CONSUMER ATTITUDES AND FACTORS AFFECTING BUYING DECISION FOR FUNCTIONAL FOODS

TÜKETİCİLERİN FONKSİYONEL GIDALARA OLAN YAKLAŞIMINI VE SATINALMALARINI ETKİLEYEN FAKTÖRLER

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ABSTRACT: Consumers are increasingly looking for additional healthier food varieties properties and disease prevention functions of foods. Therefore, these functional products, which were accepted as tools for good health, are likely to be in increasing demand. The main objective of this study was to investigate the effects of gender, age, education, health conditions, cost of foods and some information found on packaging material on the preference of functional foods. Total 249 people between 20-60 years old were included in this study. They were asked to fill a questionnaire with 9 questions related to the subject. The data were analyzed by multiple correspondence analysis technique. The results showed that young consumers were not interested in the effects of eating habits on health. On the other hand, the concern in consumption habit and health increased in older people. In addition, young and middle aged people only read the energy value and nutritional information on the label of the food, but female consumers read all information on the label of the product, which they bought. The increase in the level of the education also increased the preference of healthier foods.

Keywords Functional foods, survey, consumers, multiple correspondence analysis technique

ÖZET: Günümüzde tüketiciler gıdalardan sağlık üzerine olumlu katkı sağlayan ve hastalıkları önleyici etkiler beklemektedir. Bunun sonucu olarak, sağlık üzerinde olumlu etkisi olan fonksiyonel gıdalara talep gittikçe artmaktadır. Bu çalışmada, tüketicilerin bu tür gıdalara olan taleplerinin, cinsiyet, yaş, eğitim seviyesi, sağlık durumları, gıdaların fiyat ve etiket bilgileri gibi faktörlere bağlı olarak değişimin araştırılması hedeflenmiştir. Bu çalışma 9 adet sorudan oluşan bir anket çalışması olup, yaşları 20-60 arasında olan 249 kişi üzerinde yürütülmüştür. Ankete katılanların fonksiyonel gıdalara olan taleplerinin dikkate alınan faktörlere göre değişimlerinin ortaya konulabilmesi amacıyla çoklu uyum analizi tekniğinden yararlanılmıştır. Yapılan çoklu uyum analizleri sonucunda, genç tüketicilerin beslenme alışkanlıklarının sağlık üzerine etkisiyle ilgilenmedikleri görülmüştür. Diğer taraftan, beslenmenin sağlık üzerine etkisi olduğu düşüncesinin yaşla birlikte artma eğiliminde olduğu gözlenmiştir. Genç ve orta yaşlı tüketicilerin gıdaların etiketleri üzerindeki besin ve enerji değerlerini inceledikleri ve bu durumun özellikle bayanlarda çok daha belirgin olduğu görülmüştür. Tüketicilerin eğitim seviyesi arttıkça beslenme alışkanlıklarında sağlık ön plana çıkmaya başlamıştır.

Anahtar kelimeler: Fonksiyonel gıdalar, anket, tüketici, çoklu uyum analizi tekniği

INTRODUCTION

Functional food products are new segment of food market and they are described as foods that may provide health benefits beyond their basic nutrition (1). Within the last decade, there has been an increasing explosion of consumer's interest in healthy eating and nutritional aspects of food. These considerations influences food choices of consumers and has provided a big opportunity for functional food market (2).

Understanding of consumer trends is intrinsic for development of functional food market. There are number of consumer trends and factors shaping the market (3). Health is one of the most important motivations behind

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food choices. Consumers are more concern with their diet to maintain good health (4). Researches showed that food plays an important role in disease prevention, or slowing the progress of disease (5). According to the researches, 33% of Americans are adding particular foods or ingredients to their diet in an effort to improve or maintain their health and also 13% of them are adding more fruit to their diet (6). The increasing consumer awareness in combination with scientific researches has increased the demand for information on functional foods. Age and education also can mediate impressions of functional foods. General interest in food and health related issues increases with age (7). Earlier studies have also reported that there are also some differences in what men and women consider to be important in a healthy diet. Women are more aware than men choosing the foods that they considered to be healthy in their daily diet and changing their eating habits (7, 8).

Development of functional foods requires a strategy of its own by consumer and scientific researches. Therefore, development of functional components and technological solutions can be very expensive. So, to avoid major failures, functional food manufacturers should monitor consumer's attitudes toward such foods regularly (9).

The aims of this study were to investigate Turkish consumer's perception and awareness of relation between health and food choices, health benefits they expect from foods, their consumption intention for any specific food product and relation of these factors with their gender, age and education status in Çanakkale Region.

MATERIAL AND METHODS

Total 249 people, 107 female and 142 male with ages between 20-60 years old, from university personel, students and customers of supermarkets volunteered in this study. They were asked to answer 9-question survey. The definition of functional food was given to each person at the beginning of the survey. All variables and categories included in this study were shown in Table 1. Gender, age and educational background of people involved in the survey detailed in Table 2.

Multiple Correspondence Analysis was used to evaluate the data. Chi-square, Fisher-exact probability test, G-statistics and log-linear models were usually used to analyse categorical variables. However, these techniques require some prerequisites. In addition, results are not very informative. Also, graphical presentation of the data is not possible. Therefore, Multiple Correspondences Analysis was preferred to use as an alternative technique to analyse these types of data (10, 11, 12).

RESULTS AND DISCUSSION

Effects of age and gender on the interest of information on food labels were shown in Figure 1. As seen, women are much more concern with the claims such as light, phytochemical content, health and nutritional information on food labels. While information usually looked for on food labels for 50-60 year-olds men was phytochemical content claims, 20-30 and 30-40 year-olds participants are most likely interested in nutrition and energy facts. Similarly, a previous study has shown that consumers use much more health and phytochemical content information provided on the food label (13). So, considering the results of these two studies, they agree with each other.

Figure 2 shows the effects of education and age on the consumption purposes of functional food. Participants in 20-30 year-old and graduated from a university were interested in especially with the energy boosting effects of functional foods. On the other hand, expectations from a functional food can change with the age of consumers. As people get older, they tend to have health promotion effects offered by functional foods. These results are similar to findings of Saher *et al*. (4) and Gilbert (14). We can also say that participants had primary and middle school degree are interested in functional foods, which have prevention effect for disease and

Table 1. Variables and categories from the survey study

Variables	Categories
Gender	(1) Male, (2) Female
Age	(1) 20-30, (2) 30-40, (3) 40-50, (4) 40-50, (5) 50-60
Education	(1) Primary school, (2) Middle school, (3) High School, (4) University, (5) Post graduation
Effect of nutrition on improving health and preventing disease	(1) Most effect, (2) Medium effect, (3) Little effect, (4) No effect, (5) Not know
Purpose of functional food consumption	(1) Keeping good health, (2) Energy boosting effect, (3) Keeping good health & prevention roles on disease (4) Prevention roles on disease, (5) Keeping good health & prevention roles on disease, energy boosting effects, (6) Prevention roles on disease, energy boosting effects, (7) Keeping good health, energy boosting effects
Changes in eating habits	(1) Low-fat diet, vegetable & fruit, herbal products, (2) Fish, (3) No change, (4) Low-fat diet, vegetable & fruit, herbal products, fish
Information looked for on food labels	(1) Nutrition& energy facts , (2) Light claims, (3) Name of functional ingredient claim, (4) Name of functional ingredient and health benefits claims, (5) Not looking at label, (6) Nutrition& energy facts and health benefits claim
Consumption trends of functional foods	(1) Genetically modified plants and food crops, (2) Functional ingredient enriched in naturally found in original food, (3) Functional ingredient fortified in different foods, (4) As a supplement like vitamin pill, (5) Not consumption
Factors affecting buying functional foods	(1) Price of it twice as normal food, (2) Price same as normal food, (3) Need doctor's recommendation, (4) Need more information

provide good health. As a result, people expect more health-promoting properties from foods, when they have higher education levels.

Figure 3 shows the effect of the age on the relation between eating habits and health concerns. Younger consumers thought that nutrition had no effect on keeping good health and prevention of some diseases. So they have made no change on their eating habits. As the age increase, people believed that eating healthy foods was a better way to manage illness and keep good health conditions. So they have changed their diet to become healthier. They preferred to eat more vegetables, fish and herbal products and low fat diets. Statistics showed that there was a significant increase in the number of people who took considers healthy eating recommendations and guidelines. As a result, healthy eating habits have risen above 40 % percent (15). In another study, people started to make regular effort to change their nutritional habits and 66% of them have avoided eating some of unhealthier foods (5). Eight out of ten consumers changed their diet because of their concern on heart disease and overweight. They would like to have foods, which have high dietary fiber and less fat. So awareness on healthy life has led to increase in demand for functional and/or enriched foods.

The relation among age and consumer's attitudes and buying intention for functional foods was shown in Figure 4. Younger participants would like to buy these products in the same price rank as the normal foods and

Table 2. Counts and percentages belong to variables and categories

Variables	Categories	Count	Percent
Gender	Male	142	57.03
	Female	107	42.97
Age	20-30	134	53.82
	30-40	61	24.5
	40-50	40	16.06
	50-60	14	5.62
Education	Preschool	13	5.22
	Middle school	8	3.21
	High school	44	17.67
	University	149	59.84
	Post Graduation	35	14.06
Effect of nutrition on improving health and preventing disease	Most effect	166	66.67
	Medium effect	65	26.10
	Little effect	10	4.02
	No effect	3	1.20
	Not know	5	2.01
Aim of consumption	Keeping good health	47	18.88
	Energy boosting effects	89	35.74
	Keeping good health & prevention role on disease	28	11.24
	Prevention roles on disease	29	11.65
	Keeping good health & prevention role on disease, energy boosting effects	43	17.27
	Prevention role on disease, energy boosting effects	10	4.02
	Keeping good health, energy boosting effects	3	1.20
Changes in eating habits	Low-fat diet, vegetable & fruit, herbal products	150	60.24
	Fish	18	7.23
	No change	57	22.89
	Low-fat diet, vegetable & fruit, herbal products, fish	24	9.64
Information looked for on food labels	Nutrition& energy facts	99	39.76
	Light claims	33	13.25
	Name of functional ingredient claim	9	3.61
	Name of functional ingredient and health benefits claims	41	16.47
	Not looking at label	56	22.49
	Nutrition& energy facts and health benefit claims	11	4.42
Consumption trends of functional foods	Genetically modified plants and food crops	74	29.72
	Functional ingredient enriched in naturally found food	49	19.68
	Functional ingredient fortified in different foods	53	21.29
	As a supplement like vitamin pill	20	8.03
	Not consumption	53	21.29
Factor effecting buying functional foods	Price of it twice as normal food	15	6.02
	Price same as normal food	48	19.28
	Need doctor's recommendation	44	17.67
	Need more information	142	57.03

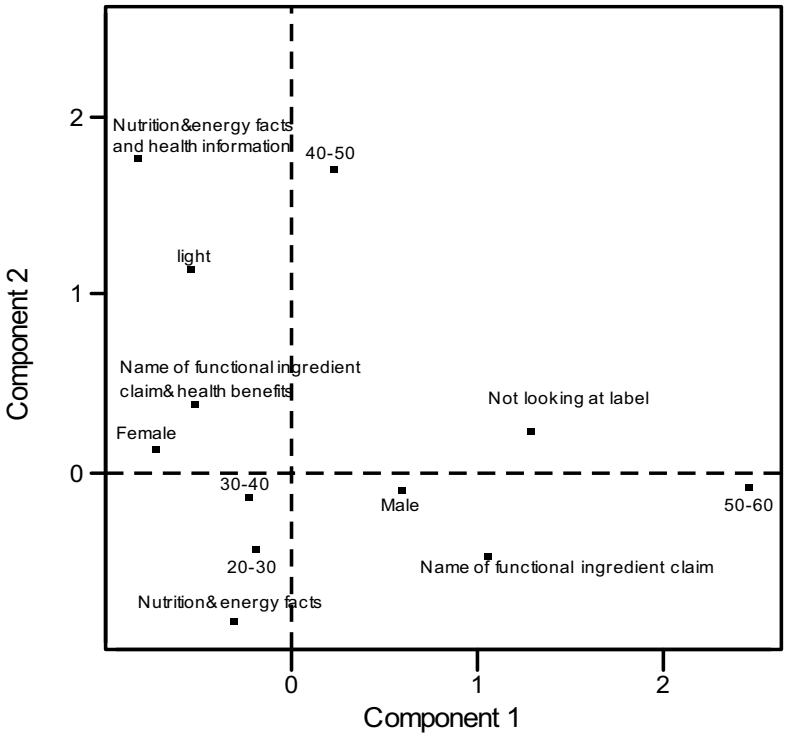

Figure 1. Effect of gender and age on food labeling interest

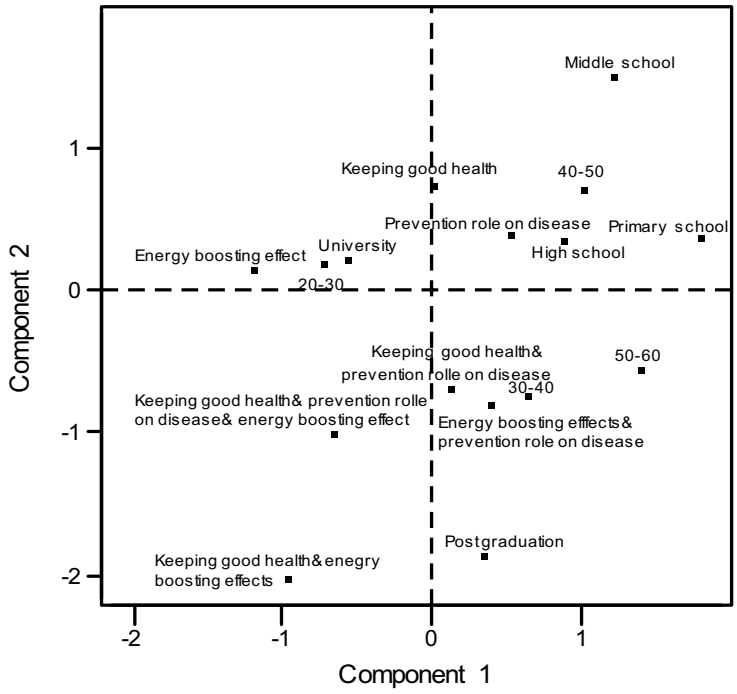

Figure 2. Effect of education level and age on the purpose of functional food consumption

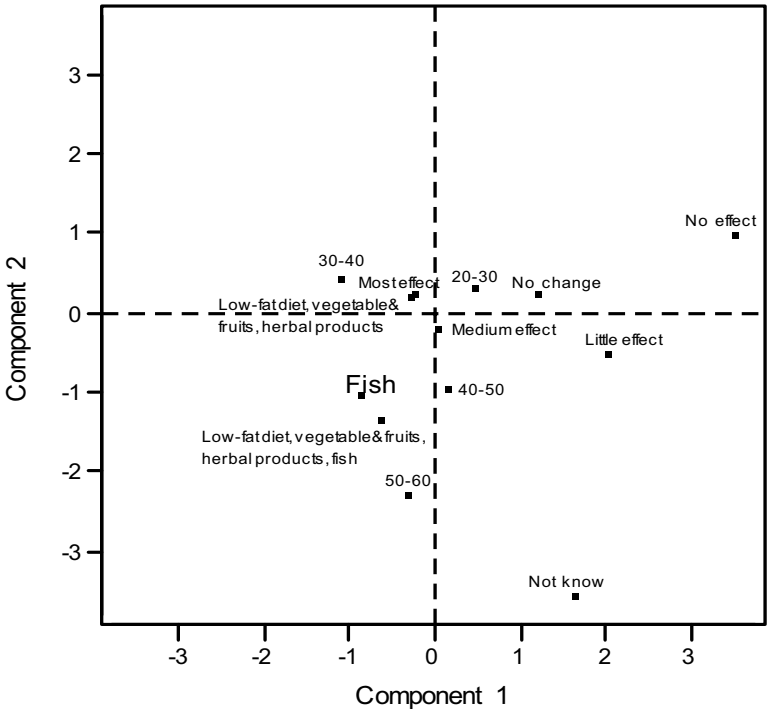

Figure 3. Effect of consumer age on the eating habit changes.

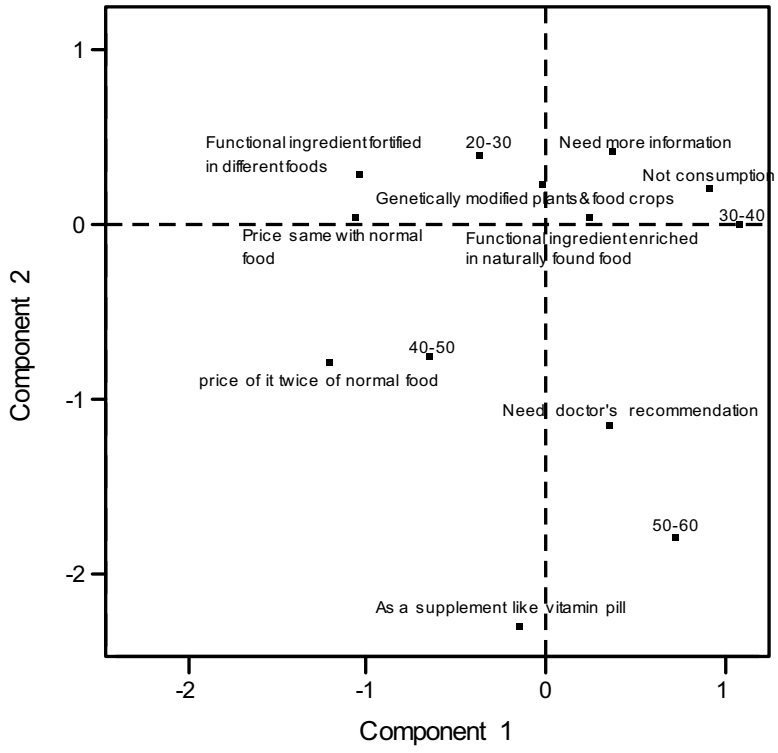

Figure 4. Effect of age on the consumer's consumption trends and buying intention for functional foods

they are also in favor of consuming functional ingredient fortified in different food and genetically modified plants. On the other hand, consumers with the ages between 30-40 year did not want to consume these type of foods and they may consume foods that have been enriched with functional substance that the food already contains. They also wanted to be more informed about functional foods. It can also be said that consumers with 40-50 year-old age groups prefer to consume functional substances as a vitamin pill or as a dietary supplement. Results indicated that consumers at this age group may pay double for these products. However, older generations (50-60 year-old) may consume functional substances with doctor's recommendation. Jones and coworkers (16) conducted a study in Denmark to analyze the consumer's attitudes to measure how they prefer to consume functional substances in a food product. It was found that they would like to have these functional supplements from a food product if it was supplemented with nutrients that normally present in the conventional version of the food. For example, calcium enriched milk is more acceptable over calcium enriched orange juice for consumers. In other words, functional foods need to be positioned close to the natural product to facilitate wider acceptance. And also, it was stated that there was a strong correlation between the level of being informed and the acceptance of functional foods. If consumers are informed about both attributes and personal consequences of foods they would like to buy, try and consume these foods (16).

Several studies were conducted to measure the role of different information provided on functional food labels on consumer's buying intention (13, 17, 18). It was found that consumers received more information about the benefits of the product from health claims than from phytochemical content claims. They were specifically more influenced by the endorsement made by health organizations than others, because health organizations increase the credibility of the product safety. Also, high price of foods did not affect the purchasing decision of consumers because of the health related properties of these type of foods. In general, our findings also agreed with the results of these studies.

In conclusion, consumers are more concern with the effects of food consumption habits on human health now. They prefer the foods that have functional properties. However, the preference of the functional foods was influenced by the gender, age and education level of consumers and some information on packaging material.

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