expensive, and risky, as special requirements should be fulfilled.

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TABLES

Table 1 EFA Results for Hardaliye Awareness Survey

Awareness Survey of Hardaliye	Skewness	Kurtosis	Factor Load.
1. Some features of Hardaliye come to my mind quickly.	,707	-1,353	,802
2. I know what Hardaliye looks like.	,681	-1,412	,801
3. I can easily remember the image of Hardaliye.	,764	-1,212	,801
4. I can recognize Hardaliye among other drinks.	,681	-1,412	,801
5. I am aware of what Hardaliye is.	,687	-1,397	,802
6. It is difficult for me to imagine Hardaliye in my mind.	,357	-1,564	,770
7. Hardaliye is a traditional beverage.	,104	-1,416	,883
8. Hardaliye is often consumed in my family.	,830	-,038	,678
9. I know the smell of Hardaliye.	,553	-1,460	,810
10. Hardaliye is a non-alcoholic beverage.	-,261	-,996	,964
11. Hardaliye does not contain artificial sugar.	-.433	-.122	,949
12. Hardaliye contains high energy.	-,536	-.463	,973
13. Hardaliye helps blood production.	-.585	-,532	,983
14. Hardaliye is a useful beverage.	-.530	-.566	,990
15. Hardaliye has high nutritional values.	-.419	-,543	,978
16. Hardaliye is a beverage from the Thrace region.	-.236	-1,079	,972
17. Water can be consumed with Hardaliye.	-,231	-.411	,954
18. Coffee can be consumed with Hardaliye.	-.179	-,056	,938
19. Soda can be consumed with Hardaliye.	-.222	-,196	,943
20. Hardaliye can be consumed with alcoholic beverages.	-,551	,325	,890
21. Hardaliye is a beverage of animal origin.	-,080	-1,942	,575
22. Hardaliye is a beverage of plant origin.	-.239	-,783	,935
23. Hardaliye is a probiotic beverage.	-,641	,095	,903
24. Hardaliye should be consumed under the supervision of a doctor.	-.244	-1,685	,563
25. Some foods can cause poisoning when consumed with Hardaliye.	-.326	-1,653	,504
26. Hardaliye is a functional beverage.	-.414	-.227	,930
27. Hardaliye is a beverage that should be consumed carefully and has various harmful effects.	-.138	-1,732	,511
28. People with overweight problems should not consume Hardaliye.	-1,431	,048	,838
29. Hardaliye is not suitable for vegetarians and people on a vegan diet	-,204	-,813	,574
30. Excess consumption of Hardaliye is dangerous.	-.382	-1,630	,538
Total variance: 63,128% ; KMO : .750; x^2 :635,256, p<.001			

Table 2 EFA Results for Hardaliye Consumption Obstacles Survey

Hardaliye Consumption Obstacles Survey	Skewness	Kurtosis	Factor Load.
1. Expensive	-.599	-,210	,723
2. Not easy to find in markets	-.530	1,564	,930
3. Lack of regular supply	,223	-.445	,872
4. Far from sales points	-,564	1,465	,950
5. Difficult to search, find and supply	-,564	1,465	,950
6. Few sales areas	-,482	1,769	,948
7. Low trust in manufacturers	-,653	1,129	,631
8. No superiority over other beverages	-.219	-,103	,455
9. Insufficient information about the products	-,601	,178	,753
10. Not tastier than other drinks	-,171	-.595	,561
11. Not looking tasty and attractive	-.376	-,086	,525
12. Not enough brands	-.334	,178	,651
Total variance: 54,726% ; KMO : 0.856; x^2 :105,238, p<.001			

Table 3 EFA Results for Hardaliye Reasons for Preference Survey

Hardaliye Reasons for Preference Survey	Skewness	Kurtosis	Factor Load.
1. Hardaliye contains many vitamins and minerals.	-,262	,877	,975
2. Hardaliye is beneficial for my health.	-.489	1,361	,980
3. Hardaliye is a nutritious.	-.489	1,361	,980
4. Hardaliye has high nutritional values.	-,343	1,078	,989
5. Hardaliye is natural.	-.299	1,115	,986
6. Hardaliye has natural ingredients.	-.299	1,115	,986
7. Hardaliye does not contain artificial ingredients.	-,141	1,335	,963
8. Hardaliye is produced without disturbing the nature of the products.	,008	1,682	,941
9. Hardaliye is produced and packaged with an environmentally approach.	,028	1,112	,854
10. Animals are not harmed in the production of Hardaliye.	-,087	1,488	,897
11. Animal rights are not violated in the production of Hardaliye.	-,087	1,488	,897
12. The appearance of Hardaliye is beautiful.	-,890	1,465	,881
13. The consistency and texture of Hardaliye is good.	-,724	1,791	,965
14. Hardaliye tastes good.	-,584	1,507	,978
15. Hardaliye is affordable.	-,784	1,305	,949
Total variance: 90.06% ; KMO : .950; x^2 :1035,108, p<.001			

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Table 4 Reliability Analysis Findings of the Surveys

Surveys	Cronbach's Alpha	N
Awareness of Hardaliye	,970	30
Obstacles of Hardaliye Consumption	,896	12
Reasons for Preference of Hardaliye	,992	15

Table 5 Age Distribution of Participants

	Demographic Feature	f	%
Age Status	18-25 Age Range	120	40.0
	26-33 Age Range	35	11.7
	34-41 Age Range	44	14.7
	42-49 Age Range	36	12.0
	50-57 Age Range	34	11.3
	Age 58 and Over	31	10.3
	Total	300	100.0

Table 6 Gender Distribution of Participants

	Demographic Feature	f	%
Gender	Female	185	61.7
	Male	115	38.3
	Total	300	100.0

Table 7 Distribution of Participants' Hometowns

	Demographic Feature	f	%	Demographic Feature	f	%
Hometown	Adana	18	6.0	Malatya	5	1.7
	Amasya	5	1.7	Manisa	4	1.3
	Ankara	18	6.0	Mardin	6	2.0
	Artvin	3	1.0	Mersin	5	1.7
	Aydın	10	3.3	Nevsehir	12	4.0
	Balikesir	21	7.0	Rize	13	4.3
	Bursa	10	3.3	Sakarya	7	2.3
	Canakkale	5	1.7	Samsun	9	3.0
	Cankiri	4	1.3	Sivas	7	2.3
	Corum	4	1.3	Tekirdag	15	5.0
	Denizli	7	2.3	Tokat	17	5.7
	Elazig	3	1.0	Trabzon	4	1.3
	Erzurum	12	4.0	Tunceli	5	1.7
	Istanbul	6	2.0	Uşak	4	1.3
	Izmir	10	3.3	Van	10	3.3
	Kastamonu	5	1.7	Yalova	7	2.3
	Kayseri	4	1.3	Yozgat	5	1.7
	Kirikkale	5	1.7	Zonguldak	7	2.3
	Kocaeli	5	1.7	Total	300	100.0
	Konya	3	1.0			

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Table 8 The participants' "Have You Heard of Hardaliye Before?" Distribution of Answers to the Question

	Demographic Feature	f	%
"Have you heard of Hardaliye before?"	Yes	107	35.7
	No	193	64.3
	Total	300	100.0

Table 9 "Do you consume any functional beverage?" Distribution of Answers to the Question

	Demographic Feature	f	%
"Do you consume any functional beverages?"	Yes	96	32.0
	No	204	68.0
	Total	300	100.0

Table 10 The participants were asked "What is the Main Ingredient of Hardaliye?" Distribution of Answers to the Question

	Demographic Feature	f	%
"What is the main ingredient of Hardaliye?"	I do not know	193	64.3
	Grape	88	29.3
	Grapes and Mustard	19	6.3
	Total	300	100.0

Table 11 Descriptive Analysis Results of Survey on Hardaliye Awareness

Awareness Survey of Hardaliye	**Min.**	**Max.**	**Average**	**SS**
1. Some features of Hardaliye come to my mind quickly.	1	5	2.12	1.53
2. I know what Hardaliye looks like.	1	5	2.14	1.55
3. I can easily remember the image of Hardaliye.	1	5	2.08	1.50
4. I can recognize Hardaliye among other drinks.	1	5	2.14	1.55
5. I am aware of what Hardaliye is.	1	5	2.15	1.56
6. It is difficult for me to imagine Hardaliye in my mind.	1	5	2.54	1.58
7. Hardaliye is a traditional beverage.	1	5	2.82	1.53
8. Hardaliye is often consumed in my family.	**1**	**4**	**1.66**	**.74**
9. I know the smell of Hardaliye.	1	5	2.22	1.51
10. Hardaliye is a non-alcoholic beverage.	1	5	3.15	1.40
11. Hardaliye does not contain artificial sugar.	1	5	2.80	1.06
12. Hardaliye contains high energy.	1	5	2.92	1.13
13. Hardaliye helps blood production.	1	5	2.97	1.15
14. Hardaliye is a useful beverage.	1	5	3.00	1.18
15. Hardaliye has high nutritional values.	1	5	2.99	1.19
16. Hardaliye is a beverage from the Thrace region.	**1**	**5**	**3.26**	**1.45**
17. Water can be consumed with Hardaliye.	1	5	2.93	1.19
18. Coffee can be consumed with Hardaliye.	1	5	2.83	1.11
19. Soda can be consumed with Hardaliye.	1	5	2.86	1.13
20. Hardaliye can be consumed with alcoholic beverages.	1	5	2.69	.96
21. Hardaliye is a beverage of animal origin.	1	3	2.04	.97
22. Hardaliye is a beverage of plant origin.	1	5	3.02	1.30
23. Hardaliye is a probiotic beverage.	1	5	2.71	.97
24. Hardaliye should be consumed under the supervision of a doctor.	1	3	2.12	.89
25. Some foods can cause poisoning when consumed with Hardaliye.	1	3	2.16	.89
26. Hardaliye is a functional beverage.	1	5	2.84	1.09
27. Hardaliye is a beverage that should be consumed carefully and has various harmful effects.	1	3	2.07	.89
28. People with overweight problems should not consume Hardaliye.	1	3	2.58	.82
29. Hardaliye is not suitable for vegetarians and people on a vegan diet.	1	5	2.44	1.00
30. Excess consumption of Hardaliye is dangerous.	1	3	2.19	.89

Table 12 Descriptive Analysis Results of the Survey on Obstacles to Hardaliye Consumption

Hardaliye Consumption Obstacles Survey	**Min.**	**Max.**	**Average**	**SS**
1. Expensive	2	5	4.07	.83
2. Not easy to find in markets	2	5	4.26	.59
3. Lack of regular supply	3	5	4.27	.52
4. Far from sales points	**2**	**5**	**4.28**	**,60**
5. Difficult to search, find and supply	2	5	4.28	,60
6. Few sales areas	2	5	4.23	.58
7. Low trust in manufacturers	2	5	4.01	.68
8. No superiority over other beverages	**1**	**5**	**3.31**	**.87**
9. Insufficient information about the products	2	5	4.24	.69
10. Not tastier than other drinks	1	5	3.35	.97
11. Not looking tasty and attractive	1	5	3.32	.85
12. Not enough brands	2	5	3.89	.70

Table 13 Descriptive Analysis Results of Hardaliye Reasons for Preference Survey

Hardaliye Reasons for Preference Survey	Min.	Max.	Average	SS
1. Hardaliye contains many vitamins and minerals.	**1**	**5**	**3.33**	**.92**
2. Hardaliye is beneficial for my health.	1	5	3.29	.85
3. Hardaliye is a nutritious.	1	5	3.29	.85
4. Hardaliye has high nutritional values.	1	5	3.31	.89
5. Hardaliye is natural.	1	5	3.30	.89
6. Hardaliye has natural ingredients.	1	5	3.30	.89
7. Hardaliye does not contain artificial ingredients.	1	5	3.24	.87
8. Hardaliye is produced without disturbing the nature of the products.	1	5	3.18	.85
9. Hardaliye is produced and packaged with an environmentally approach.	**1**	**5**	**3.02**	**.72**
10. Animals are not harmed in the production of Hardaliye.	1	5	3.07	.78
11. Animal rights are not violated in the production of Hardaliye.	1	5	3.07	.78
12. The appearance of Hardaliye is beautiful.	1	5	3.13	.73
13. The consistency and texture of Hardaliye is good.	1	5	3.23	,80
14. Hardaliye tastes good.	1	5	3.27	.83
15. Hardaliye is affordable.	1	5	3.26	.77

Table 14 Descriptive Analysis Results of Surveys

Scale	N	min.	Max.	Average.	SS	Skewness	Kurtosis
Awareness of Hardaliye	300	1.00	4.00	2.55	.89	-,627	-,623
Obstacles to Hardaliye Consumption	300	2.17	5.00	3.96	,49	-.358	1,460
Reasons for Preference Hardaliye	300	1.00	5.00	3.22	.79	-.238	1,294

Table 15 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Age of the Participants

Variable	Age	f	X̄	SS	*F*	*p*	*Group Difference*
Awareness of Hardaliye	(1) 18-25 Age Range	120	2.60	1.00	4,617	**,000**	**1 →4** **4 →5** **4 →6**
	(2)26-33 Age Range	35	2.46	.83			
	(3) 34-41 Age Range	44	2.39	1.06			
	(4)42-49 Age Range	36	2.06	.76			
	(5) 50-57 Age Range	34	2.90	,41			
	(6) 58 Years and Over	31	2.86	,42			

Table 16 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Gender of the Participants

Variables	Gender	f	X̄	SS	*t*	*p*
Awareness of Hardaliye	Female	185	2.61	.85	1,402	,162
	Male	115	2.46	.95		

Table 17 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Participants' Hearing of Hardaliye

Variables	Hearing of Hardaliye Before	f	X̄	SS	*t*	*p*
Awareness of Hardaliye	Yes	107	3.43	,25	18,862	**,000**
	No	193	2.06	.73		

Table 18 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Status of Any Functional Beverage Consumed by the Participants

Variables	Any Functional Beverage You Consume	f	X̄	SS	*t*	*p*
Awareness of Hardaliye	Yes	96	2.99	.90	6,152	**,000**
	No	204	2.34	,81		

Table 19 Differentiation of the Average Scores Obtained from the Awareness of Hardaliye According to the Participants' Knowledge of the Main Ingredient of Hardaliye

Variables	Main Ingredient of Hardaliye	f	X̄	SS	*t*	*p*
Awareness of Hardaliye	I do not know	193	2.06	.73	-18,862	,000
	Grape	107	3.43	,25		

Table 20 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Age of the Participants

Variable	Age	f	X̄	SS	*F*	*p*	*Group Difference*
Obstacles to Hardaliye Consumption	(1) 18-25 Age Range	120	3.91	,63	3,611	**,003**	**1 →2**
	(2)26-33 Age Range	35	4.21	.35			**2 →5**
	(3) 34-41 Age Range	44	3.89	,36			
	(4)42-49 Age Range	36	4.10	,31			
	(5) 50-57 Age Range	34	3.80	,48			
	(6) 58 Years and Over	31	3.96	.04			

Table 21 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Gender of the Participants

Variables	Gender	f	X̄	SS	*t*	*p*
Obstacles to Hardaliye Consumption	Female	185	3.92	.51	-1,863	,063
	Male	115	4.03	.45		

Table 22 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Participants' Hearing of Hardaliye

Variables	Hearing of Hardaliye Before	f	X̄	SS	*t*	*p*
Obstacles to Hardaliye Consumption	Yes	107	3.78	,49	-5,024	**,000**
	No	193	4.06	,46		

Table 23 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Status of Any Functional Beverage Consumed by the Participants

Variables	Any Functional Beverage You Consume	f	X̄	SS	*t*	*p*
Obstacles to Hardaliye Consumption	Yes	96	3.85	.61	-2,618	**,009**
	No	204	4.01	,42		

Table 24 Differentiation of the Average Scores Obtained from the Obstacles of Hardaliye Consumption According to the Participants' Knowledge of the Main Ingredient of Hardaliye

Variables	Main Ingredient of Hardaliye	f	X̄	SS	*t*	*p*
Obstacles to Hardaliye Consumption	I do not know	193	4.06	,46	5,024	**,000**
	Grape	107	3.78	,49		

Table 25 Differentiation of the Average Scores Obtained from the Reasons for Preference Hardaliye According to the Age of the Participants

Variable	Age	f	X̄	SS	*F*	*p*	*Group Difference*
Reasons for Preference Hardaliye	(1) 18-25 Age Range	120	3.36	,81	20,133	**,000**	**1 →4**
	(2)26-33 Age Range	35	3.46	.65			**2 →4**
	(3) 34-41 Age Range	44	3.33	,48			**3 →4**
	(4)42-49 Age Range	36	2.15	.90			**5 →4**
	(5) 50-57 Age Range	34	3.29	,36			**6 →4**
	(6) 58 Years and Over	31	3.40	,37			

Table 26 Differentiation of the Average Scores Obtained from the Reasons for Preferece Hardaliye According to the Gender of the Participants

Variables	Gender	f	X̄	SS	*t*	*p*
Reasons for Preference Hardaliye	Female	185	3.21	.72	-.248	,805
	Male	115	3.23	.89		

Table 27 Differentiation of the Average Scores Obtained from the Reasons of Preference Hardaliye According to the Participants' Hearing of Hardaliye

Variables	Heard of Hardaliye Before	f	X̄	SS	*t*	*p*
Reasons for Preference Hardaliye	Yes	107	3.99	,43	18,643	**,000**
	No	193	2.79	.58		

Table 28 Differentiation of the Average Scores Obtained from the Reasons for Preference Hardaliye According to the Status of Any Functional Beverage Consumed by the Participants

Variables	Any Functional Beverage You Consume	f	X̄	SS	*t*	*p*
Reasons for Preference Hardaliye	Yes	96	3.75	.58	8,948	**,000**
	No	204	2.97	.75		

Table 29 Differentiation of the Average Scores Obtained from the Reasons for Preference Hardaliye According to the Participants' Knowledge of the Main İngredient of Hardaliye

Variables	Main Ingredient of Hardaliye	f	X̄	SS	*t*	*p*
Reasons for Preference Hardaliye	I do not know	193	2.79	.58	-18,643	**,000**
	Grape	107	3.99	,43		

Table 30 Analysis of Hypothesis According to the Socio-Demographic Characteristics of the Participants

Hypotheses	Accept	Rejection
"H1: Awareness of Hardaliye differ according to consumer age"	✓	
"H2: Awareness of Hardaliye differ according to consumer gender"		✓
"H3: Awareness of Hardaliye differ according to previous knowledge level of Hardaliye"	✓	
"H4: Awareness of Hardaliye as a functional beverage differ from other bevarages"	✓	
H5: Awareness of Hardaliye differ based on knowledge about the main ingredient"	✓	
"H6: Obstacles for consumption of Hardaliye differ according to their age"	✓	
"H7: Obstacles for consumption of Hardaliye differ according to their gender"		✓
"H8: Obstacles for consumption of Hardaliye differ according to previous knowledge level of Hardaliye"	✓	
"H9: Obstacles for consumption of Hardaliye as a functional beverage differ from other bevarages"	✓	
"H10: Obstacles for consumption of Hardaliye differ based on knowledge about the main ingredient"	✓	
"H11: Consumers preferences of Hardaliye changes according to their age"	✓	
"H12: Consumers preferences of Hardaliye changed depending on gender"		✓
"H13: Consumers preferences of Hardaliye change according to their previous information level about it"	✓	
H14: Consumers preferences of Hardaliye change because of its functional properties"	✓	
"H15: Consumers preferences of Hardaliye change according to their knowledge about the main ingredient"	✓	