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CONSUMER BEHAVIOR APPLICATION IN THE CANNED TUNA FISH MARKET:
The Case of Superton

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CONSUMER BEHAVIOR APPLICATION IN THE CANNED TUNA FISH MARKET:
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ABSTRACT

Careful monitoring of consumer behavior of the consumers has become a crucial tool for companies to gain competitive edge in this century. The common characteristic of the market-oriented companies is the satisfaction they provide to their customers.

In this spirit, this thesis consists of four main chapters in which a company in Turkey and its marketing experience are examined. The first chapter consists of information about the canned tuna fish market, the company (Kerevitaş), and the canned tuna fish product of Kerevitaş (Superton). In the second chapter, a survey which intends to assess various aspects of consumer behavior is discussed. The research methodology which was used, data analysis, and the findings are presented. The survey deals with three issues that are related to the advertising, pricing, and distribution functions in the canned tuna market. The major purpose of the survey was to gain more insight about the purchasing and consumption patterns of canned tuna fish in general and perceptions of three major brands in terms of some key attributes in particular.

The third and the fourth chapters contain the conclusions of the survey and the recommendations, respectively.

ÖZ

Günümüzde tüketici davranışlarının yakından takip edilmesi, firmaların rekabet güçlerini arttırmaları yönünden çok önem kazanmıştır. Pazarlama yönü güçlü olan firmaların ortak özelliği tüketicilerine sağladıkları memnuniyettir.

Bu amaçla bu tez, Turkiye'de bulunan bir firmanın pazarlama fonksiyonunun incelenmesi üzerine, dört ana bölümden oluşmuştur. İlk bölümde, Turkiye'deki konserve ton balığı pazarı, ele alınan firma (Kerevitaş) ve ürünü hakkında genel bilgi verilmiştir. İkinci bölümde, tüketici davranışlarını çeşitli yönlerden ele alan incelemeden bahsedilmiştir. Kullanılan araştırma metodolojisi, veri analizi ve bulgular sunulmuştur. Bu pazar araştırması, konserve ton balığı pazarındaki reklam, fiyat, ve dağıtım fonksiyonlarını temel almıştır. Ana amaç, genel olarak konserve ton balığı alım ve tüketim şekilleri hakkında bilgilenmek ve tüketicilerin piyasadaki üç ana markanın çeşitli özelliklerine yaklaşımını incelemekti.

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CHAPTER 1

INTRODUCTION

Kerevitaş was established in 1970. It has started its business by exporting crayfish to Scandinavian countries and continued exporting to various European countries until 1990. It also exported to Japan, Korea and Arabic countries. Kerevitaş has entered the domestic market in April 1990.

Kerevitaş manufactures frozen and canned food products:

- Frozen foods: Vegetables and fruits, floured products, and sea products
- Canned foods: Tuna fish (brand name SuperTon), corn, pet food (brand name Lucky), and others (mushroom, asparagus, beans)

The production facilities are located in Bursa, Avcılar, and Kartal. As management has decided to reduce the number of cost centres by centralising production as well as administration, it is likely that all the departments related with production and administration will be gathered in Bursa in the very near future.

Kerevitaş distributes its products through its own distributors in İstanbul, Ankara, and Bursa, and through independent dealers in 25 cities. The organisation chart of the company is shown in Exhibit 1.

The core competency of Kerevitaş is its manufacturing and distribution capabilities. In all of its product lines, it uses the most technologically advanced machines and the most modern techniques in its operations. Moreover, the company has a very strong distribution network all over Turkey.

The main weaknesses of the company has been its advertisement policy. Although Kerevitaş did not give much emphasis on advertising, thinking that the success of a company is based on the availability (strong distribution), affordability (economic prices), and acceptability (high-quality) of its products not on the success of its advertisements, the company has recently seemed to change this policy. Nowadays, it is possible to see the advertisements of Kerevitaş both for its frozen and canned tuna fish products on TV. This shows that the company has realised that in order to increase or even sustain the market share, the company not only should provide the 3As (availability, affordability, acceptability), but also should communicate with the consumer about the superiority of its products both through advertising and promotional activities. The 1995 advertising expenses of Kerevitaş and Önentaş are shown in Exhibit 2.

1.1. Canned Tuna Fish Industry & Superton

The main companies in this industry are Önentaş Gıda Sanayi ve Ticaret A.Ş and Kerevitaş Gıda Sanayi ve Ticaret A.Ş. Önentaş Gıda with its three main brands, Dardanel, Ton Kinos, and Kaptan Memo, has nearly 70% market share in the tuna fish market. On the other hand, Kerevitaş which has entered the domestic market in May 1993 with its 'Superton' brand, has a market share of 30% in 1996.

Superton has three different products according to the oil that preserves the tuna meat: with sunflower oil (red package), with olive oil (blue package), and with special diet sauce (free from oil) (green package). Moreover, there are two main package sizes: 80 and 160 grams products which are sold as 1x80 grams, 1x160 grams, 3x80 grams, and 2x160 grams. Unlike Dardanel, Superton does not have canned tuna fish with garnish.

Up to 1996, the aim of Kerevitaş was to offer consumers 'high quality and low price' products in the canned tuna fish market. It also used the slogan, 'High quality- Low Price', in its advertisements. Recently, the firm has decided to change the image of its 'Superton' brand by increasing its price, thinking that in the canned tuna fish market, consumers do perceive high-priced products as an indication of high quality and thus they are more likely to buy high-priced products. Following this decision, it has changed its advertisement and pricing policy accordingly. In its new advertisement, it has pursued 'comparative advertising' in which it compares Superton with three other brands (names of the brands are not indicated) and states the superiority of Superton. However, the advertisement neither focuses specifically on any attribute of the product like taste, price, quality nor it emphasises on the usage of the product like consuming with salad or spaghetti or eating as a tuna fish sandwich. In addition, its new pricing policy is to follow Dardanel and charge prices nearly 5% lower than Dardanel's. The prices of the brands are shown in Exhibit 5.

Starting in 1996, also parallel with this new decision mentioned above, the market share of Superton has began to erode. As it can be seen in Exhibit 3, the market share has declined from 45% to 30% in 1996. The main reasons that are likely to cause this decline in the market share of Superton are:

- price increases due to change in its pricing policy
- heavy advertising by Dardanel for its fighting brand Ton Kinos
- introduction by Dardanel of a second fighting brand, Kaptan Memo, whose packaging resembled that of SuperTon and whose quality was extremely low

The price increases in tuna fish initiated by Kerevitaş were motivated by the following reasons:

- Kerevitaş has adopted a strategy of keeping its prices close to Dardanel in an attempt to maintain a high quality image.
- Dardanel has kept increasing its prices. In fact, prices of Dardanel Ton are increased nearly every month.

Heavy advertising of a fighting brand is rather unusual in this market. Therefore, Dardanel's heavy advertising for Ton Kinos was an unexpected move for

Kerevitaş. As Kerevitaş was unprepared for this, it has lost market share to Ton Kinos, which increased its share from 9% to 19%. The company also has lost share to Kaptan Memo, which has increased its market share from 3% to 10%. It would be useful to note that, Kerevitaş has sued Önentaş Gıda for its third brand, Kaptan Memo, claiming that their strategy was aimed at damaging SuperTon's image, and is waiting for the court decision.

The market leader, Önentaş, is enjoying the first movers advantage in the tuna fish market. Its production facility is located in Çanakkale. Its core competency is promotion and advertising. The advertising expenditures of Dardanel, Ton Kinos, Dardanella, and Superton are shown in Exhibit 2. In addition, Dardanel and Ton Kinos rank the fourth and the fifth brands respectively among the top 20 brands that have high advertising expenses in Turkey (see Exhibit 4). As Önentaş has been the first company that introduced the canned tuna fish to domestic market (in 1990; 3 years earlier than Kerevitaş), it has played a great role in building the primary demand. In its advertisements for Dardanel Ton, it has nearly conveyed all the messages that could be conveyed (health, taste, energy, being practical, consumption rate of Dardanel Ton) and has addressed nearly all its target segments (children, students, working women) that could be addressed in the canned tuna fish market. On the other hand, for Ton Kinos, the company has tried to build awareness of the brand name in its advertisements.

With all of its three brands, Önentaş seems to put Kerevitaş 'stuck in the middle' and forces the company to take serious precautions. Other than changing the image of Superton and increasing its advertisements as mentioned earlier, Kerevitaş has introduced two different brands, Tonetto and Denizci, which would be widely distributed in the very near future. Tonnetto would compete with Dardanel, and Denizci would be positioned for children.

CHAPTER 2

THE SURVEY

2.1. Aim of the Survey

The aim of the survey has two main categories. The first one is to get general insight about the market and the other is related with testing three issues which would be indicated below.

The first purpose is to get more insight about the canned tuna fish market from the consumers' point of view. The main issues would be the buying criteria and consuming patterns of canned tuna fish purchasers. In detail, consumption patterns with regard to frequency, reasons of consumption, when, where, and how the consumption takes place would be examined. Moreover, the buying criteria, demographic characteristics, the effects of advertisements on the consumers, and their perceptions of different brands would be researched.

On the other hand, the second objective is to explore three main research issues:

- The first one is related with the advertisement policy of Kerevitaş. Although the company has recently changed its advertising policy and has started giving importance to advertisement, it has not reached a consensus within the company about this policy change.

(It was researched to find out whether the advertisements are a motivating factor for the consumers to make purchase of the brand/s that are frequently advertised).

- The second issue is related with the new pricing policy applied to Superton. As I have mentioned earlier, Kerevitaş has decided to keep its prices close to Dardanel in an attempt to maintain a high quality image. The company believes that consumers perceive high-priced canned tuna fish as an indication of high-quality product.

  (It was tested whether the consumers are price-sensitive in their purchase behaviour or whether they prefer high-priced products as Kerevitaş claims).

- Kerevitaş believes that to have a strong distribution network enables the company to gain more market share. In addition, they state that they have a strong distribution network compared to Önentaş which distributes its products more extensively to supermarkets and hypermarkets instead of small grocery stores. On the other hand, Kerevitaş distributes its products more intensely, both to grocery stores and to big shopping centres thinking that it provides a more competitive edge.

  (The survey results also provided an answer for this claim).

2.2. Research Process

The findings of the survey would be expected to find out the causes of the rapid decline in the market share of Superton. In order to find out the causes based on the issues stated above as well as the findings related with the consumer behaviour in the canned tuna fish market, an exploratory research has been conducted. The data are primary which have been collected by a structured and undisguised questionnaire (see Appendix 1). Moreover, personal interview has been determined to be more suitable as a method of administration due to the detailed nature of the questions which would have been expected to cause confusion if telephone interview or mail questionnaire had been used.

The questionnaires have been applied to 32 respondents. The sample consists of people who both does the shopping and buy canned tuna fish. 24 individuals have been conducted the survey in front of shopping centres: 9 individuals from Migros(Şişli), 7 individuals from Beltaş (Beşiktaş), and 8 individuals from a grocery store in Şişli. Due to the length and the content of the questionnaire, the sample size could not be reached as most of the respondents were reluctant to continue especially at the 16th and 17th questions in which importance and satisfaction ratings were asked. Due to this difficulty, the remaining 8 individuals are from the Koç MBAs who both make their purchases on their own and consume canned tuna fish at the same time.

After collection, the data have been entered to Minitab. The coding of the questions are shown in Appendix 2. The necessary applications such as tabulation (see Appendix 3), cross tabulation, (see Appendix 4), descriptive statistics as well as analysis of variance tests which include the Hsu's and Tukey's tests have been conducted (see Appendix 5). The definitions and the functions of these applications are explained in Appendix 6.

2.3. Analysis of the Survey Results

2.3.1. Demographic Characteristics: The demographic characteristics are shown in Table 1. 46.88% of the respondents were males and 53.13% were females. In addition, 28.13% were housewives, 46.88% were working and 25% were students. Moreover, 34.38% were between the ages 18-25, 37.5% were in the 26-35 group, and 28.13% were in the 36-50 age group.

***2.3.2. Frequency of Consumption*:** The consumption rate of canned tuna fish among the respondents are shown in Table 2. The frequency of consumption among 34.37% of the respondents is once a month whereas 18.75% consume more than once a week, 15.6% consume once a week, 18.75% consume once within two weeks, and 15.6% consume more rarely than the stated time intervals.

Incorporating the age groups, income levels and occupation, the frequency of consumption is indicated in Table 3, 4, and 5. The crosstab involving age and frequency of consumption suggests that these two variables are independent of each other. Similarly, there seems to be no relation between income levels and frequency of consumption[1] (see Appendix 4).

2.3.3. Reasons for Consumption: The responses according to the main reasons of consuming canned tuna fish are listed in Table 5 in which the most effective reason that has been stated by 75% of the respondents is the 'ease in preparation'. Moreover, 50% of the respondents have stated that they buy it due to its 'protein content and nutrition', 46.9% have claimed its 'health effect due to white meat', and 34.38% have mentioned about its 'good taste'. In addition, it is essential to note that 'price' factor is not an important criterion of consuming canned tuna fish probably due to its high cost.

In Table 7, the benefit of 'ease of preparation' criterion with regard to occupation has been categorised. The crosstab involving age and frequency of consumption suggests that these two variables are independent of each other. Moreover, there seems to be no relation between occupation and the benefit of 'ease in preparation'. In addition, there seems to be no relation between the age groups and consumption due to 'white meat' criterion (see Table 8 and Appendix 4).

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[1] A chi-square analysis results are not reported because the sample size was small, and therefore, expected cell frequencies were less than 5 for several cells.

2.3.4. Period of Consumption: In Table 9, it could be observed that the respondents are consuming canned tuna fish more often in the evening as 75% have claimed in this way.

2.3.5. The Way of Consumption: The way of consumption of canned tuna fish are shown in Table 10 in which 'eating tuna fish alone' has the greatest percentage of 68.75%. In addition, 40.62% of the respondents have stated that they consume tuna fish by adding it into other meals like salad or spaghetti.

2.3.6. The Place of Consumption: The place of consumption of canned tuna fish is claimed to be 'at home' by all of the respondents. Moreover, 15.62% of the respondents have stated that they also eat tuna fish especially in cafes by ordering tuna fish sandwiches (see Table 11).

2.3.7. The Awareness of Brands: 62.50% of the respondents have stated 'Dardanel' as the first brand when they were asked to state the canned tuna fish brands that they knew. This percentage is 21.87% for Superton and 12.50% for Ton Kinos. On the other hand, 'Dardanel' exists in the evoked set of 93.75% of the respondents' whereas this number is 81.25% for Superton and 75.00% for Ton Kinos (see Table 12).

2.3.8. The Awareness of Advertisements of Brands: The awareness of advertisements of brands are 78.13% for Dardanel, 68.75 for Ton Kinos, and 34.37% for Superton (see Table 13).

2.3.9. Brand Loyalty : Out of 32 respondents, 20 have indicated that they purchase a specific brand (62.50% of the respondents).

2.3.9.1. Brand Loyalty for Dardanel: Out of 26 respondents who consume Dardanel, 17 have indicated that they only prefer Dardanel and do not buy other brands. The remaining 34.62% have indicated that they consume other brands as well as Dardanel (see Table 15).

2.3.9.2. Brand Loyalty for Superton: Out of 12 respondents who are purchasers of Superton, only 3 have indicated that they are brand loyal, and the remaining 75% have stated that they consume other brands as well as Superton (see Table 16).

2.3.9.3. Brand Loyalty for Ton Kinos: Out of 11 respondents who have claimed to consume Ton Kinos, 81.82% have stated that they are not brand loyal and they also consume other brands as well as Ton Kinos (see Table 17).

2.3.10. Price Sensitivity: The respondents were asked if they still continue to buy their canned tuna fish brand/s if the price increased by 10% (see Table 18). The responses indicates that 84.38% of the respondents would still continue to buy the same brand or brands of canned tuna fish with the same amount that they were buying before the price increase. After getting these results, the respondents who have replied the first question by either 'Yes' or 'I would decrease the amount', were again asked if they still continue to buy if the price increases by another 10% (see Table 19). This time, the respondents that would continue to buy boiled down to 42.86% . Moreover, 35.71% have indicated that they would decrease the amount of purchase and the 21.43% of the respondents have claimed that they would not buy.

2.3.11. Point of Purchase: The increasing number of hypermarkets and supermarkets have changed the purchasing habits of the consumers. People usually prefer to make bulk purchases from hypermarkets or supermarkets like Migros, Metro, Carrefour etc. especially at the weekends. This situation is also justified when the respondents were asked their point of purchase when they are buying canned tuna fish. 93.75% of the respondents have indicated that they purchase from either supermarkets or hypermarkets indicated above (see Table 20).

2.3.12. The Effect of Availability on Brand Loyalty: The respondents were asked if they would another brand if their favourite brand/s do not exist at the point of purchase. 65.63% have stated that they would buy the available brand (see Table 21). Considering only the brand loyal respondents which were 62.50% of all the respondents (20 brand loyal respondents) indicated in Table 14, 40 % have indicated that they would not buy another brand (see Table 22).

2.3.13. Importance Ratings: The respondents were asked to rate some factors that play role in their purchases. These factors are cheap price, quality, advertisement awareness of the brand, discounts, small gifts given with the product, taste panels, and sweepstakes. The means of the ratings are shown in Table 23. The 'quality' is rated the highest indicating that it has a great role in the purchasing. Moreover, 'economic price', 'discounts', and 'advertisement awareness' are also important factors. The 'small gifts given with the product', 'taste panels', and the 'sweepstakes' seems not to be high motivating factors for the purchase.

2.3.14. Satisfaction Ratings: The respondents were asked to rate each brand that they know according to the same factors listed for the importance ratings (see Table 23). The analysis of variance test has been applied in order to find out if the differences in the means are statistically significant. Moreover, Hsu's test and Tukey's tests have been applied in order to find out the best mean and the homogeneous subsets, respectively. The results gained for each factor have been indicated below:

2.3.14.1. Cheap Price: It is found that at the 90 percent confidence interval, the means of economic price factor for each brand are significantly different (see Table 24). Moreover, Hsu's test shows that 'Ton Kinos' has the best mean with the

3.937 rating and the means 'Superton' and 'Dardanel' form an homogeneous subset which indicates that the difference between the means are not statistically significant (see Table 24).

2.3.14.2. Quality: The highly rated factor 'quality' in the importance ratings seems to be satisfied by 'Dardanel' the most, by having 4.429 satisfaction rating whereas this rating is 3.947 for Superton and 3.235 for Ton Kinos as indicated in Table 23. The differences between these ratings are found to be statistically significant according to the ANOVA results. (see Table 24). Moreover, according to the Hsu' s test, Dardanel has the best mean in terms of quality. The responses also indicates that Superton ranks the second after Dardanel in terms of quality whereas Ton Kinos is perceived as the lowest-quality product among the three brands which is indicated in the 'homogeneous subsets' column of Table 24.

2.3.14.3. Advertisement awareness: The satisfaction ratings for advertisement awareness are shown both in Table 23 and 24. According to the ANOVA results (see Appendix 5), the differences in these means are statistically significant at the 90 percent confidence interval. In addition, according to the Hsu's and Tukey's tests, there is no best mean and the satisfaction rating means of 'Ton Kinos' and ' Dardanel' are statistically the same at 90 percent confidence interval as shown in homogeneous subset in Table 24.

2.3.14.4. Discounts: 'Discounts' has been found one of the important criterion after 'quality' and 'economic price' that motivates the purchasers (see Table 23). In terms of satisfaction ratings none of the brands has been found superior in terms of 'discounts'. Moreover, ANOVA test (see Appendix 5) indicates that the differences between the means are statistically insignificant (refer Table 24).

2.3.14.5. Small gifts given with the product: The survey indicates that this factor do not play an important role in purchasing compared to 'quality', 'economic price', and 'discounts'. According to the responses, Superton has the highest mean of satisfaction ratings in terms of 'small gifts' as shown in Table 24.

2.3.14.6. Taste Panels: Not being one of the effective criterion in purchasing as far as the importance ratings are concerned, the mean of the satisfaction ratings seem somewhat similar. Moreover, ANOVA (Appendix 5) also indicates that the differences between the brands are not statistically significant at the 90 percent confidence interval (see Table 24).

2.3.14.7. Sweepstakes: Being the least important criterion, the result of ANOVA (Appendix 5) has shown that the means of the satisfaction ratings of each brand are statistically different from each other. Superton has the best mean in terms of sweepstakes and the other two brands do have statistically similar satisfaction means (see Table 24).

CHAPTER 3

CONCLUSION

Based on the analysis of the survey, there are two important results that have been reached. The first one is the buying and consuming patterns of the canned tuna fish consumers. The results indicates that the canned tuna fish has not become a commodity type of product as far as frequency of consumption is concerned. Nearly forty percent of the customers have stated that they consume canned tuna fish only once a month. This is actually a very amazing figure compared to other kinds of meat like chicken or red meat. Moreover, the statistics sources state that the consumption of canned tuna fish per person is nearly 50 grams per year in Turkey whereas this number is approximately 1 kg. in the European countries. Most of the canned tuna fish manufacturers attribute this result to the early stages of the product as well as the high inflationary environment and low income level of the country.

One essential point to note is that 75% of the respondents have stated that they consume canned tuna due to its being practical in preparation. This indicates that people stock the purchased canned tuna and consume it when there is a time constraint. This is especially valid for the working individuals (see <u>Table 7</u>).

Moreover, consumers prefer to consume the product in a meal in which the only main food type is canned tuna like canned tuna fish sandwich and/or consume it by mixing with other meals like spaghetti or salad. The time period and the place of consumption is stated mostly at home and in the evening, respectively.

The comparisons between the brands is another aspect of this survey. It has been found that Dardanel ranks the first in terms of total consciousness as well as being the first stated brand by 62.5% of respondents when they were asked to state the names of the canned tuna fish brands (see Graph 1 and 2). Moreover, according to the advertisement awareness of the brands among the respondents, both Dardanel and TonKinos have been found very successful (see Graph 3). On the other hand, most of the respondents have stated that they actually do not like the advertisements of Ton Kinos. Superton has been found very weak in terms of communicating messages and thus building awareness and brand loyalty through advertising.

Considering the 'brand loyalty' concept, the ratio of the brand loyal consumers to not brand loyals among the respondents were 3:2. This ratio is approximately 2:1 among the customers of Dardanel, 1:3 for Superton, and 1:4 for TonKinos. In conclusion, Dardanel has been found successful in terms having brand loyal customers. The main reasons of this success can be attributed to many factors: Dardanel is the first brand introduced to the Turkish market with high advertisement expenditures which has been useful in building primary demand. The

'Dardanel' name has been so suited with the canned tuna fish that this advantage of the brand has created many brand loyal customers.

The second issue related with the new pricing policy of Kerevitaş and the price-sensitivity concept in the canned tuna fish market, it is found that the consumers are not very price sensitive. In my opinion, this is due to the fact that they do not consume canned very frequently. As it can be seen from Graph 4, nearly 84% of the respondents have stated that they would still continue to buy their preferred product even if the price increases by 10 percent. Moreover, another 10 percent increase in price caused only 21.43% of the respondents to stop buying, and 35.71% to decrease the amount (see Graph 5).

The point of purchase results also related with the third issue, indicates that consumers prefer to make bulk purchases from big supermarkets and hypermarkets. 93.75% of the respondents have claimed that they buy the canned tuna from either hypermarkets or big supermarkets like Migros, Carrefour and/or Metro (see Graph 6). Moreover, the results of the effect of availability on brand loyalty indicates that 65.63% of the respondents have indicated that they would buy another brand if their favourite brand/s do not exist at the point of purchase (see Graph 7).

Considering the factors that play role in the purchase of canned tuna, 'quality', 'economic price', 'discounts' and 'advertisement awareness' factors have been rated as important factors, respectively (see Table 23). Taste panels, small gifts given with the product, and sweepstakes have lower mean values (under 2.7) compared to indicated factors. The importance-satisfaction is shown in Graph 8. Superton is strong in the factors that do not have high importance, like sweepstakes and small gifts given with the product whereas Dardanel is strong in key factors such as quality and advertisement (like Ton Kinos). Advertisement and economic price are the factors that Ton Kinos is strong at.

CHAPTER 4

RECOMMENDATIONS

This study has two major limitations, and the conclusions should be considered with those limitations in mind. The sample size was rather small, and the method of sampling was not random. Therefore, in the following recommendations, it is assumed that the findings of this study can be replicated by a larger random sample.

The canned tuna fish is a low involvement product. Moreover, the consumer decision making process is either through limited decision making or inertia based on the consumer characteristics. For the low involvement products, it is more easy to induce buyers to purchase your product if right strategies are pursued. For example, promotional activities, advertising techniques, distribution, pricing and the like are effective tools to encourage variety seeking and/or buy your product.

First of all, Kerevitaş should be more proactive in all its strategies and especially in pricing. Instead of keeping its prices close to Dardanel to maintain a high-quality image for Superton, it should focus on advertisement to achieve this goal. Moreover, this would enable the company to increase the perceived value of its product among the buyers. In addition, this strategy would be more effective to keep track of its existing customers as well as gaining new customers.

Promotional incentives such as deals and coupons, joint promotions with other products, in-store displays would be very effective to encourage trial of Superton. Moreover, TV advertisements would initiate passive learning and increase the familiarity of the brand among the consumers. In addition, the messages sent through these advertisements should be based on factors that the consumer is highly involved. For instance, the benefits of the product, such as the quality and the price, the ease in preparation, and the health effect should be well communicated to the buyer. In addition, it would be useful and attracting to use a character (like in the advertisements of Aymar) for Superton to maintain interest in the product. This would also make the in-store displays and the taste panels more attractive.

The product extensions that the company has recently introduced in the canned tuna would probably lead to success if effective advertisement and promotion policies are pursued. These new products can be positioned to each market segment like children, young and middle-aged, and old buyers (demographic segmentation). According to this, selective advertisement can be made like addressing protein content for children and for the young people, its ease in preparation for the middle-aged people, and health effect due to white meat for the old people (benefit segmentation). This focused strategy would enable the company to communicate the benefits of the product more effectively. Moreover, focusing of effective advertising would change the existing habits such that activation of canned tuna in the consumer's mind would not bring up Dardanel and its related nodes anymore.

Another creative idea for advertisement is that the company can make use of its high-quality image of its frozen food by advertising the whole product line (frozen foods and the canned tuna fish together).

EXHIBITS

EXHIBIT 1: ORGANIZATION CHART OF KEREVİTAŞ

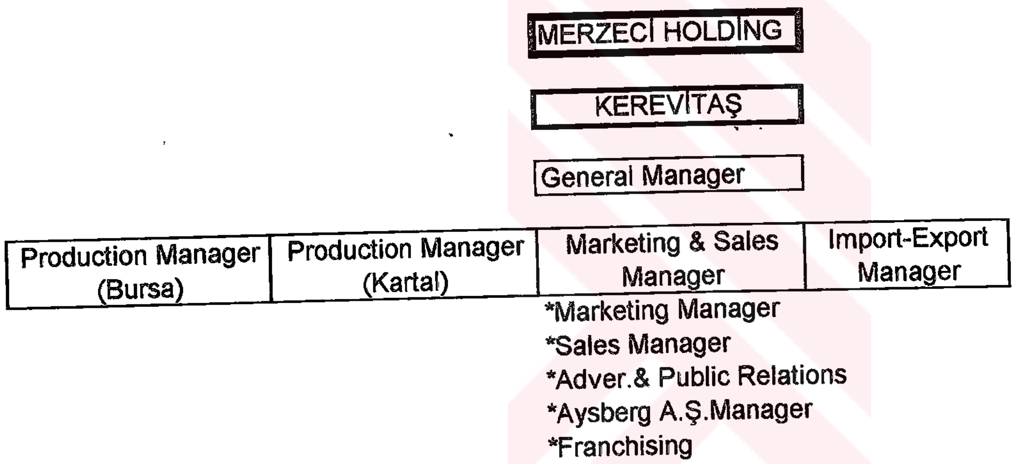


EXHIBIT 2: ADVERTISING EXPENDITURES IN THE TUNA FISH INDUSTRY IN 1995 (Million TL)

	TV		MEDIA		RADIO		TOPLAM
Product / Firm	time-sec.	expenditure	colunm-cm	expenditure	word	expenditure	
Dardanel ÖNENTAŞ	256,653	750,277	537	3,115	0	0	753,342
Ton Kinos ÖNENTAŞ	220,968	682,404	0	0	0	0	682,404
Dardanella Salad Bar ÖNENTAŞ	114,045	371,861	0	0	0	0	371,861
Superton KEREVİTAŞ	20,744	98,086	1,346	5,004	0	0	103,090

Source: Marketing Türkiye, May 15, 1996, p.80

EXHIBIT 3: MARKET SHARES OF TUNA FISH BRANDS IN 1995 and 1996

Firms	Brands	1995	1996
KEREVİTAŞ	SuperTon	45%	30%
DARDANEL	Dardanel	42%	40%
	Ton Kinos	9%	19%
	K. Memo	3%	10%
	Other Brands	1%	1%
TOTAL		100%	100%

Source: obtained from the records of Kerevitaş

EXHIBIT 4: ADVERTISING EXPENSES OF 20 TOP ADVERTISING BRANDS IN TURKEY IN 1995

BRAND	COMPANY	TOTAL (billion TL)
Coca Cola	Coca Cola	1.197431
Garanti Bank	Garanti Bank	883,054
Pepsi Cola	Pepsi Cola International	818,799
Dardanel	**Önentaş**	**753,342**
Ton Kinos	**Önentaş**	**682,404**
İş Bank	İş Bank	654,022
Akbank	Akbank	650,755
Sana	Unilever	595,057
İmar Bank	İmar Bank	588,591
Telsim	Telsim	545,697
Emlak Bank	Emlak Bank	522,869
Arçelik	Arçelik	507,475
Omomatik	Lever	487,316
Pantene ProV	P & G	463,857
Arielmatik	P & G	459,765
Iktisat Bank	Iktisat Bank	434,364
Yapı Kredi Telecard	Yapı Kredi Bank	430,402
Calgon	Benckiser	403,527
Marc Deo Floral	Benckiser	400,098
Taç Curtains	Taç Company	374,750

Source: Marketing Türkiye, May 15, 1996, p.50

EXHIBIT 5: THE PRICES (TL) OF THE MAIN CANNED TUNA FISH BRANDS

BRANDS	80grams	160grams	300grams	3X80grams	2X160grams	2X300grams
Dardanel	81500	151500	286900	221900	274900	521900
Superton	76900	142900	_	213900	263900	_
Ton Kinos	64900	119900	228900	177900	218900	_
Kaptan Memo	57900	104900	_	154900	191900	_
Yurt	52500	87500	_	_	_	_

Source: figures are obtained from Migros (Şişli) on 23.05.1996

TABLES

TABLE 1: DEMOGRAPHIC CHARACTERISTICS

Sexuality	Number	Percenatage
Man	15	46.88%
Woman	17	53.13%
TOTAL	**32**	**100.00%**

Occupation	Number	Percentage
Housewife	9	28.13%
Working	15	46.88%
Student	8	25.00%
TOTAL	**32**	**100.00%**

Age Group	Number	Percentage
18-25	11	34.38%
26-35	12	37.50%
36-50	9	28.13%
TOTAL	**32**	**100.00%**

TABLE 2: FREQUENCY OF CONSUMPTION

Frequency	Number	Percentage
More than once per a week	6	18.75%
Once per week	4	12.50%
Once in per two weeks	6	18.75%
Once per month	11	34.37%
More rarely	5	15.62%

TABLE 3: FREQUENCY OF CONSUMPTION WITH REGARD TO AGE GROUPS

	Age Groups		
Frequency	**18-25**	**26-35**	**36-50**
More than once per a week	6.25%	9.37%	3.12%
Once per week	3.12%	0%	9.37%
Once in per two weeks	9.37%	9.37%	0%
Once per month	12.50%	9.37%	12.50%
More rarely	3.12%	9.37%	3.12%

TABLE 4: FREQUENCY OF CONSUMPTION WITH REGARD TO INCOME LEVELS

	Income Levels			
Frequency	**< 30 million TL**	**30-50 mil. TL**	**51-70 mil. TL**	**> 70 million T**
More than once per a week	3.12%	6.25%	6.25%	3.12%
Once per week	0%	3.12%	9.37%	0%
Once in per two weeks	3.12%	12.50%	3.12%	0%
Once per month	12.50%	9.37%	9.37%	3.12%
More rarely	3.12%	9.37%	0%	3.12%

TABLE 5: FREQUENCY OF CONSUMPTION WITH REGARD TO OCCUPATION

	Occupation		
Frequency	**Housewife**	**Working**	**Student**
More than once per a week	9.37%	6.25%	3.12%
Once per week	6.25%	3.12%	3.12%
Once in per two weeks	0.00%	9.37%	9.37%
Once per month	9.37%	18.75%	6.25%
More rarely	3.12%	9.37%	3.12%

TABLE 6: BENEFITS OF CONSUMPTION

Reasons	Number	Percentages
Protein content and nutrition	15	46.88%
White meat and healthier	16	50.00%
Good taste	12	37.50%
Ease in preparation	24	75.00%
Appropriate pricing	1	3.12%

TABLE 7: THE BENEFIT OF EASE OF PREPARATION WITH REGARD TO OCCUPATION

	Occupation			
Consumption due to ease in preparation	**Housewife**	**Working**	**Student**	**Total percentage**
Yes	18.75%	31.25%	25%	**75.00%**
No	9.37%	15.62%	0%	**24.99%**
Total percentage	**28.12%**	**46.87%**	**25.00%**	**99.99%**

TABLE 8: WHITE MEAT BENEFIT WITH REGARD TO AGE GROUPS

	Age Groups		
Consumption due to being white meat and healthier	**18-25**	**26-35**	**36-50**
Yes	12.50%	21.87%	15.62%
No	21.87%	15.62%	12.50%

TABLE 9: PERIOD OF CONSUMPTION

Period	Number	Percentage
Morning (breakfast)	0	0.00%
Noon (lunch)	6	18.75%
Evening (dinner)	24	75.00%
Between the meals	8	25.00%

TABLE 10: THE WAY OF CONSUMPTION

The way of consumption	Number	Percentage
Mixing with other meals like salad or spagetti	13	40.62%
Eating with other meals to increase the variety of the meal	7	21.87%
Consuming alone like eating tuna fish sandwich	22	68.75%

TABLE 11: THE PLACE OF CONSUMPTION

Place	Number	Percentage
At home	32	100%
At work	2	6.25%
At school	2	6.25%
During traveling	3	9.37%
In cafes or restaurants	5	15.62%

TABLE 12: THE AWARENESS OF BRAND NAMES

Brands	First stated brand	Consciousness
Dardanel	62.50%	93.75%
Superton	21.87%	81.25%
Ton Kinos	12.50%	75.00%

TABLE 13: THE AWARENESS OF ADVERTISEMENTS OF BRANDS

Brands	Percentages
Dardanel	78.13%
Superton	34.37%
Ton Kinos	68.75%

TABLE 14: BRAND LOYALTY

State	Number	Percentage
Brand loyal	20	62.50%
Not brand loyal	12	37.50%

TABLE 15: BRAND LOYALTY FOR DARDANEL

Type of Customer	Number	Percentage
Brand loyal	17	65.38%
Not brand loyal	9	34.62%
Total customer	26	100.00%

TABLE 16: BRAND LOYALTY FOR SUPERTON

Type of Customer	Number	Percentage
Brand loyal	3	25.00%
Not brand loyal	9	75.00%
Total customer	12	100.00%

TABLE 17: BRAND LOYALTY FOR TON KINOS

Type of Customer	Number	Percentage
Brand loyal	2	18.18%
Not brand loyal	9	81.82%
Total customer	11	100.00%

TABLE 18: TESTING PRICE SENSITIVITY FOR 10% PRICE INCREASE

Would you buy if price increases by 10% ?	Number	Percentage
Yes	27	84.38%
No	4	12.50%
Amount decreased	1	3.13%
TOTAL	**32**	

TABLE 19:TESTING PRICE SENSITIVITY FOR ANOTHER 10% PRICE INCREASE

Would you still buy if price increases by another 10% ?	Number	Percentage
Yes	12	42.86%
No	6	21.43%
Amount decreased	10	35.71%
TOTAL	**28**	

TABLE 20: POINT OF PURCHASE

Point of purchase	Number	Percentage
Hypermarkets & Supermarket	30	93.75%
Grocery stores	5	15.63%

TABLE 21: THE EFFECT OF AVAILABILITY ON BRAND PREFERENCES

Buy another brand if the favorite brand/s do not exist in the shopping center?	Number	Percentage
Yes	21	65.63%
No	11	34.38%

TABLE 22: THE EFFECT OF AVAILABILITY ON BRAND LOYAL CUSTOMERS

Buy another brand if the favorite brand/s do not exist in the shopping center?	Number	Percentage
Yes	12	60.00%
No	8	40.00%

TABLE 23: IMPORTANCE and SATISFACTION RATINGS

		Satisfaction Ratings		
FACTORS	**Importance ratings**	**Ton Kinos**	**Superton**	**Dardanel**
Economic price	3.875	3.937	3.211	3.038
Quality	4.813	3.235	3.947	4.429
Advertisement awareness	3.500	4.294	3.158	4.179
Discounts	3.656	3.000	3.056	2.880
Small gifts given with the product	2.625	2.133	3.056	2.240
Taste Panels	2.687	2.714	2.588	2.458
Sweepstakes	2.125	2.200	3.167	2.440

TABLE 24: THE RESULTS OF ANOVA, HSU' S TEST & TUKEY'S PAIRWISE COMPARISONS

		Satisfaction Ratings				
Variable Name	p-value for F-test	Ton Kinos (1)	Superton (2)	Dardanel (3)	Best mean** (highest)	Homogeneous subsets***
Economic price	0.001*	3.937	3.211	3.038	Ton Kinos	(1) (2,3)
Quality	0*	3.235	3.947	4.429	Dardanel	(3) (2) (1)
Advertisement awareness	0.001*	4.294	3.158	4.179	_	(1.3) (2)
Discounts	0.848	3.000	3.056	2.880	_	(2,1,3)
Small gifts given with the product	0.013*	2.133	3.056	2.240	Superton	(2) (3,1)
Taste Panels	0.686	2.714	2.588	2.458	_	(1,2,3)
Sweepstakes	0.019*	2.200	3.167	2.440	Superton	(2) (3,1)

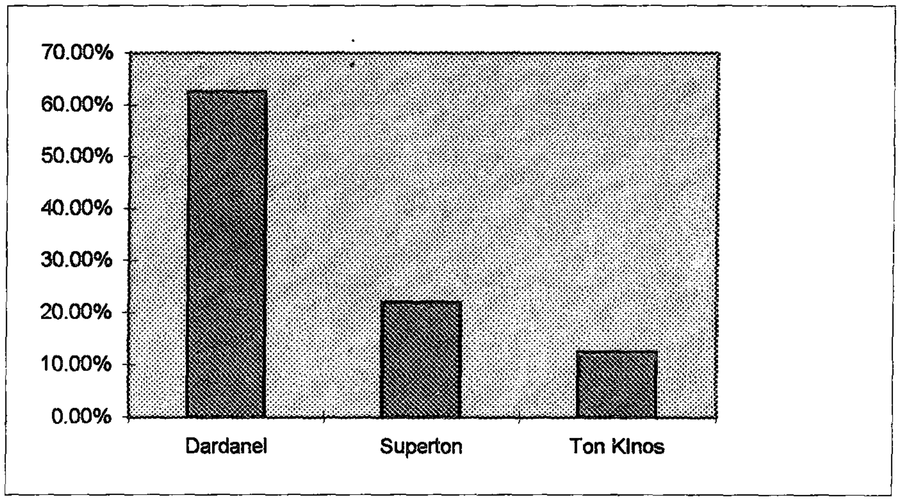
(refer Appendix 5 for the findings on this table)

*: Reject Ho: *at least one of the means are statistically different*
(confidence interval is 90 percent)

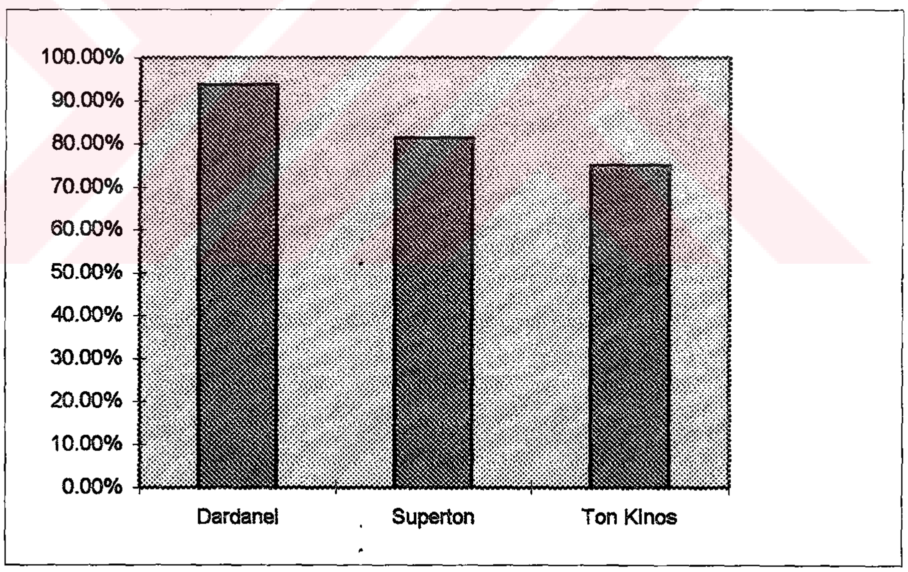
**: As identified by Hsu's multiple comparisons with the best (Family error rate=0.10)
***: As identified by Tukey's multiple comparison with the best (Family error rate=0.10)

GRAPHS

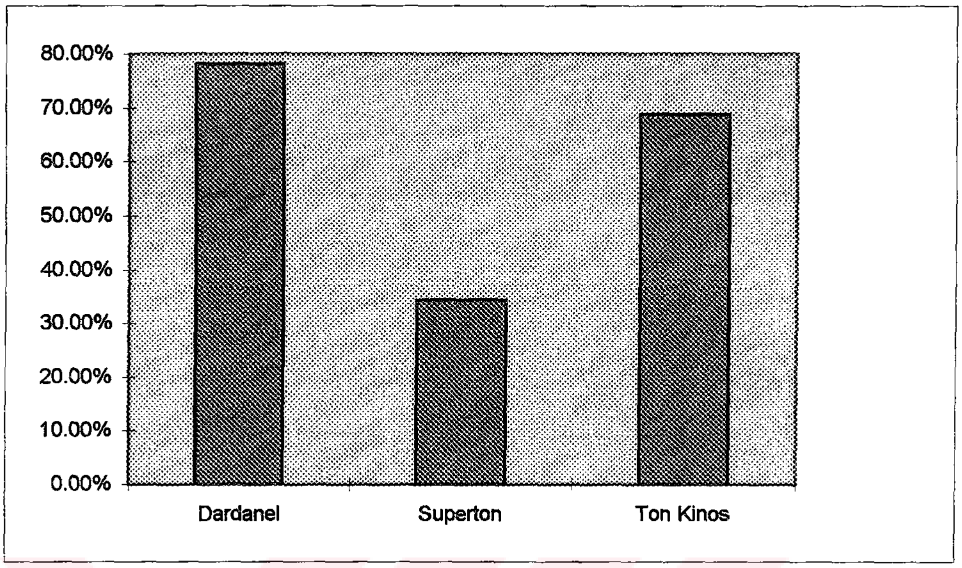
GRAPH 1: PERCENTAGES OF FIRST STATED BRANDS AMONG THE RESPONDENTS



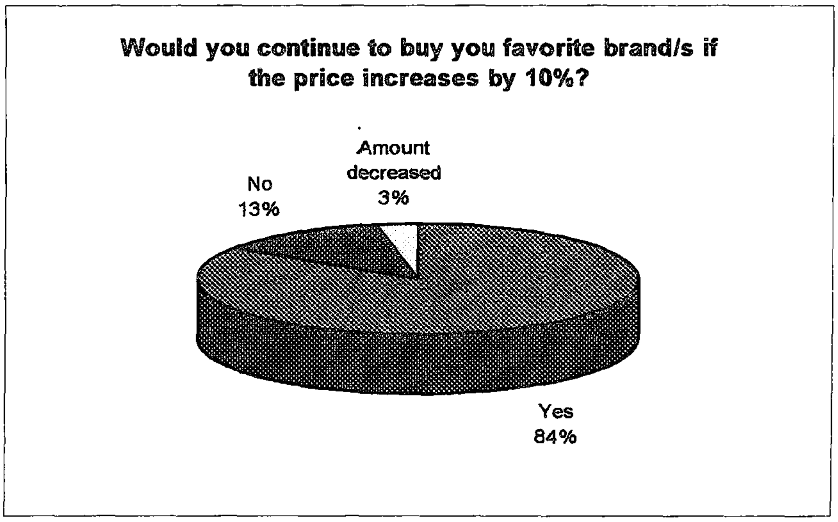
GRAPH 2: THE TOTAL AWARENESS OF THE BRANDS



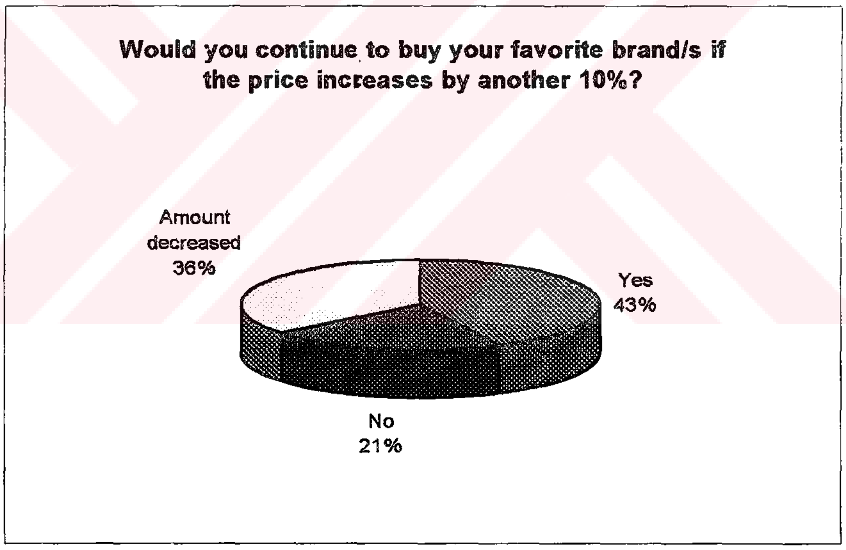
GRAPH 3: TOTAL AWARENESS OF THE ADVERTISEMENTS OF THE BRANDS



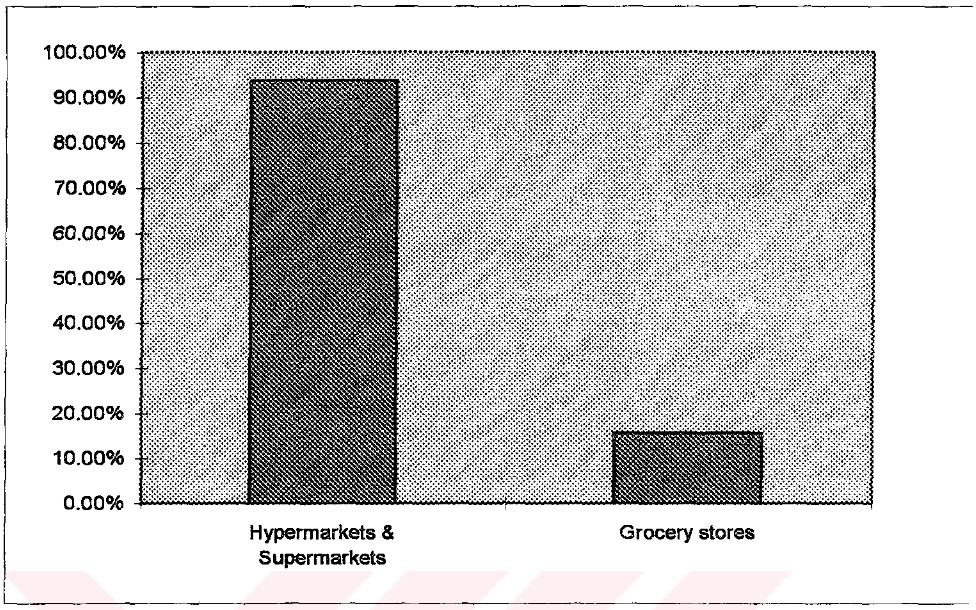
GRAPH 4: PRICE SENSITIVITY



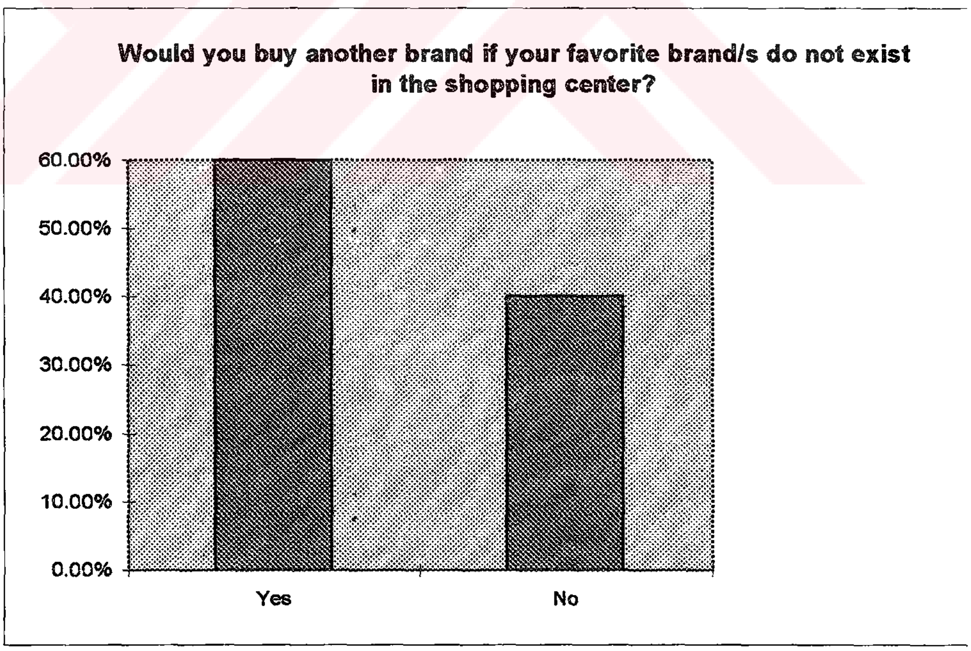
GRAPH 5: PRICE SENSITIVITY



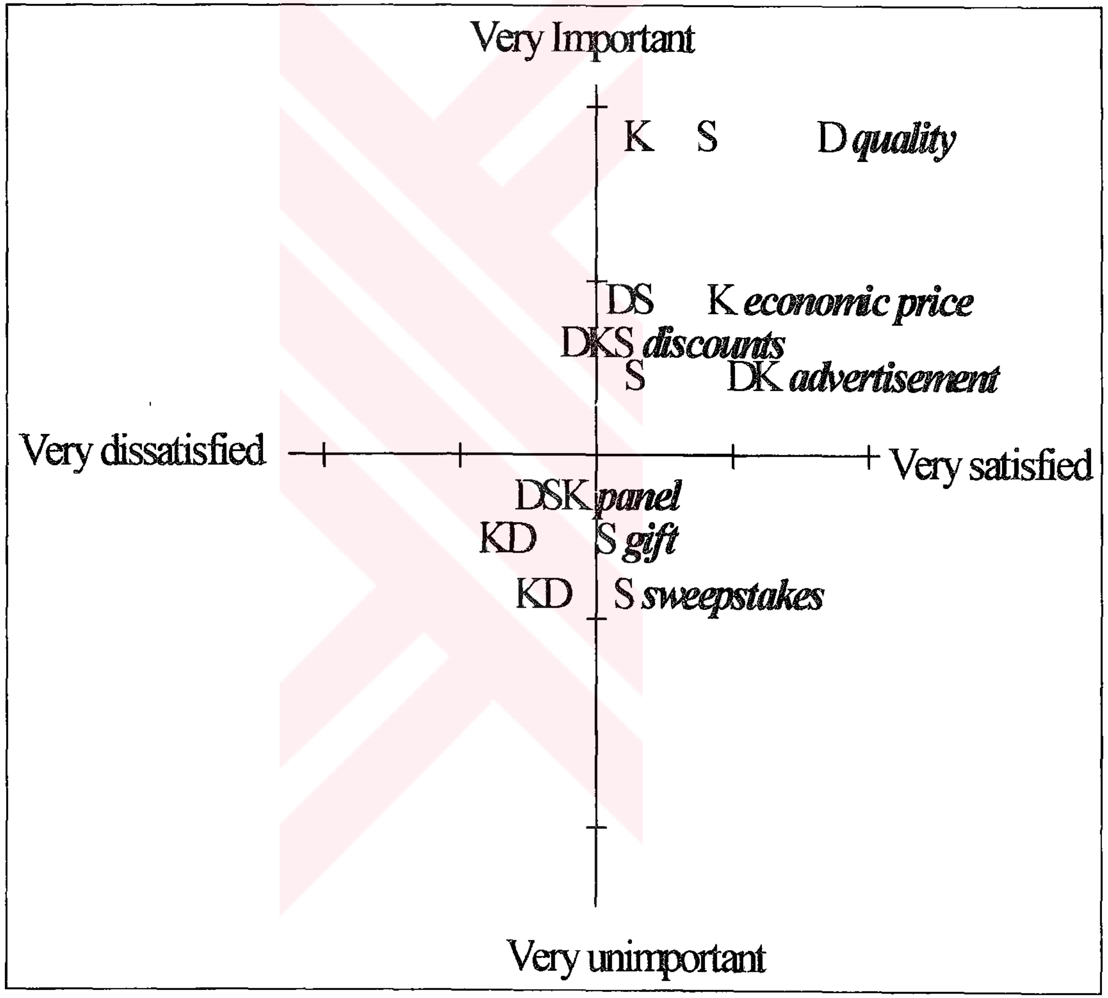
GRAPH 6: POINT OF PURCHASE



GRAPH 7: EFFECT OF AVAILABILITY ON BRAND LOYALTY



GRAPH 8 : IMPORTANCE-SATISFACTION GRID



Note: 'D' indicates Dardanel; 'S' indicates Superton; and 'K' indicates Ton Kinos

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APPENDICES

APPENDIX 1: THE QUESTIONNAIRE

1. Ton balığını ne kadar sıklıkla tüketiyorsunuz?

□ Haftada bir kaç kez
□ Haftada bir
□ 15 günde bir
□ Ayda bir
□ Daha seyrek

2.Neden ton balığı yiyorsunuz?

□ protein içermesi ve besleyici oluşu
□ beyaz et ve sağlıklı oluşu
□ lezzetli oluşu
□ hazırlanmasının pratik oluşu
□ fiyat uygunluğu
□ diğer --

3. Ton balığını daha çok günün hangi saatlerinde tüketiyorsunuz?

□ sabah
□ öğle
□ akşam
□ öğün aralarında

4. Ton balığını nasıl tüketiyorsunuz?

□ salata, makarna vb. gıdalara karıştırarak
□ öğünlerde yemek çeşidini artırmak amacıyla diğer yemeklerin yanına ilave olarak
□ sırf ton balıklığından oluşan bir öğünde (ton balıklı sandiviç gibi)
□ diğer ---

5. Ton balığını nerelerde yersiniz?

□ Evde
□ İş yerinde
□ Okulda
□ Seyahatte
□ Cafe veya restoranlarda
□ Diğer ------------------------------

6. Ton balığı markalarından aklınıza gelenleri sayar mısınız?

----

7. Reklamlarına sıkça rastladığınız ton balığı markaları nelerdir?

----

8. Ton balığı alırken belirli bir markayı mı tercih ediyorsunuz?

☐ Evet ☐ Hayır

9. *(8. soruya 'Evet' cevabı verilmişse)*

Hangi markayı satın alırsınız? Neden?

----

10. *(8.soruya 'Hayır' cevabı verilmişse)*

Şimdiye kadar hangi markaları kullandınız?

Memnun kaldıklarınız hangileriydi? Neden?

----

11. Aldığınız ton balığı markasının veya markalarının yaklaşık fiyatı nedir?

----

12. *(11. sorudan elde edilen ortalama fiyat %10 artırılarak)*

Eğer fiyatı ------------------ TL. olsa alır mısınız?

☐ Evet ☐ Hayır ☐ Az alırım

13. *(12. soruya 'Evet' ya da 'Az alırım' cevabı verilmişse, 11.sorudaki fiyat %10 artırılarak)*

Eğer fiyatı ---------------------TL olsa alır mısız?

☐ Evet ☐ Hayır ☐ Az alırım

14. Ton balığını nereden satın alıyorsunuz?---------------------------------

15. Ton balığını satın aldığınız yerde tercih ettiğiz marka veya markalar yoksa veya kalmamışsa, orada bulunan markalardan birisini alır mısınız?

☐ Evet ☐ Hayır

16.Ton balığı alırken karar vermenizde etkili olan faktörlerin önemlilik derecelerini 'Çok önemli- Önemli- Farketmez- Önemsiz- Çok önemsiz' şeklinde dikkate alarak, her bir faktöre karşılık sadece bir önemlilik derecesi belirtiniz.

FAKTÖRLER	Çok önemli	Önemli	Farketmez	Önemsiz	Çok önemsiz
Ekonomik fiyat					
Kalite					
Markayı reklam yoluyla tanımak					
Üründe yapılan indirimler					
Ürün ile verilen küçük hediyeler					
Tat panelleri					
Çekiliş kuponları					

17. Aynı faktörleri dikkate alarak, aşağıda belirtilen markalardan bildiklerinizi 1'den 5'e kadar olan bir puanlama sistemi ile değerlendiriniz. (1:Hiç memnun kalmama - 2:Memnun kalmama - 3: Orta - 4: Memnun kalma - 5: Çok memnun kalma).

FAKTÖRLER	Ton Kinos	Superton	Dardanel	Kaptan Memo	Yurt	Diğer
Ekonomik fiyat						
Kalite						
Markayı reklam yoluyla tanımak						
Üründe yapılan indirimler						
Ürün ile verilen küçük hediyeler						
Tat panelleri						
Çekiliş kuponları						

18. Cinsiyet: ☐ Bay ☐ Bayan

19.Mesleğiniz: ☐ Ev hanımı
☐ Çalışıyor
☐ Öğrenci
☐ Diğer --------------

20. Aile ile yaşayan çocuk sayısı ---------

21. Ailedeki birey sayısı ---------

22. Yaşınız:

☐ 18-25
☐ 26-35
☐ 36-50
☐ 50' den fazla

23. Toplam aylık geliriniz:

☐ 30milyondan az
☐ 30-50milyon
☐ 51-70milyon
☐ 70 milyondan fazla

APPENDIX 2: THE CODING OF THE QUESTIONS

TON BALIĞI ANKET SORULARI

1. Ton balığını ne kadar sıklıkla tüketiyorsunuz?
1 ☐ Haftada bir kaç kez
2 ☐ Haftada bir
3 ☐ 15 günde bir
4 ☐ Ayda bir
5 ☐ Daha seyrek

2.Neden ton balığı yiyorsunuz?
1-0 ☐ protein içermesi ve besleyici oluşu
1-0 ☐ beyaz et ve sağlıklı oluşu
1-0 ☐ lezzetli oluşu
1-0 ☐ hazırlanmasının pratik oluşu
1-0 ☐ fiyat uygunluğu
1-0 ☐ diğer ---

3. Ton balığını daha çok günün hangi saatlerinde tüketiyorsunuz?
1-0 ☐ sabah
1-0 ☐ öğle
1-0 ☐ akşam
1-0 ☐ öğün aralarında

4. Ton balığını nasıl tüketiyorsunuz?
1-0 ☐ salata, makarna vb. gıdalara karıştırarak
1-0 ☐ öğünlerde yemek çeşidini artırmak amacıyla diğer yemeklerin yanına ilave olarak
1-0 ☐ sırf ton balıklığından oluşan bir öğünde (ton balıklı sandiviç gibi)
1-0 ☐ diğer --

5. Ton balığını nerelerde yersiniz?
1-0 ☐ Evde
1-0 ☐ İş yerinde
1-0 ☐ Okulda
1-0 ☐ Seyahatte
1-0 ☐ Cafe veya restoranlarda
1-0 ☐ Diğer --------------------------------

6. Ton balığı markalarından aklınıza gelenleri sayar mısınız?
(Dardanel 1, Superton 2, Ton Kinos 3, Diğer 4)

7. Reklamlarına sıkça rastladığınız ton balığı markaları nelerdir?
(Dardanel:1-0, Superton:1-0, Ton Kinos:1-0, Diğer:1-0)

8. Ton balığı alırken belirli bir markayı mı tercih ediyorsunuz?
(Evet:1, Hayır:0)
☐ Evet ☐ Hayır

9. *(8. soruya 'Evet' cevabı verilmişse)*
Hangi markayı satın alırsınız? Neden?
(Dardanel:1-0, Superton:1-0, Ton Kinos:1-0, Diğer:1-0)

10. *(8.soruya 'Hayır' cevabı verilmişse)*
Şimdiye kadar hangi markaları kullandınız?
(Dardanel:1-0, Superton:1-0, Ton Kinos:1-0, Diğer:1-0)

11. Aldığınız ton balığı markasının veya markalarının yaklaşık fiyatı nedir?

12. *(10. sorudan elde edilen ortalama fiyat %10 artırılarak)*
Eğer fiyatı ------------------- TL. olsa alır mısınız?
(Evet:1, Hayır:0, Az alırım:2)
□ Evet □ Hayır □ Az alırım

13. *(11. soruya 'Evet'cevabı verilmişse, 11.sorudaki fiyat %10 artırılarak)*
Eğer fiyatı ---------------------TL olsa alır mısız?
(Dardanel:1-0, Superton:1-0, Ton Kinos:1-0, Diğer:1-0)
□ Evet □ Hayır □ Az alırım

14. Ton balığını nereden satın alıyorsunuz?
(Hipermarket,supermarket:1, Bakkal:2)

15. Ton balığını satın aldığınız yerde tercih ettiğiz marka veya markalar yoksa veya kalmamışsa, orada bulunan markalardan birisini alır mısınız?
(Evet:1, Hayır:0)
□ Evet □ Hayır

16.Ton balığı alırken karar vermenizde etkili olan faktörlerin önemlilik derecelerini 'Çok önemli- Önemli- Farketmez- Önemsiz- Çok önemsiz' şeklinde dikkate alarak, her bir faktöre karşılık sadece bir önemlilik derecesi belirtiniz.

	5	*4*	*3*	*2*	*1*
FAKTÖRLER	Çok önemli	Önemli	Farketmez	Önemsiz	Çok önemsiz
Ekonomik fiyat					
Kalite					
Markayı reklam yoluyla tanımak					
Üründe yapılan indirimler					
Ürün ile verilen küçük hediyeler					
Tat panelleri					
Çekiliş kuponları					

17. Aynı faktörleri dikkate alarak, aşağıda belirtilen markalardan bildiklerinizi ***1'den 5'e*** kadar olan bir puanlama sistemi ile değerlendiriniz. (1:Hiç memnun kalmama - 2:Memnun kalmama - 3: Orta - 4: Memnun kalma - 5: Çok memnun kalma).

FAKTÖRLER	Ton Kinos	Superton	Dardanel	Kaptan Memo	Yurt	Diğer
Ekonomik fiyat						
Kalite						
Markayı reklam yoluyla tanımak						
Üründe yapılan indirimler						
Ürün ile verilen küçük hediyeler						
Tat panelleri						
Çekiliş kuponları						

18. Cinsiyet: ☐ Bay *1*
☐ Bayan *2*

19.Mesleğiniz: ☐ Ev hanımı *1*
☐ Çalışıyor *2*
☐ Öğrenci *3*
☐ Diğer *4*

20. Aile ile yaşayan çocuk sayısı ---------
21. Ailedeki birey sayısı ---------
22. Yaşınız:
☐ 18-25 *1*
☐ 26-35 *2*
☐ 36-50 *3*
☐ 50' den fazla *4*

23. Toplam aylık geliriniz:
☐ 30milyondan az *1*
☐ 30-50milyon *2*
☐ 51-70milyon *3*
☐ 70 milyondan fazla *4*

APPENDIX 3: MINITAB TABULATION RESULTS

Question 1: "How frequently do you consume canned tuna fish?"

1.frequency	COUNT	PERCENT	CUMCNT	CUMPCT
1	6	18.75	6	18.75
	4	12.50	10	31.25
3	6	18.75	16	50.00
4	11	34.37	27	84.38
5	5	15.62	32	100.00
N=	32			

Question 2: "Why do you consume canned tuna fish?"

2.protein	COUNT	PERCENT	CUMCNT	CUMPCT
0	17	53.12	17	53.12
1	15	46.88	32	100.00
N=	32			

2.white	COUNT	PERCENT	CUMCNT	CUMPCT
0	16	50.00	16	50.00
1	16	50.00	32	100.00
N=	32			

2.taste	COUNT	PERCENT	CUMCNT	CUMPCT
0	20	62.50	20	62.50
1	12	37.50	32	100.00
N=	32			

2..practical	COUNT	PERCENT	CUMCNT	CUMPCT
0	8	25.00	8	25.00
1	24	75.00	32	100.00
N=	32			

2.price	COUNT	PERCENT	CUMCNT	CUMPCT
0	31	96.88	31	96.88
1	1	3.12	32	100.00
N=	32			

Question 3: "At which time of the day do you consume canned tuna fish?"

3.morning	COUNT	PERCENT	CUMCNT	CUMPCT
0	32	100.00	32	100.00
N=	32			

3.noon	COUNT	PERCENT	CUMCNT	CUMPCT
0	26	81.25	26	81.25
1	6	18.75	32	100.00
N=	32			

3.eveni	COUNT	PERCENT	CUMCNT	CUMPCT
0	8	25.00	8	25.00
1	24	75.00	32	100.00
N=	32			

3.betwe.	COUNT	PERCENT	CUMCNT	CUMPCT
0	24	75.00	24	75.00
1	8	25.00	32	100.00
N=	32			

Question 4: "How do you consume canned tuna fish?"

4.salad	COUNT	PERCENT	CUMCNT	CUMPCT
0	19	59.37	19	59.37
1	13	40.62	32	100.00
N=	32			

4.variety	COUNT	PERCENT	CUMCNT	CUMPCT
0	25	78.13	25	78.13
1	7	21.87	32	100.00
N=	32			

4 alone	COUNT	PERCENT	CUMCNT	CUMPCT
0	10	31.25	10	31.25
1	22	68.75	32	100.00
N=	32			

Question 5: Where do you consume canned tuna fish?

5.home	COUNT	PERCENT	CUMCNT	CUMPCT
1	32	100.00	32	100.00
N=	32			

5.work	COUNT	PERCENT	CUMCNT	CUMPCT
0	30	93.75	30	93.75
1	2	6.25	32	100.00
N=	32			

5.school	COUNT	PERCENT	CUMCNT	CUMPCT
0	30	93.75	30	93.75
1	2	6.25	32	100.00
N=	32			

5.travel	COUNT	PERCENT	CUMCNT	CUMPCT
0	29	90.63	29	90.63
1	3	9.37	32	100.00
N=	32			

5.cafe	COUNT	PERCENT	CUMCNT	CUMPCT
0	27	84.38	27	84.38
1	5	15.62	32	100.00
N=	32			

Question 6: "Could you state the names of the canned tuna fish brands that you remember?"

6.cons.	COUNT	PERCENT	CUMCNT	CUMPCT
1	20	62.50	20	62.50
2	7	21.87	27	84.38
3	4	12.50	31	96.88
99	1	3.12	32	100.00
N=	32			

6.dar	COUNT	PERCENT
0	2	6.25
1	30	93.75
N=	32	

6.super	COUNT	PERCENT
0	6	18.75
1	26	81.25
N=	32	

6.kinos	COUNT	PERCENT
0	8	25.00
1	24	75.00
N=	32	

6.others	COUNT	PERCENT
0	27	84.38
1	5	15.62
N=	32	

Question 7: "Could you state the name s of frequently advertised brands?"

7.kinos	COUNT	PERCENT	CUMCNT	CUMPCT
0	9	28.12	9	28.12
1	22	68.75	31	96.88
99	1	3.12	32	100.00
N=	32			

7.darda	COUNT	PERCENT	CUMCNT	CUMPCT
0	6	18.75	6	18.75
1	25	78.13	31	96.88
99	1	3.12	32	100.00
N=	32			

7.super	COUNT	PERCENT	CUMCNT	CUMPCT
0	20	62.50	20	62.50
1	11	34.37	31	96.88
99	1	3.12	32	100.00
N=	32			

Question 8: "Do you buy a specific brand or brands when you are purchasing canned tuna fish?"

8.loyalty	COUNT	PERCENT	CUMCNT	CUMPCT
0	12	37.50	12	37.50
1	20	62.50	32	100.00
N=	32			

Question 9: "Which brand or brands do you specifically buy?"

9.darda	COUNT	PERCENT
0	3	9.37
1	17	53.12
99*	12	37.50
N=	32	

9.sup er	COUNT	PERCENT
0	17	53.12
1	3	9.37
99*	12	37.50
N=	32	

9.kinos	COUNT	PERCENT
0	18	56.25
1	2	6.25
99*	12	37.50
N=	32	

9.others	COUNT	PERCENT
0	19	59.37
1	1	3.12
99*	12	37.50
N=	32	

* : 99 indicates the respondents who do not buy a specific brand/s.

Question 10: "Which brands have you tried up to now?"

10.darda	COUNT	PERCENT	CUMCNT	CUMPCT
0	2	6.25	2	6.25
1	9	28.12	11	34.37
99**	21	65.63	32	100.00
N=	32			

10.super	COUNT	PERCENT	CUMCNT	CUMPCT
0	2	6.25	2	6.25
1	9	28.12	11	34.37
99**	21	65.63	32	100.00
N=	32			

10.kinos	COUNT	PERCENT	CUMCNT	CUMPCT
0	2	6.25	2	6.25
1	9	28.12	11	34.37
99**	21	65.63	32	100.00
N=	32			

10.darda	COUNT	PERCENT	CUMCNT	CUMPCT
0	8	25.00	8	25.00
1	3	9.37	11	34.37
99*-	21	65.63	32	100.00
N=	32			

** : 99 indicates respondents who do not switch between brands but prefers a specific brand or brands

Question 12: "Would you continue to buy the canned tuna fish that you usually buy if its price increases by 10%?"

12.1.incre	COUNT	PERCENT	CUMCNT	CUMPCT
0	4	12.50	4	12.50
1	27	84.38	31	96.88
2	1	3.12	32	100.00
N=	32			

Question 13: "Would you still continue to buy the canned tuna fish that you usually buy if its price increases by another 10%?"

13.2.incre	COUNT	PERCENT	CUMCNT	CUMPCT
0	6	18.75	6	18.75
1	12	37.50	18	56.25
2	10	31.25	28	87.50
99	4	12.50	32	100.00
N=	32			

Question 14: "Where do you buy your canned tuna fish?"

14.market	COUNT	PERCENT	CUMCNT	CUMPCT
0	2	6.25	2	6.25
1	30	93.75	32	100.00
N=	32			

14.grocey	COUNT	PERCENT	CUMCNT	CUMPCT
0	27	84.38	27	84.38
1	5	15.62	32	100.00
N=	32			

Question 15: "Would you buy another brand or brands if your favorite brand or brands do not exist in the shopping center?

15.yes/no	COUNT	PERCENT	CUMCNT	CUMPCT
0	11	34.37	11	34.37
1	21	65.63	32	100.00
N=	32			

Question 18: "Sexuality?"

18.sex	COUNT	PERCENT	CUMCNT	CUMPCT
1	15	46.88	15	46.88
2	17	53.12	32	100.00
N=	32			

Question 19: "Occupation?"

19.occu	COUNT	PERCENT	CUMCNT	CUMPCT
1	9	28.12	9	28.12
2	15	46.88	24	75.00
3	8	25.00	32	100.00
N=	32			

Question 22: "Age?"

2.age	COUNT	PERCENT	CUMCNT	CUMPCT
1	11	34.37	11	34.37
2	12	37.50	23	71.87
3	9	28.12	32	100.00
N=	32			

Question 23: "Monthly income?"

23.income	COUNT	PERCENT	CUMCNT	CUMPCT
1	7	21.87	7	21.87
2	13	40.62	20	62.50
3	9	28.12	29	90.63
4	3	9.37	32	100.00
N=	32			

APPENDIX 4: CROSS TABULATION RESULTS

Question 1
Cross tabulation between frequency &.age

ROWS: 1.frequ COLUMNS: 22.age

	1	2	3	ALL
1	2	3	1	6
	6.25	9.37	3.12	18.75
	2	3	1	6
2	1	0	3	4
	3.12	--	9.37	12.50
	1	0	3	4
3	3	3	0	6
	9.37	9.37	--	18.75
	3	3	0	6
4	4	3	4	11
	12.50	9.37	12.50	34.37
	4	3	4	11
5	1	3	1	5
	3.12	9.37	3.12	15.62
	1	3	1	5
ALL	11	12	9	32
	34.37	37.50	28.12	100.00
	11	12	9	32

CHI-SQUARE = 9.301 WITH D.F. = 8

CELL CONTENTS --
COUNT
% OF TBL
COUNT

Cross tabulation between frequency & income

ROWS: 1.frequ COLUMNS: 23.income

	1	2	3	4	ALL
1	1	2	2	1	6
	3.12	6.25	6.25	3.12	18.75
	1	2	2	1	6
2	0	1	3	0	4
	--	3.12	9.37	--	12.50
	0	1	3	0	4
3	1	4	1	0	6
	3.12	12.50	3.12	--	18.75
	1	4	1	0	6
4	4	3	3	1	11
	12.50	9.37	9.37	3.12	34.37
	4	3	3	1	11
5	1	3	0	1	5
	3.12	9.37	--	3.12	15.62
	1	3	0	1	5
ALL	7	13	9	3	32

21.87	40.62	28.12	9.37	100.00
7	13	9	3	32

CHI-SQUARE = 11.106 WITH D.F. = 12

CELL CONTENTS --
COUNT
% OF TBL
COUNT

Cross tabulation between frequency & occupation

ROWS: 1.frequ COLUMNS: 19.occupation

	1	2	3	ALL
1	3	2	1	6
	9.37	6.25	3.12	18.75
	3	2	1	6
2	2	1	1	4
	6.25	3.12	3.12	12.50
	2	1	1	4
3	0	3	3	6
	--	9.37	9.37	18.75
	0	3	3	6
4	3	6	2	11
	9.37	18.75	6.25	34.37
	3	6	2	11
5	1	3	1	5
	3.12	9.37	3.12	15.62
	1	3	1	5
ALL	9	15	8	32
	28.12	46.88	25.00	100.00
	9	15	8	32

CHI-SQUARE = 6.408 WITH D.F. = 8

CELL CONTENTS --
COUNT
% OF TBL
COUNT

Question 2
Cross tabulation between 'ease in preparation' criterion & occupation

ROWS: 2.practical COLUMNS: 19.occupation

	1	2	3	ALL
0	3	5	0	8
	9.37	15.62	--	25.00
	3	5	0	8
1	6	10	8	24
	18.75	31.25	25.00	75.00
	6	10	8	24
ALL	9	15	8	32
	28.12	46.88	25.00	100.00
	9	15	8	32

CHI-SQUARE = 3.556 WITH D.F. = 2

Cross tabulation between the 'white meat' criterion & age

ROWS: 2.white COLUMNS: 22.age

	1	2	3	ALL
0	7	5	4	16
	21.87	15.62	12.50	50.00
	7	5	4	16
1	4	7	5	16
	12.50	21.87	15.62	50.00
	4	7	5	16
ALL	11	12	9	32
	34.37	37.50	28.12	100.00
	11	12	9	32

CHI-SQUARE = 1.263 WITH D.F. = 2

CELL CONTENTS --
COUNT
% OF TBL
COUNT

Question 7
Cross tabulation between 'brand loyalty' & 'advertisement awareness'

ROWS: 7.adverdar COLUMNS: 9.purchase dardanel only

	0	1	99	ALL
0	1	2	3	6
	3.12	6.25	9.37	18.75
	1	2	3	6
1	2	15	8	25
	6.25	46.88	25.00	78.13
	2	15	8	25
99*	0	0	1	1
	--	--	3.12	3.12
	0	0	1	1
ALL	3	17	12	32
	9.37	53.12	37.50	100.00
	3	17	12	32

* 99 indicates one respondent who is not aware of the brands

CHI-SQUARE = 3.174 WITH D.F. = 4

CELL CONTENTS --
COUNT
% OF TBL
COUNT

ROWS: 7adversup. COLUMNS: 9.purchase superton only

	0	1	99	ALL
0	12	1	7	20
	37.50	3.12	21.87	62.50
	12	1	7	20

1	5 15.62 5	2 6.25 2	4 12.50 4	11 34.37 11
99	0 -- 0	0 -- 0	1 3.12 1	1 3.12 1
ALL	17 53.12 17	3 9.37 3	12 37.50 12	32 100.00 32

CHI-SQUARE = 3.322 WITH D.F. = 4

CELL CONTENTS --
COUNT
% OF TBL
COUNT

ROWS: 7.adverkinis COLUMNS: 9.purchase kinos only

	0	1	99	ALL
0	5 15.62 5	1 3.12 1	3 9.37 3	9 28.12 9
1	13 40.62 13	1 3.12 1	8 25.00 8	22 68.75 22
99	0 -- 0	0 -- 0	1 3.12 1	1 3.12 1
ALL	18 56.25 18	2 6.25 2	12 37.50 12	32 100.00 32

CHI-SQUARE = 2.191 WITH D.F. = 4

CELL CONTENTS --
COUNT
% OF TBL
COUNT

Questions 18-23
Cross tabulation between demographic characteristics

ROWS: 18.sex COLUMNS: 19.occupation

	1	2	3	ALL
1	0 --	12 37.50	3 9.37	15 46.88
2	9 28.12	3 9.37	5 15.62	17 53.12
ALL	9 28.12	15 46.88	8 25.00	32 100.00

CELL CONTENTS --
COUNT
% OF TBL

ROWS: 18.sex COLUMNS: 22.age

	1	2	3	ALL
1	6 18.75	8 25.00	1 3.12	15 46.88
2	5 15.62	4 12.50	8 25.00	17 53.12
ALL	11 34.37	12 37.50	9 28.12	32 100.00

CELL CONTENTS --
COUNT
% OF TBL

ROWS: 18.sex COLUMNS: 23.income

	1	2	3	4	ALL
1	3 9.37	9 28.12	2 6.25	1 3.12	15 46.88
2	4 12.50	4 12.50	7 21.87	2 6.25	17 53.12
ALL	7 21.87	13 40.62	9 28.12	3 9.37	32 100.00

CELL CONTENTS --
COUNT
% OF TBL

ROWS: 19.occupation COLUMNS: 23.income

	1	2	3	4	ALL
1	1 3.12	1 3.12	5 15.62	2 6.25	9 28.12
2	2 6.25	9 28.12	3 9.37	1 3.12	15 46.88
3	4 12.50	3 9.37	1 3.12	0 --	8 25.00
ALL	7 21.87	13 40.62	9 28.12	3 9.37	32 100.00

CELL CONTENTS --
COUNT

ROWS: 22.age COLUMNS: 23.income

	1	2	3	4	ALL
1	6 18.75	4 12.50	1 3.12	0 --	11 34.37
2	1 3.12	7 21.87	2 6.25	2 6.25	12 37.50

3	0	2	6	1	9
	--	6.25	18.75	3.12	28.12
ALL	7	13	9	3	32
	21.87	40.62	28.12	9.37	100.00

CELL CONTENTS --
COUNT
% OF TBL

Question 15
The Effect of Availability on Brand Loyalty

ROWS: 8.brand loyal/not COLUMNS: 15.purchase the available brand/not if the favorite brand/s is not available

	0	1	ALL
0	3	9	12
	9.37	28.12	37.50
	3	9	12
1	8	12	20
	25.00	37.50	62.50
	8	12	20
ALL	11	21	32
	34.37	65.63	100.00
	11	21	32

CHI-SQUARE = 0.748 WITH D.F. = 1

CELL CONTENTS --
COUNT
% OF TBL
COUNT

APPENDIX 5: DESCRIPTIVE STATISTICS & ANOVA RESULTS (Hsu's and Tukey's tests are included)

IMPORTANCE RATINGS

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
16.economic	32	3.875	4.000	3.929	0.793	0.140
16.quality	32	4.812	5.000	4.857	0.396	0.070
16.adver	32	3.500	4.000	3.571	0.672	0.119
16.discout	32	3.656	4.000	3.679	0.745	0.132
16.gifts	32	2.625	3.000	2.643	0.942	0.166
16.panel	32	2.687	3.000	2.714	1.030	0.182
16.sweep	32	2.125	2.000	2.143	0.751	0.133

	MIN	MAX	Q1	Q3
16.economic	1.000	5.000	4.000	4.000
16.quality	4.0000	5.000	5.000	5.000
16.adver	2.000	4.000	3.000	4.000
16.dicount	2.000	5.000	3.000	4.000
16.gifts	1.000	4.000	2.000	3.000
16.panel	1.000	4.000	2.000	3.750
16.sweep	1.000	3.000	2.000	3.000

DESCRIPTIVE STATISTICS FOR PRICE

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
17.ecokinos	16	16	3.937	4.000	3.929	0.680	0.170
17.ecosuper	19	13	3.211	3.000	3.235	0.713	0.164
17.ecodarda	26	6	3.038	3.000	3.083	0.824	0.162
17.ecother	3	28	3.17	4.00	3.17	1.89	1.09

	MIN	MAX	Q1	Q3
17.ecokinos	3.000	5.000	3.250	4.000
17.ecosuper	2.000	4.000	3.000	4.000
17.ecodar	1.000	4.000	2.750	4.000
17.ecother	1.00	4.50	1.00	4.50

ANALYSIS OF VARIANCE ON PRICE

```
SOURCE     DF        SS        MS        F        p
brand       2     8.386     4.193     7.36    0.001
ERROR      58    33.057     0.570
TOTAL      60    41.443
                                   INDIVIDUAL 95% CI'S FOR MEAN
                                   BASED ON POOLED STDEV
LEVEL       N      MEAN     STDEV  ------+---------+---------+---------+
    1      16    3.9375    0.6801                   (-------*------)
    2      19    3.2105    0.7133    (------*------)
    3      26    3.0385    0.8237  (-----*-----)
                                   ------+---------+---------+---------+
POOLED STDEV =   0.7549                3.00      3.50      4.00      4.50
```

```
Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

Level      Lower    Center     Upper  --+---------+---------+---------+---------
    1     0.0000    0.7270    1.1420                          (-----------*-------)
    2    -1.1420   -0.7270    0.0000     (------*-----------)
    3    -1.2876   -0.8990    0.0000   (-----*--------------)
                                      --+---------+---------+---------+---------
                                      -1.20     -0.60     -0.00      0.60
```

```
Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0407

Critical value = 2.96

Intervals for (column level mean) - (row level mean)

              1          2

     2    0.1908
          1.2631

     3    0.3970    -0.3048
          1.4011     0.6490
```

DESCRIPTIVE STATISTICS FOR QUALITY

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
17.quakin	17	15	3.235	3.000	3.267	0.970	0.235
17.quasup	19	13	3.947	4.000	4.000	0.705	0.162
17.quadar	28	4	4.429	4.500	4.462	0.634	0.120
17.quaoth	3	29	4.667	5.000	4.667	0.577	0.333

	MIN	MAX	Q1	Q3
17.quakin	1.000	5.000	3.000	4.000
17.quasup	2.000	5.000	4.000	4.000
17.quadar	3.000	5.000	4.000	5.000
17.quaoth	4.000	5.000	4.000	5.000

ANALYSIS OF VARIANCE ON QUALITY

```
SOURCE      DF        SS         MS          F         p
brand        2    15.074      7.537      13.19     0.000
ERROR       61    34.863      0.572
TOTAL       63    49.937
                                       INDIVIDUAL 95% CI'S FOR MEAN
                                       BASED ON POOLED STDEV
 LEVEL       N      MEAN      STDEV    ---+---------+---------+---------+---
     1      17    3.2353     0.9701    (-------*------)
     2      19    3.9474     0.7050                   (------*------)
     3      28    4.4286     0.6341                              (-----*----)
                                       ---+---------+---------+---------+---
POOLED STDEV =    0.7560                3.00      3.50      4.00      4.50

Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

 Level     Lower    Center     Upper  -------+---------+---------+---------+----
     1   -1.5698   -1.1933    0.0000   (-----*-------------------)
     2   -0.8452   -0.4812    0.0000              (-----*--------)
     3    0.0000    0.4812    0.8452                           (-------*-----)
                                      -------+---------+---------+---------+----
                                          -1.20     -0.60     -0.00      0.60
```

```
Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0406

Critical value = 2.96

Intervals for (column level mean) - (row level mean)

                1          2

     2    -1.2403
          -0.1838

     3    -1.6798    -0.9515
          -0.7068    -0.0109
```

DESCRIPTIVE STATISTICS FOR ADVERTISEMENTS

```
                 N        N*      MEAN    MEDIAN    TRMEAN     STDEV    SEMEAN
17.advkin       17        15     4.294     5.000     4.400     0.985     0.239
17.advsup       19        13     3.158     3.000     3.235     0.958     0.220
17.advdar       28         4     4.179     4.000     4.269     0.905     0.171
17.advoth        3        29     1.167     1.000     1.167     0.289     0.167

               MIN       MAX        Q1        Q3
17.advkin    2.000     5.000     3.500     5.000
17.advsup    1.000     4.000     2.000     4.000
17.advdar    1.000     5.000     4.000     5.000
17.advoth    1.000     1.500     1.000     1.500
```

ANALYSIS OF VARIANCE ON ADVERTISEMENT

```
brand        2     15.275     7.637      8.60     0.001
ERROR       61     54.163     0.888
TOTAL       63     69.437
                                    INDIVIDUAL 95% CI'S FOR MEAN
                                    BASED ON POOLED STDEV
 LEVEL       N      MEAN     STDEV  -----+---------+---------+---------+-
     1      17    4.2941    0.9852                   (-------*------)
     2      19    3.1579    0.9582  (-------*------)
     3      28    4.1786    0.9049                   (-----*-----)
                                    -----+---------+---------+---------+-
POOLED STDEV =    0.9423                3.00      3.60      4.20      4.80

Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

 Level     Lower     Center      Upper  --------+---------+---------+---------+---
     1   -0.3538     0.1155     0.5849                       (-------*-------)
     2   -1.6458    -1.1362     0.0000   (-------*-----------------)
     3   -0.5849    -0.1155     0.3538                (-------*-------)
                                        --------+---------+---------+---------+---
                                             -1.20     -0.60     -0.00      0.60


Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0406
```

```
Critical value = 2.96

Intervals for (column level mean) - (row level mean)

               1          2

     2    0.4778
          1.7947

     3   -0.4909    -1.6069
          0.7220    -0.4345
```

DESCRIPTIVE STATISTICS FOR DISCOUNTS

```
                   N         N*       MEAN     MEDIAN    TRMEAN     STDEV    SEMEAN
17.diskin         15         17      3.000      3.000     3.077     1.069     0.276
17.dissup         18         14      3.056      3.000     3.125     0.873     0.206
17.disdar         25          7      2.880      3.000     2.870     1.092     0.218
17.disoth          3         29      2.83       3.00      2.83      1.76      1.01

                 MIN        MAX         Q1         Q3
17.diskin      1.000      4.000      2.000      4.000
17.disup       1.000      4.000      2.750      4.000
17.disdar      1.000      5.000      2.000      4.000
17.disoth      1.00       4.50       1.00       4.50
```

ANALYSIS OF VARIANCE ON DISCOUNTS

```
SOURCE       DF          SS          MS          F         p
brand         2        0.35        0.17       0.17     0.848
ERROR        55       57.58        1.05
TOTAL        57       57.93
                                           INDIVIDUAL 95% CI'S FOR MEAN
                                           BASED ON POOLED STDEV
 LEVEL        N        MEAN       STDEV   --------+---------+---------+--------
     1       15       3.000       1.069   (----------------*-----------------)
     2       18       3.056       0.873       (---------------*---------------)
     3       25       2.880       1.092   (-------------*-------------)
                                          --------+---------+---------+--------
POOLED STDEV =        1.023                     2.70      3.00      3.30

Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

 Level      Lower      Center      Upper  ----------+---------+---------+---------+-
     1     -0.635     -0.056      0.524    (----------------*----------------)
     2     -0.524      0.056      0.635        (----------------*---------------)
     3     -0.688     -0.176      0.337  (--------------*--------------)
                                          ----------+---------+---------+---------+-
                                                 -0.35      0.00      0.35      0.70


Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0407

Critical value = 2.96
```

```
Intervals for (column level mean) - (row level mean)

                  1          2

      2     -0.804
             0.693

      3     -0.579     -0.486
             0.819      0.838
```

DESCRIPTIVE STATISTICS FOR SMALL GIFTS

```
                    N         N*      MEAN    MEDIAN    TRMEAN     STDEV    SEMEAN
17.giftkin         15         17     2.133     2.000     2.154     0.834     0.215
17.giftsup         18         14     3.056     3.000     3.063     0.998     0.235
17.giftdar         25          7     2.240     2.000     2.174     1.052     0.210
17.giftoth          2         30     1.750     1.750     1.750     0.354     0.250

                  MIN        MAX        Q1        Q3
17.giftkin      1.000      3.000     1.000     3.000
17.giftsup      1.000      5.000     2.000     4.000
17.giftdar      1.000      5.000     1.000     3.000
17.giftoth      1.500      2.000         *         *
```

ANALYSIS OF VARIANCE ON SMALL GIFTS

```
SOURCE      DF          SS          MS          F        p
brand        2       9.193       4.597       4.75    0.013
ERROR       55      53.238       0.968
TOTAL       57      62.431
                                        INDIVIDUAL 95% CI'S FOR MEAN
                                        BASED ON POOLED STDEV
 LEVEL       N       MEAN       STDEV   ---+---------+---------+---------+---
     1      15     2.1333      0.8338   (--------*-------)
     2      18     3.0556      0.9984                   (-------*-------)
     3      25     2.2400      1.0520       (-----*------)
                                        ---+---------+---------+---------+---
POOLED STDEV =     0.9838                 1.80      2.40      3.00      3.60

Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

 Level      Lower     Center      Upper --+---------+---------+---------+---------
     1    -1.4794    -0.9222     0.0000  (-------*------------)
     2     0.0000     0.8156     1.3082                       (------------*-------)
     3    -1.3082    -0.8156     0.0000    (------*-----------)
                                        --+---------+---------+---------+---------
                                       -1.40     -0.70      0.00      0.70


Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0407

Critical value = 2.96

Intervals for (column level mean) - (row level mean)
```

```
            1           2

2    -1.6421
     -0.2023

3    -0.7792     0.1790
      0.5659     1.4521
```

DESCRIPTIVE STATISTICS FOR TASTE PANELS

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
17.pankin	14	18	2.714	3.000	2.667	0.726	0.194
17.pansup	17	15	2.588	2.000	2.600	0.939	0.228
17.pandar	24	8	2.458	2.000	2.409	0.884	0.180
17.panoth	2	30	1.750	1.750	1.750	0.354	0.250

	MIN	MAX	Q1	Q3
17.pankin	2.000	4.000	2.000	3.000
17.pansup	1.000	4.000	2.000	3.500
17.pandar	1.000	5.000	2.000	3.000
17.panoth	1.500	2.000	*	*

ANALYSIS OF VARIANCE ON TASTE PANELS

```
SOURCE      DF        SS         MS        F        p
brand        2     0.704      0.352     0.38    0.686
ERROR       53    49.135      0.927
TOTAL       55    49.839
                                     INDIVIDUAL 95% CI'S FOR MEAN
                                     BASED ON POOLED STDEV
 LEVEL       N      MEAN      STDEV  --+---------+---------+---------+----
     1      14    2.7143     0.7263         (-------------*-------------)
     2      17    2.5882     0.9393       (------------*------------)
     3      25    2.4400     1.0832   (----------*----------)
                                     --+---------+---------+---------+----
POOLED STDEV =    0.9628             2.10      2.45      2.80      3.15
```

Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

```
 Level     Lower     Center     Upper ---------+---------+---------+---------+-
     1   -0.4369     0.1261    0.6890          (-------------*-------------)
     2   -0.6890    -0.1261    0.4369    (-------------*-------------)
     3   -0.7950    -0.2743    0.2464 (------------*------------)
                                      ---------+---------+---------+---------+-
                                            -0.40     -0.00      0.40      0.80
```

Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0407

Critical value = 2.97

```
Intervals for (column level mean) - (row level mean)

              1          2

     2   -0.6037
          0.8558

     3   -0.4007    -0.4874
          0.9493     0.7839
```

DESCRIPTIVE STATISTICS FOR SWEEPSTAKES.

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
17.swekin	15	17	2.200	2.000	2.154	0.862	0.223
17.swesup	18	14	3.167	3.000	3.187	1.043	0.246
17.swedar	25	7	2.440	3.000	2.391	1.083	0.217
17.sweoth	2	30	1.750	1.750	1.750	0.354	0.250

	MIN	MAX	Q1	Q3
17.swekin	1.000	4.000	2.000	3.000
17.swesup	1.000	5.000	2.000	4.000
17.swedar	1.000	5.000	1.500	3.000
17.sweoth	1.500	2.000	*	*

ANALYSIS OF VARIANCE ON SWEEPSTAKES

```
SOURCE      DF        SS        MS        F        p
brand        2      8.82      4.41     4.25    0.019
ERROR       55     57.06      1.04
TOTAL       57     65.88
                                    INDIVIDUAL 95% CI'S FOR MEAN
                                    BASED ON POOLED STDEV
 LEVEL       N      MEAN     STDEV  ---+---------+---------+---------+---
     1      15     2.200     0.862   (--------*-------)
     2      18     3.167     1.043                   (-------*-------)
     3      25     2.440     1.083         (------*-----)
                                    ---+---------+---------+---------+---
POOLED STDEV =     1.019               1.80      2.40      3.00      3.60
```

```
Hsu's MCB (Multiple Comparisons with the Best)

    Family error rate = 0.100

Critical value = 1.62

Intervals for level mean minus largest of other level means

 Level     Lower    Center     Upper ---+---------+---------+---------+-------
     1    -1.544    -0.967     0.000  (-------*-------------)
     2     0.000     0.727     1.237                       (---------*-------)
     3    -1.237    -0.727     0.000      (-------*---------)
                                     ---+---------+---------+---------+-------
                                      -1.40     -0.70      0.00      0.70
```

```
Tukey's pairwise comparisons

    Family error rate = 0.100
Individual error rate = 0.0407

Critical value = 2.96
```

```
Intervals for (column level mean) - (row level mean)

              1          2

     2    -1.712
          -0.221

     3    -0.936      0.068
           0.456      1.386
```

APPENDIX 6

EXPLANATION OF THE APPLIED PROCESSES

Descriptive Statistics: The numerical descriptive measures that provide very brief and easy-to-understand summaries of a data collection. There are two main categories: measures of central tendency and measures of variability.

Chi-square Goodness-of-fit Test: Statistical test to determine whether some observed pattern of frequencies corresponds to an expected pattern.

Analysis of Variance (ANOVA): Statistical test employed with interval data to determine if k (k>2) samples came from populations with equal means.
Hsu' s test: The test compares each level mean with the best of the other means.
Tukey's test: The test provides confidence intervals for all pairwise differences between level means[2]

[2] The definitions are from the lecture notes of Kemal BÜYÜKKURT.