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Prof. Dr. Mehmet Sarıoğlan
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15 Temmuz Mah. 148136. Sk. No: 9 Şehitkamil/Gaziantep
+90.850 260 09 97
+90.532 289 82 15
www.ozguryayınlari.com
info@ozguryayinlari.com

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1. Introduction

Nutrition is an essential phenomenon for the survival of living organisms (Kılıç and Şanlıer, 2007). Generally, nutrition is defined as the examination of the quantity, characteristics, type, and role of essential nutrients in the body's functioning. The field of nutrition encompasses the composition of foods, their physical and chemical properties, the impact of the production process on food quality, and the development of the most suitable dietary plan according to individual characteristics (Akşit, 1991).

Due to rising living standards today, individuals are examining the quality of the food they consume and its impact on health more carefully (Kıyak et al., 2014). Particularly within the context of gastronomy, consumers' evaluations of food and beverage products are shaped not only by the product's content but also by the experience and meaning it offers (Girgin, Sökmen and Sökmen, 2022). In response to this, the scientific and technological communities are conducting research aimed at enhancing the nutritional properties of foods and reducing their disease-causing properties (Roberfroid, 1999). Within this framework, foods classified as 'functional' have emerged. Examples of such products include low-calorie foods, foods with increased dietary fibre content, low-sodium

foods, gluten-free foods, probiotics and foods for diabetics (Boyayıcıoğlu, 2012).

Functional foods have recently become a highly popular term on social media and within the scientific community. Thanks to functional foods, sufficient resources and developments are available to create new products aimed at ensuring people's nutrition is carried out in a healthier manner (Granato et al., 2020).

Functional nutrition is defined as "the inclusion of the most beneficial nutrients in the daily diet to ensure the body functions properly and to provide the energy required to meet daily needs" (Güzel Seydim, 2016). Functional foods are nutritious, contribute positively to health (Arısoy, 2013), reduce the likelihood of illness (Hasler and Brown, 2009), and have a positive effect on physical and mental performance due to their functional content (Senorans, Ibanez and Cifuentes, 2003). More broadly, foods to which a health-beneficial component has been added or from which harmful components have been removed can also be defined as functional foods (Ashwell, 2002).

Broadly speaking, functional foods enable consumers to lead a healthier life without significantly altering their dietary habits (Bech-Larsen and Grunert, 2003). Functional foods represent a commercially valuable and successful sector. Further growth is anticipated in the future. When examining the functional food market, the most popular products include yoghurt, cereals, oils, energy/protein bars and beverages (Bogue et al., 2017).

2. Definition and History of Functional Foods

Functional foods have been extensively used from the past to the present for the treatment or prevention of various diseases. This situation is increasing the demand for functional foods day by day (Childs, 2001). Foods can acquire functional properties due to their different characteristics. "Foods that, in addition to meeting the requirements for essential nutrients, provide specific physiological effects in the body and demonstrate efficacy in disease prevention and treatment" are defined as functional foods (cited in Yiğit et al., 2005).

Functional foods are defined as foods that go beyond basic nutrition to provide health benefits; they are more complex than ordinary foods, are intended to be consumed as part of a normal diet, resemble traditional foods, but have been modified to perform physiological roles beyond simply meeting basic nutritional requirements (Roberfroid, 2000). These products are addressed under a separate heading from dietary supplements. The key point here is that consumers can lead a healthier life without making significant changes to their dietary habits (Jonas and Beckmann, 1998). Consumers' primary desire is to purchase and consume healthy foods (Brunsø et al., 1996). However, there is also a situation where

consumers are unable to give up unhealthy dietary habits despite being aware of their negative effects (Williamson et al., 2000). Functional foods hold great potential precisely because they do not require people to change their dietary habits (Bech-Larsen and Grunert, 2003).

When examining the origins of the definition of functional foods, it is evident that the concept emerged as a result of food shortages in Japan (Gosh, 2011; Özkan Özdemir et al., 2009). Following the Second World War, numerous nutrition-related issues arose in Japan. Scientists in the country undertook various studies to address these problems, which were primarily characterised by scarcity and poor-quality nutrition (. As the Japanese economy recovered, certain preferences began to emerge in food choices. During this period, the population aged, and the issue of improving quality of life began to come to the fore. Across the country, foods began to be utilised with the aim of preventing disease and improving quality of life (Arai, 1996). Even after the period of scarcity and poverty, Japanese policymakers promoted functional foods with the aim of reducing healthcare costs (Kwak and Jukes, 2001). The Japanese Ministry of Education first introduced the concept of functional foods in 1984 (Arai, 1996).

Upon conducting more in-depth historical investigations into the concept of functional foods, it is observed that the book titled "Shinongbonchokyung" also mentions the functional properties of foods derived from animal, plant, or mineral sources in ancient China (Hue and Kim, 1997). In addition to all this, the concept of "Nutrasonic" was also used in 1989 by Dr Stephen Felice in accordance with the definition of functional food. This definition emphasises the disease-healing and disease-preventing properties of foods (Vanhie, 2016; Kalra, 2003). However, this definition does not include dietary supplements, sports drinks and medically

formulated foods, which are not found in functional foods (Stirling and Kruh, 2025).

Between 1995 and 1998, more than 100 experts in the field of nutrition and related sciences reached a consensus on the definition of functional foods as part of the European Commission's Harmonisation Action on Functional Food Science, coordinated by the International Institute of Life Sciences ( ). According to the European Consensus Document, functional foods are defined as "foods that demonstrate, in a satisfactory manner, that they beneficially affect one or more target functions in the body, aimed at improving health and well-being and/or reducing the risk of disease, in addition to providing adequate nutritional value." It states that this definition will be accepted as such. This definition has been the most frequently cited definition of functional foods in previous studies (Diplock et al., 1999). In addition to this definition, there are numerous definitions provided by food and nutrition institutes in the literature. The Institute of Medicine's Committee on Food and Nutrition of the US National Academy of Sciences defines functional foods as "any food or food component with a modified composition that may provide a health benefit beyond that of traditional foods" (Earl and Thomas, 1994). The Institute of Food Technologists defines them as "foods that provide health benefits beyond basic nutritional value" (MacAulay et al., 2021); whilst more recent definitions describe them as "natural or processed foods containing biologically active compounds; in defined, effective and non-toxic amounts, that provide a clinically proven and documented health benefit for the prevention, management or treatment of chronic diseases or their symptoms using specific biomarkers." (Martirosyan and Singh, 2015).

Granato-, and colleagues (2020) aimed to examine the definition, classification, and health effects of functional foods. A literature review was conducted for this purpose. According

to the study's findings, careful planning and randomised controlled clinical trials are required to scientifically validate the positive health effects of functional foods. It was stated that innovative technologies can be utilised in the development of these foods to enhance the stability and bioavailability of bioactive components; however, production processes are costly and difficult to implement. The study also emphasised the need to support functional foods for the protection and improvement of public health.

3. The General Status of Functional Foods

Chronic diseases (heart disease, cancer, diabetes, etc.) are among the most significant public health concerns. Diabetes, fat, refined sugar, salt and cholesterol are cited as the primary causes of these health issues. The growing public interest in healthy foods has, in turn, led to increased demand for products developed in this context. Consequently, functional foods have become a significant area of research in the field of food health and technology (Baker et al., 2022).

Recently, in line with the growing interest in functional foods among the public and the scientific community, it has been observed that foods containing functional ingredients, which offer potential benefits to consumers, are being produced and made available in the market. These products are also creating new commercial opportunities. With the aid of technological advancements, different ingredients can be incorporated into the composition of foods for health purposes (Niva, 2007). In this context, there has been a rapid increase in the number of studies on functional foods (Annunziata and Vecchio, 2013). Sales of functional products are growing steadily, particularly in Europe. Consumption of these products is notably more widespread in Central

and Northern European countries. Germany, France and the United Kingdom lead the way among these countries (Van Trijp and Van der Lans, 2007). When examined by product type, dairy products and probiotic products are more successful in the market compared to other functional foods. This demonstrates that dairy products hold a significant place in consumer preferences (Makinen-Aakula, 2006).

The development of functional foods also brings certain challenges. The process of developing such products is quite costly. Furthermore, there is considerable uncertainty regarding consumer acceptance of the product (Dolgopolova et al., 2015). There are highly complex relationships among the factors influencing consumer acceptance of functional foods. In recent years, researchers have been conducting studies in this area (Baker et al., 2021). Whilst Mogendi et al. (2016) focused on the nutritional properties of functional foods, Plasek and Temesi (2019) emphasised the reliability of the effects produced by functional foods in their work. In a study by Bimbo et al. (2017), it was noted that dairy products with enhanced nutritional value attract consumer attention, whilst Kushwah et al. (2019) emphasised that organic foods are perceived more positively. In a study by Baker et al. (2021), the factors determining consumers' preferences for functional foods were investigated. Within this scope, 75 studies published globally were examined and categorised. The analyses were conducted across five distinct categories comprising product characteristics, socio- -demographic characteristics, psychological characteristics, behavioural characteristics, and physical characteristics. Consequently, it was stated that the primary factors influencing consumer acceptance are the combination of the product's carrier and ingredients, health information, price, taste and brand. The study recommended that functional food producers and marketing specialists take these factors into account when

developing product development and consumer acceptance strategies.

The growing popularity of functional foods has, over time, made a positive contribution to people's awareness of and search for healthy foods (Bigliardi and Galati, 2013). This has led to increased demand for functional foods and encouraged producers in this sector to undertake further research (Block, 2011).

For foods to be classified as functional foods, they must possess certain characteristics. These characteristics have been listed by Vural (2004) as follows:

*Possessing both health-improving properties and diet-enhancing qualities.

*The food or its components must provide nutritional benefits.

* The nutritional and medical benefits of the food or its components must be verifiable.

* The food or its components must be safe.

* The physico-chemical properties of the food's components must be correctly defined. Furthermore, the compounds in question must be detectable using qualitative and quantitative methods.

*The food in question must not exhibit harmful effects compared to similar foods.

* Accessibility for those on a standard diet.

* Inclusion of the content of ordinary foods.

* The food in question must not fall within the scope of medicinal products.

4. Classification of Functional Foods

Functional foods can be classified as plant-based products such as soya, linseed, oats and tomatoes, and animal-based products such as dairy products and fish (Güven and Gülmez, 2006). These foods acquire their functional properties either due to characteristics inherent in their natural structure or due to compounds added to their composition. Garlic exhibits functional properties structurally due to the active compound present in its composition, whilst iodised salt acquires this property through the addition of iodine. Similarly, reduced-sodium salts acquire functional properties through the reduction of their harmful effects on health (Erbaş, 2006; Roberfroid, 2000; Roberfroid, 2002).

Scientific proof of a food's functional effect is a prerequisite for it to be designated as a functional food. Furthermore, the nutritional information on functional foods must be of a standard that adequately informs the consumer. To prevent any misleading claims, expressions such as 'disease-preventing, healing, or therapeutic' are prohibited on the packaging of functional foods (Ekşi, 2013). The permitted descriptions within this scope are listed in **Table** 1.

Table 1. Health claims permitted in Turkey (Ekşi, 2013)

Food Component	**Condition for Claim**	**Functional Effect**
Fat/saturated fat/ cholesterol	Low in fat/saturated fat/cholesterol Helps maintain heart and vascular health…	Low in fat/saturated fat/ cholesterol Helps maintain heart and vascular health…
Sodium	Low in	To help lower blood pressure and protect heart and vascular health…
Sugar alcohols	Sugar-free	To help maintain dental health and prevent tooth decay…
Calcium	High in	For tooth development and maintaining bone health…
Probiotics	1×10^{6} CFU/g	In regulating the digestive and immune systems…
Prebiotic	3g/100g	For the growth of probiotics in the gut…
Omega-3 (EPA/ DHA)	5% GG*/100 kcal	To help maintain heart and vascular health…
Omega-3 (DHA)	5% GG per 100 kcal	For the normal development of the brain, eyes and nervous system…
Soya protein	6.25 g per portion	To help lower cholesterol and support cardiovascular health…
Sterols/stanols	0.75 g per portion	Helps lower cholesterol and protect heart and vascular health…

***RDA: Recommended Daily Allowance**

5. Functional Food Compounds

5.1. Probiotics, Prebiotics and Synbiotics

Probiotics are live microorganisms that provide health benefits to the user when consumed in sufficient quantities (Hill et al. 2014). For a substance to be classified as a probiotic, it must be able to survive in an acidic environment and withstand exposure to bile salts found in the human body, possess good absorption capacity in the gut, and demonstrate a clear association with certain health markers in clinical trials (Champagne et al. 2018).

Similarly to probiotics, prebiotics are consumed so that microorganisms can utilise them selectively and provide health benefits to the individual (Gibson et al., 2017). Unlike probiotics, prebiotics improve the survival, growth, metabolism and beneficial health activities of probiotics in the digestive system (Mohanty et al., 2018).

Synbiotics, on the other hand, are a combination of probiotics and prebiotics that support the survival of live microorganisms in the digestive system, effectively enhancing their benefits compared to probiotics or prebiotics alone to provide beneficial effects for the user (Mohanty et al., 2018). In other words, synbiotics are based on the combined use

of prebiotics, which act as a complement and support to probiotics (Krumbeck et al., 2018).

5.2. Antioxidants

In the 1930s, antioxidants (ascorbic acid, tocopherols, etc.) were used solely as food additives to prevent oxidation in foods with high fat concentrations (Carocho et al., 2018). Clinical trials conducted in the 1970s demonstrated that when used in the diet, antioxidants inhibit oxidation processes and serve as an effective tool in preventing oxidative stress in related diseases. Subsequently, antioxidants began to be used worldwide not only as food additives but also as dietary supplements due to their beneficial effects in humans (Cömert and Gökmen, 2018). Antioxidants are generally defined as "a substance that, when present at a lower concentration than an oxidisable substrate in the environment, prevents the oxidation of that substrate" (Halliwell and Gutteridge, 2015). For example, it has been found that regular and balanced consumption of fruits and vegetables, which are rich in antioxidants, reduces the risk of mortality (Parohan et al., 2019). Today, modern consumers are placing constant pressure on the industry to reduce the use of synthetic preservative additives. This demand is forcing the food industry to eliminate these substances from production or even remove them entirely. The industry has also begun to focus on natural alternatives for the preservation of food. In this context, antioxidants derived from plants, foods and industrial by-products are being used for these purposes (Chen and Xu, 2019).

5.3. Polyunsaturated Fatty Acids

Fats are classified as saturated, unsaturated, polyunsaturated and monounsaturated fatty acids. Fatty acids and lipids offer various benefits. These polyunsaturated fatty acids are also referred to as PUFAs (Kaur et al., 2012). These nutrients are

also essential for foetal growth and development in pregnant women. Polyunsaturated fatty acids such as Omega-3 and Omega-6 are key components of the nervous system (Li et al., 2024). In addition, polyunsaturated fatty acids play numerous physiological roles, including cell signalling and transmission, intercellular interaction, membrane fluidity, phospholipid membrane maintenance, reduced inflammation, and improved fatty acid oxidation (Gill et al., 2024).

5.4. Phytosterols

Phytosterols and stanols are lipophilic compounds found naturally in plants either in a free, unbound form or covalently bound via ester or glycosidic bonds. These compounds play a role in the fluidity and permeability of plant cell membranes (Moreau et al., 2018).

Phytosterols are components that feature prominently in the human diet. Plant sterols have a structure very similar to that of cholesterol. These sterols are widely found in nature. They include sitosterol, campesterol and stigmasterol. These compounds are found in high concentrations in vegetable oils, nuts, seeds and cereals. Plant sterols are absorbed less readily in the intestines than cholesterol. Plant sterols or stanols exhibit cholesterol-lowering properties (Piironen et al., 2000; Moreau et al., 2002).

6. Health Concerns Regarding Functional Foods

Functional foods may be met with apprehension by consumers due to the processes they undergo during production and marketing. This situation sometimes leads to a perception of health risks associated with functional foods among consumers. Furthermore, people may perceive functional foods as an attempt to interfere with nature (Bech-Larsen and Grunert, 2003).

In some functional foods, the chemical processes involved in the fortification stage are perceived by consumers as unhealthy additives (Poulsen, 1999). This situation is particularly likely to occur in products such as vegetables, which are already perceived as healthy. As differences in perception may lead to the functional food having an unintended effect on the consumer, care must be taken with the products selected and the language used (Bech-Larsen and Grunert, 2001). Following the repeal in 1985 of the regulation in the United States (US) regarding the processing and labelling of food ingredients , the functional food industry recorded a 20% greater increase in growth compared to the food sector as a whole (Mathios, 2000). However, in this context, the misuse of the production process by food manufacturers led to the

adoption of health claims legislation in 1995, which included stricter measures (Bech-Larsen and Grunert, 2013).

A study conducted by Bech-Larsen and Grunert (2003) sought to determine the perception of the health benefits of functional foods among consumers in Denmark, Finland and the United States. The study also aimed to assess the extent to which factors such as the product's processing method, functional fortification components, basic composition and health claims influenced these perceptions, as well as to evaluate the relationship between these factors and cultural values. Accordingly, the nutritional quality of the product significantly influences the perception of healthiness. For example, whilst consumers considered fortification unnecessary in products already regarded as healthy, such as yoghurt and orange juice, they viewed fortification positively in products perceived as less healthy. Furthermore, the health claim associated with the product contributed to an increase in the perception of its healthiness.

Urala and Lahteenmaki (2004) noted that functional foods have recently become a product category of considerable interest due to their promise of a healthy lifestyle. In their study, they sought to identify the motivational sources behind 1,158 participants' desire to use such products. These motivational sources were examined in terms of seven factors. These factors are listed as follows: the perception of beneficial outcomes from the use of functional foods, trust in functional foods, the perceived need for functional foods, the use of functional foods as a remedy, the absence of nutritional risks in functional foods, the inclusion of functional foods as part of a healthy diet, and the taste of functional foods in relation to their health effects. It has been stated that, of these factors, the perception of the beneficial outcomes to be gained from the use of functional foods is the most important motivating factor in the consumption of such products.

Vella and colleagues (2014) aimed to identify the content knowledge and information needs regarding functional foods among consumers aged 60 and over. A survey was conducted in this study involving 200 participants. Accordingly, it was found that the vast majority of participants consumed functional foods, were aware of their contents, wished to have more information about functional food contents, and generally obtained information from labels and printed publications.

The study by Şimşek et al. (2017) aimed to determine the relationship between the perceived benefits of functional foods and their frequency of use. In the analyses conducted within this scope, a statistically significant, albeit weak, relationship was identified between the perceived benefits of functional foods and their frequency of use.

In the study titled "Perception of functional food consumption by adults: Is there any difference between generations?" (Safraid et al., 2024) , a survey was administered to 522 participants with the aim of identifying the perceptions of young and middle-aged adults regarding functional foods and examining their relationship with socio-economic, health and consumption factors. The results indicate that adults hold a positive perception of functional foods, acknowledging their benefits and the need for their consumption. However, participants expressed doubts regarding whether functional foods deliver the claimed benefits. Furthermore, it was noted that middle-aged individuals perceive functional foods as being akin to medication.

7. Related Studies

In a study conducted by Şimşek and Keşkekci (2023), an attempt was made to determine young people's perceptions of functional foods. Within this scope, a survey was administered to 102 gastronomy and culinary arts students to assess their levels of perception and awareness. The data obtained were interpreted in accordance with criteria in the literature. Within this scope, it was found that perceptions regarding the content of functional foods were controversial and characterised by a lack of trust. It was stated that the reasons for this lack of trust included the notion of 'enough for the population', the expectation of 'more product with less effort', high profit targets, and inadequacies in regulatory controls. Furthermore, it was found that the use of functional foods led to a positive emotional perception and, in general, a positive attitude.

To determine consumers' awareness, acceptance and attitudes towards functional foods, a survey was conducted with academics in Izmir as part of a study by Hacıoğlu and Kurt (2012). The study found that the functional foods most preferred by participants were, in order, mineral water, whole-grain diet biscuits and cereal-rich breakfast cereals. Furthermore, it was found that the three health factors most influential in consumers' preference for functional foods were, in order: the ability of functional foods to increase

beneficial bacteria, their aid in weight loss, and their support for children's development and growth.

In a study conducted by Topolska et al. (2021), 20 articles published over the last 20 years were reviewed to identify the needs and demands of functional food consumers. These articles differ in terms of their focus (awareness, attitudes, motivations, willingness, acceptance) and the methodologies employed. The data obtained reveal that increased nutritional knowledge is the most significant factor influencing the demand for functional foods. Furthermore, older adults show greater demand for functional foods compared to younger adults, and women show greater demand compared to men. The study indicates that health is the primary motivating factor for these groups.

A study conducted by Neupane and colleagues (2019) sought to identify the relationship between cultural values and perceptions of functional foods. The results indicate that there is a relationship between consumers' cultural values and their perceptions of functional foods. Perceptions of functional foods depend on consumers' affinity for their culture, their motivation to consume functional foods, and their level of persistence regarding functional foods. Accordingly, it was found that there are more positive perceptions regarding the consumption of functional products in a traditional style. It is emphasised that consumers with health issues or those intending to achieve social integration are more motivated to consume functional foods. Furthermore, there is a positive correlation between consumers' awareness of these foods and their level of positive perception.

A study by Küster-Boluda and Vidal-Capilla (2017) examined how consumer attitudes influence the selection and preference of functional foods in Spain. The results indicate that consumer attitudes have a direct and positive effect on

the willingness to consume functional foods. Furthermore, the study highlights that women hold more positive attitudes towards functional foods compared to men. It is suggested that this is due to women's motivation to lead a healthier lifestyle.

The study conducted by Annunziata and Vecchio (2013) aimed to have 600 participants evaluate four attributes of functional foods. These attributes are listed as: base product (yoghurt, orange juice and biscuits), health claims (general, psychological and preventive), price (high, standard and low) and brand (well-known and unknown). According to the study, when choosing functional foods, consumers primarily consider the product's basic characteristics. In this context, probiotic products received the highest scores.

A study by Kljusurić and Čačić (2014) sought to identify Croatian consumers' perceptions of functional foods. The study, conducted with 250 participants, was carried out in two phases in 2008 and 2013. The data obtained indicated that health factors are highly influential in the consumption of functional foods. It was stated that the growing health consciousness among consumers would also lead to an increase in the consumption of functional foods in the future.

The study conducted by Markovina and colleagues (2011) aimed to examine Croatian young consumers' perceptions of functional foods, identify the attitudes underlying these perceptions, and determine their future intentions to purchase functional foods. According to the data obtained, 40% of young consumers are familiar with functional foods and 27% use them regularly. Consumers consume functional foods most frequently within the dairy and dairy products category and source these products primarily from supermarkets. Consumers prefer functional foods based on price-performance, taste and health considerations. The vast majority of participants hold

a positive perception regarding the future consumption of functional foods. Furthermore, it was found that middle-aged, high-income female participants held a more positive perception of functional foods.

In a study conducted by Verbeke (2005), the extent to which consumers are willing to compromise on taste for the benefit of the product was examined according to socio-demographic factors. Similar studies conducted between 2001 and 2004 demonstrated that people were willing to make greater sacrifices regarding taste in exchange for functional benefits. Whilst the rate at which women and older adults were willing to compromise on taste for functional foods differed significantly in 2001, this difference had disappeared by 2004.

Saher and colleagues (2004) aimed to determine how individuals who consume functional foods are perceived by others. To this end, individuals who consume functional foods were assessed across three dimensions: 'disciplined', 'innovative' and 'kind'. Accordingly, it was concluded that individuals consuming functional foods are generally perceived as more innovative and disciplined, whilst the perception of them being kind is low. It was also emphasised that individuals consuming functional foods possess a healthier image.

8. Method

This study sought to identify restaurant consumers' perceptions of functional foods. To this end, data were collected via a questionnaire. The population of the study consists of restaurant consumers. However, there are financial constraints regarding reaching the entire population. Therefore, restaurant consumers in the city of Istanbul were selected as the study sample using convenience sampling. A total of 404 individuals from this sample participated in the study.

A literature review was conducted at the outset of the research. In this context, the questionnaire developed by Landström et al. (2007) was used to determine perceptions of functional foods. The data collected via this questionnaire were subjected to factor analysis and a normality test. It was concluded that the data followed a normal distribution. Subsequently, frequency analysis and t-tests were performed on the data. Furthermore, an ANOVA test was conducted for measurements involving multiple variables (Coşkun et al., 2017). The analysis of the data in the study was carried out using the SPSS Statistics 22 programme.

Furthermore, this section of the study provides information on the model used to achieve the objective, the data collection tool, the hypotheses and the findings.

8.1. Research Model

Figure 1 shows the research model.

Figure 1. Research Model

8.2. Data Collection Tool

This study sought to determine restaurant consumers' perceptions of functional foods. To this end, a 5-point Likert-type questionnaire developed by Landström et al. (2007) to assess consumers' perceptions of functional foods was utilised.

In addition to the questionnaire in question, participants were asked five demographic questions. Apart from the demographic questions, one question was included in the

questionnaire to determine how frequently consumers consume functional foods. The relationship between the added demographic and frequency questions and the data obtained was also analysed. Reference values were also considered when conducting analyses regarding the level of perception. In this context, the highest possible score obtainable from the survey is 5.00, whilst the lowest score and the average score are 3.00. In line with this reference scale, attitudes and perceptions of 3.00 and above were assessed as positive.

The survey was administered to 404 participants, and descriptive analyses were carried out using t-tests and ANOVA tests on the data obtained. The hypotheses were evaluated considering the results obtained.

8.3. Research Hypotheses

In this study, which aims to determine restaurant consumers' perceptions of functional foods, the hypotheses derived from the literature review are listed as follows.

*H_1 Restaurant consumers have a positive perception of functional foods .

*H_2 Restaurant consumers have a positive awareness of functional foods.

*H_3 Restaurant consumers' knowledge of functional nutrition is positive.

*H_4 Restaurant consumers' doubts regarding nutrition are above average.

*H_5 Restaurant consumers have a positive perception of the benefits of functional foods.

*H_6 Restaurant consumers' intention to eat healthily is above average.

*H_7 Restaurant consumers have a positive perception of the health benefits of functional foods.

*H_8 Restaurant consumers have a positive perception of the risks associated with nutrition.

*H_9 The majority of restaurant consumers consume functional foods at least a few times a week.

*H_{10} There are significant relationships between the 'Perception of Functional Foods' factor and its sub-dimensions among restaurant consumers.

*H_{10a} There are significant relationships between the Functional Food Perception and Functional Food Awareness factors among restaurant consumers.

*H_{10b} There are significant relationships between the Perception of Functional Food and the Nutrition Knowledge factors among restaurant consumers.

*H_{10c} There are significant relationships between the Perception of Functional Food and the Doubt in Nutrition factors among restaurant consumers.

*H_{10d} There are significant relationships between Perception of Functional Food and Perceived Benefits among restaurant consumers.

*H_{10e} There are significant relationships between the perception of functional foods and the intention to eat healthily among restaurant consumers.

*H_{10f} There are significant relationships between Perception of Functional Foods and Perception of Health in Functional Foods among restaurant consumers.

*H_{10g} There are significant relationships between Perception of Functional Food and Perception of Risk among restaurant consumers.

* H_{11} There are significant relationships between the sub-dimensions of the scale.

* H_{12} There are significant relationships between demographic characteristics and the scale scores for Restaurant Consumers' Perception of Functional Foods.

* H_{13} There are significant relationships between the scale scores of the 'Restaurant Consumers' Perception of Functional Foods' and participants' frequency of functional food consumption.

8.4. The Study Population and Sample

The population of this study, which aims to determine restaurant consumers' perceptions of functional foods, consists of restaurant consumers in Turkey. However, reaching this population presents significant constraints in terms of time, financial resources and the number of researchers. Due to these constraints, a convenience sampling method was used in the study, and 404 restaurant consumers in the province of Istanbul were selected as the sample. The main advantage of the convenience sampling method is its cost-effectiveness and the ease with which it can be implemented (Benoot, Hannes and Bilsen, 2016). These characteristics ensure that this method is frequently preferred in both qualitative and quantitative research (Suri, 2011).

8.5. Findings

8.5.1. Findings Regarding Validity

The summability of scores and their normal distribution are of great importance for the analysis of data on the scale (Özdamar, 2016). The analyses conducted in this context are presented in **Table** 2.

Table 2. Descriptive Statistical Values of the Questionnaire on Restaurant Consumers' Perception of Functional Foods

Frequency	404
Arithmetic Mean	3.62
Standard Deviation	0.83
Lowest Score	1.05
Highest Score	5.00
Range	3.95
Skew	-0.466
Flatness	-0.277
Median	3.7619
Kolmogorov-Smirnov	,076
p	,000
KMO	,886
Bartlett's Test	,000

The 404 data points obtained within the scope of the study were entered into the SPSS 22.0 programme. A normality distribution analysis was conducted to ensure the reliability of the data. In this context, the fact that the kurtosis and skewness values of the item- e tests fall between +1 and -1 indicates that the data are normally distributed (Çokluk, Şekercioğlu, and Büyüközürk, 2012). George and Mallery (2010) stated that a value within the range of +2 to -2 is also classified as a normal distribution. In this study, the skewness and kurtosis analyses yielded values of -0.277 and -0.466, respectively. Upon reviewing the criteria in the literature, it is evident that the data are normally distributed.

For statistical analyses to be conducted, the results of the Kaiser-Meyer-Olkin (KMO) test are expected to fall within the range of 0 to 1. This indicates that the sample size is sufficient for the analyses (Seçer, 2015). A value of at least 0.60 for this test indicates that the factor analysis is valid (Nakip, 2017). Furthermore, the p-value for Bartlett's test

must be less than 0.05 ($p < 0.05$) (Kalaycı, 2010). Upon examining the data obtained in this study, the KMO result was found to be 0.886. Furthermore, the significance value of the Bartlett's Test result is 0.000. The relevant data are presented in **Table** 2. The data obtained from the analyses indicate that the requirements for Exploratory Factor Analysis (EFA) have been met.

The data obtained from the EFA are presented in **Table 3**.

Table 3. Eigenvalues and Explained Variance Obtained from EEA

Factor	Eigenvalue	Variance	Cumulative Total
Functional Food Awareness	11,342	54,008	54,008
Nutrition Knowledge	1,922	9,151	63,159
Doubts about Nutrition	1,588	7,563	70,722
Benefit Factor	1,508	7,182	77,904
Intention to Eat Healthily	1,265	6,024	83,927
Perception of Health in Functional Foods	1,132	5,389	89,317
Risk Perception	1,072	5,104	94,421

The data obtained were subjected to AFA. Within this scope, a 7-factor structure with eigenvalues greater than 1 emerged. These factors explain 54.008% of the variance. The data in question are presented in **Table 3**. The data in question are presented in Table 3. The Varimax orthogonal rotation method was used to determine the distribution of items across the factors. As a result, a seven-factor structure was obtained, comprising the following factors, each consisting of three items: Functional Food Awareness, Nutritional Knowledge, Doubt Regarding Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods, and Perception of Risk. Information regarding the items,

along with their factor loadings, is presented in **Table 3**. It is particularly important that the loadings of these items are higher than 0.30 (Kline, 1994). The items in the scale meet this criterion.

Table 4. Item/Factor Loadings of the Scale on Restaurant Consumers' Perception of Functional Foods

Factors/Items	**Factor Loadings (AFA)**	**Skewness**	**Flatness**
1. Awareness of Functional Foods			
I purchase a functional food recommended by a doctor/dietitian/ health professional.	,916	-,556	-,504
Functional foods can repair the damage caused by unhealthy eating habits.	,915	-,534	-,530
I think I can eat more of these products because I consume fewer calories when I eat diet products.	,915	-,554	-,487
2. Nutrition Information			
I am making a serious effort to learn about functional food products via.	,887	-,467	-,627
I always eat a healthy and balanced diet.	,885	-,469	-,600
I avoid highly processed products because I don't know what's in them.	,880	-,492	-,593
3. Doubts About Nutrition			
I am sceptical about foods I have never eaten before.	,873	-,514	-,810
I view the fact that modern technology enables the development of functional foods as a positive thing.	,868	-,519	-,814
I believe that diet products support my health.	,867	-,527	-,802
4. Benefit Factor			
Functional foods make it easier to lead a healthy life.	,871	-,544	-,440

I enjoy trying new and different foods.	,870	-,560	-,416
I believe that diet products help keep my cholesterol levels low.	,868	-,555	-,438
5. Intention to Eat Healthily			
I am very particular about ensuring the food I eat is healthy.	,859	-,524	-,487
Functional foods should mostly be consumed by those who genuinely need them.	,852	-,560	-,443
I try to consume products without additives.	,848	-,553	-,458
6. Perceptions of Health in Functional Foods			
Excessive consumption of functional foods may be harmful to health.	,929	-,158	-,923
Functional foods are completely unnecessary.	,927	-,163	-,940
I believe that functional foods improve my overall health.	,651	-,193	-,603
7. Perception of Risk			
It is important to me that the food I eat every day contains plenty of vitamins and minerals.	,872	-,513	-,513
The new properties of functional foods imply unforeseeable risks.	,870	-,549	-,501
I eat whatever I want and rarely care whether the food I eat is healthy.	, 562	-,563	-,429

***KMO: 0.886**
***Bartlett's Test: .000**

As shown in **Table** 4, the lowest factor loading on the scale is 0.562, whilst the highest is 0.929. The skewness and kurtosis values of the items are also presented in the table. Following AFA, Confirmatory Factor Analysis (CFA) was conducted to validate the factor structure. In this context, the data were entered into the AMOS programme and analysed.

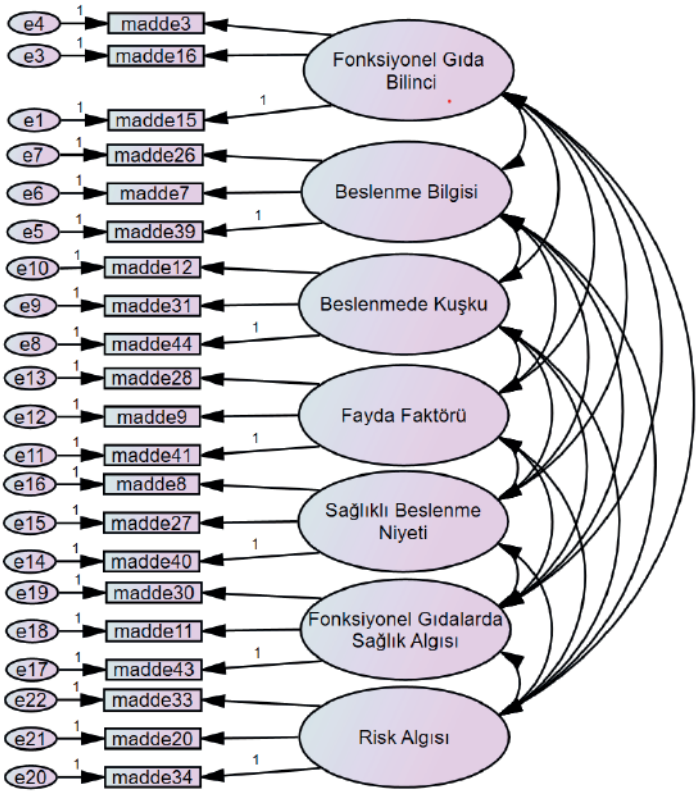

Figure 2. Confirmatory Factor Analysis

The results of the DFA included the chi-square value and degrees of freedom ratio (χ^2/df = 452.836 / 168 = 2.695), GFI (0.909), AGFI (0.875), CFI (0.985), RMR (0.093) and RMSEA (0.65). The values obtained are found to be in line with the standards specified in the literature (Barret, 2007; Byrne, Shavelson, and Muthén, 1989; Jöreskog, 2025; Kline R. B., 2011; Maydeu-Olivares and Garcia Forero, 2010; Tabachnick and Fidel, 2007).

8.5.2. Findings Regarding Reliability

To determine the reliability of the scale, the Cronbach's Alpha internal consistency coefficient (CA) was calculated for the Perception of Functional Food among Restaurant Consumers and its sub-dimensions. A Cronbach's Alpha internal consistency coefficient of over 0.70 is considered desirable (Özdamar, 2013). The findings of the test are presented in **Table** 5.

Table 5. Cronbach's Alpha Internal Consistency Coefficients for the Scale and Factors

Scale	**CA Internal Consistency Coefficient**
Perception of Functional Foods Among Restaurant Consumers	0.957
Awareness of Functional Foods	,997
Nutritional Knowledge	,994
Doubts about Nutrition	,994
Benefit Factor	,996
Intention to Eat Healthily	,991
Perception of Health in Functional Foods	,888
Perception of Risk	,880

The CA internal consistency coefficient for reliability was found to be 0.924. The relevant data are also presented in **Table** 5. When the sub-dimensions of the structure are considered, the CA coefficient for Functional Food Awareness was 0.997, the CA coefficient for Nutritional Knowledge was 0.994, the CA coefficient for Doubt in Nutrition was 0.994, the CA coefficient for Benefit Factor was 0.996, the CA coefficient for Intention to Eat Healthily was 0.991, the

CA coefficient for Perception of Health in Functional Foods was 0.888, and the CA coefficient for Perception of Risk was 0.880. These values indicate that the scale and its sub-dimensions are reliable.

8.5.3. Demographic Findings

This section presents the demographic findings obtained as part of the research. Furthermore, the relationship between the demographic data and the main and sub-dimensions has been analysed.

A total of 404 people participated in the study. There were 204 women and 200 men among the participants. Within this context, the distribution by gender is seen to be nearly equal. The relevant data are presented in **Figure** 3.

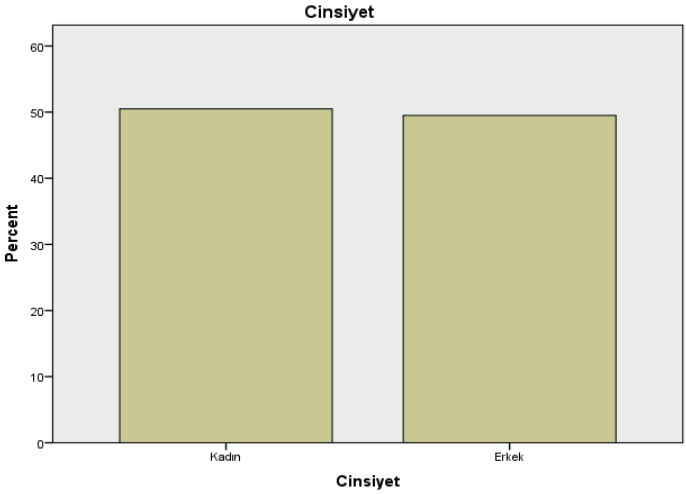

Figure 3. Distribution of Participants by Gender

In addition to these analyses, the scores for Perception of Functional Foods among Restaurant Consumers, Awareness of Functional Foods, Nutritional Knowledge, Doubts about Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods and Perception of Risk. In this context, an Independent Samples t-Test was conducted. The test revealed that scores regarding Restaurant Consumers' Perception of Functional Foods did not differ significantly according to participant gender ($F=0.770$, $T=-0.923$, $p>0.05$). Furthermore, based on gender distribution, scores for Functional Food Awareness ($T=-1.0$), Nutritional Knowledge ($T=-0.470$), Doubt in Nutrition ($T=-0.134$), Benefit Factor ($T=-1.347$), and Intention to Eat Healthily ($T=-0.572$), Perception of Health in Functional Foods ($T=-0.721$) and Perception of Risk ($T=-0.649$) were found not to differ significantly ($p>0.05$).

In the study, numerical data regarding participants' marital status were examined, and it was found that there were 196 married and 208 single participants. As indicated in **Figure** 4, the distribution in this regard is also seen to be quite similar.

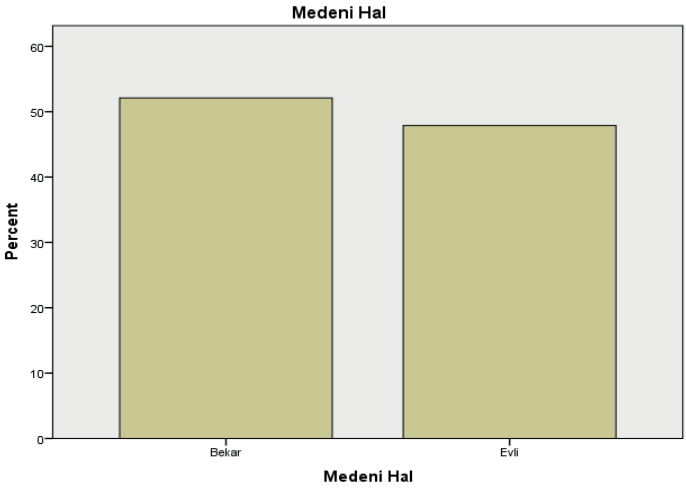

Figure 4. Distribution of Participants by Marital Status

In addition to these analyses, an examination was conducted to determine whether the scores for the factors of Perception of Functional Foods, Awareness of Functional Foods, Nutritional Knowledge, Doubt about Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods, and Perception of Risk among Restaurant Consumers differed significantly according to the participants' marital status. In this context, an Independent Samples t-Test was conducted. The test indicates that scores regarding Restaurant Consumers' Perception of Functional Foods do not differ significantly according to participants' marital status ($F=0.860$, $T=1.412$, $p>0.05$). Furthermore, based on the distribution of marital status, the following factors were analysed: Functional Food Awareness ($T=1.755$), Nutritional Knowledge ($T=0.989$), Doubt in Nutrition ($T=1.422$), Benefit Factor ($T=1.171$), Intention to Eat Healthily ($T=0.551$), Perception of Health

in Functional Foods (T=0.629) and Perception of Risk (T=0.819) did not differ significantly (p>0.05).

The results of the t-test revealed that 23 participants were aged 18–25, 73 were aged 26–50, 164 were aged 51–65 and 144 were aged 66 and over. The relevant data are presented in **Figure** 5. In this context, it was found that the majority of participants (76.2%) were over 50 years of age.

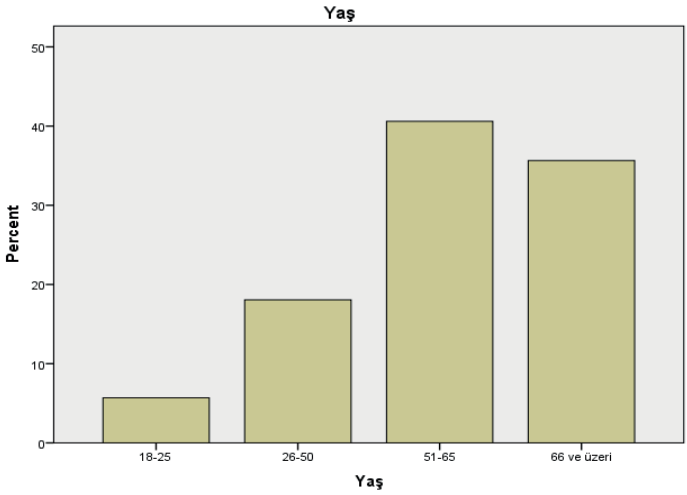

Figure 5. Distribution of Participants by Age Group

An ANOVA test was conducted to analyse whether the scores for the factors of Perception of Functional Foods, Awareness of Functional Foods, Nutritional Knowledge, Doubt Regarding Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods and Perception of Risk among restaurant consumers differed significantly according to the age group of the participants in the study. According to the results of this test, there were no significant differences in Perception of Functional

Foods (F=0.730, p>0.05), Awareness of Functional Foods (F=0.71, p>0.05), Nutritional Knowledge (F=1.040, p>0.05), Doubts about Nutrition (F=0.601, p>0.05), Benefit Factor (F=1.448, p>0.05), Intention to Eat Healthily (F=0.561, p>0.05), Perception of Health in Functional Foods (F=0.406, p>0.05) and Perception of Risk (F=0.548, p>0.05).

Information regarding the participants' educational levels in the study is presented in **Figure** 6. According to this, the vast majority of participants (60.2%, n=243) had completed a bachelor's degree or higher.

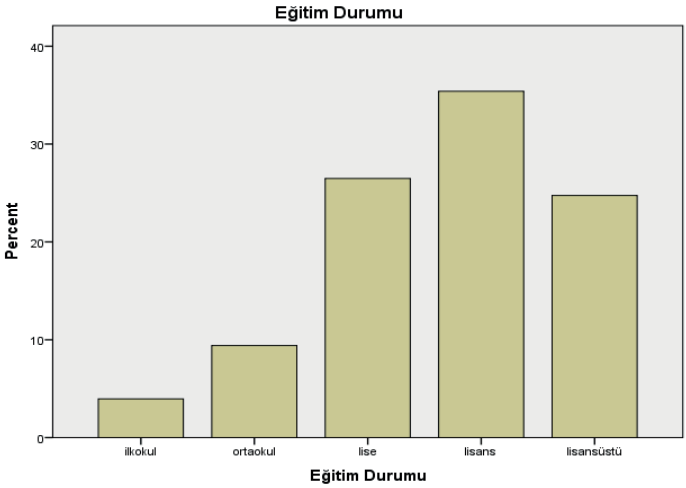

Figure 6. Distribution of Participants by Educational Level

An ANOVA test was conducted to analyse whether there were significant differences in the scores for the factors of Perception of Functional Foods, Awareness of Functional Foods, Nutritional Knowledge, Doubt about Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health

in Functional Foods and Perception of Risk among restaurant consumers, based on the participants' educational status. According to the results of this test, there were no significant differences in Perception of Functional Foods (F=0.270, p>0.05), Awareness of Functional Foods (F=0.527, p>0.05), Nutritional Knowledge (F=0.579, p>0.05), Doubt about Nutrition (F=0.357, p>0.05), Benefit Factor (F=0.910, p>0.05), Intention to Eat Healthily (F=0.248, p>0.05), Perception of Health in Functional Foods (F=1.293, p>0.05) and Perception of Risk (F=0.092, p>0.05).

The income levels of the study participants were analysed. As shown in **Figure** 7, 252 participants had an income of 70,000 TL or more. This figure corresponds to 62.4% of the participants.

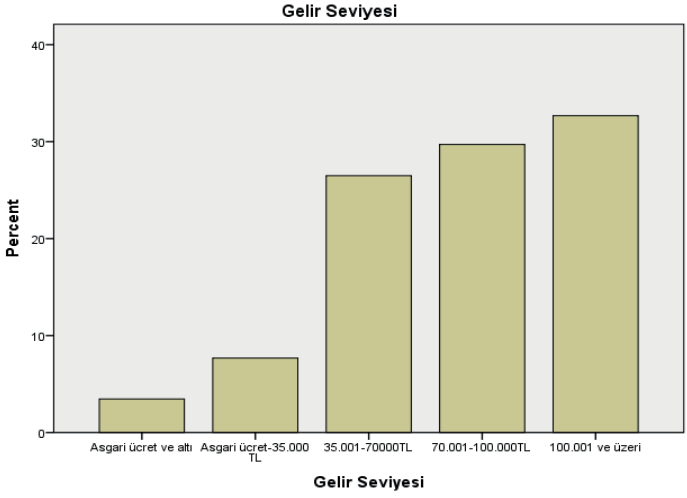

Figure 7. Distribution of Participants by Income Level

An ANOVA test was conducted to analyse whether the scores for the factors of Perception of Functional Foods, Awareness of Functional Foods, Nutritional Knowledge, Doubt about Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods, and Perception of Risk among Restaurant Consumers differed significantly according to the participants' income levels. According to the results of this test, there were no significant differences in Perception of Functional Foods ($F=0.620$, $p>0.05$), Awareness of Functional Foods ($F=0.154$, $p>0.05$), Nutritional Knowledge ($F=0.218$, $p>0.05$), Doubt about Nutrition ($F=1.476$, $p>0.05$), Benefit Factor ($F=0.685$, $p>0.05$), Intention to Eat Healthily ($F=0.451$, $p>0.05$), Perception of Health in Functional Foods ($F=0.456$, $p>0.05$) and Perception of Risk ($F=1.250$, $p>0.05$).

The frequency of functional food consumption among study participants was analysed. The corresponding percentage data are shown in **Figure** 8. In this context, 15 participants never used functional foods, 43 used them rarely, 104 used them a few times a month, 114 used them a few times a week, and 128 used them daily. Accordingly, it is observed that more than 50% of the participants consume functional foods at least once a week. These results support the acceptance of hypothesis H_9.

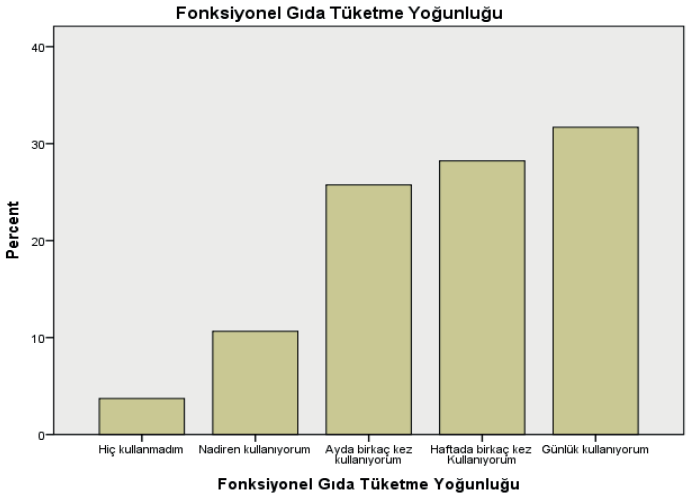

Figure 8. Distribution of Participants by Frequency of Functional Food Consumption

Based on the analyses conducted, no significant positive correlations were found between the scale scores of Restaurant Consumers' Perception of Functional Foods and demographic factors. Consequently, hypothesis H_{12}has been rejected.

In the study, there were no significant differences in the scores for Perception of Functional Foods, Awareness of Functional Foods, Nutritional Knowledge, Doubt about Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods and Perception of Risk. According to the results of this test, there were no significant differences in Perception of Functional Foods ($F=0.396$, $p>0.05$), Awareness of Functional Foods ($F=0.600$, $p>0.05$), Nutritional Knowledge ($F=0.824$, $p>0.05$), Doubt about Nutrition ($F=0.233$, $p>0.05$), Benefit Factor ($F=0.944$, $p>0.05$), Intention to Eat Healthily ($F=0.436$, $p>0.05$), Perception of Health in Functional Foods ($F=0.098$, $p>0.05$)

and Perception of Risk ($F=1.454$, $p>0.05$) did not differ significantly according to participants' frequency of functional food consumption. As no significant relationships were found between the scale scores of Restaurant Consumers' Perception of Functional Foods and the frequency of functional food consumption, hypothesis $H_{13}$was rejected.

8.5.4. Item Mean Values

Various observations were made regarding notable aspects using the mean values obtained within the scope of the research. In this context, the lowest possible score is 1.00, whilst the highest is 5.00. The mean value that can be achieved is 3.00. The data for this analysis are presented **in Table 7**.

Table 7. Item Mean Values Based on Participants' Responses

No	Factors/Items	Item Average Scores
Functional Food Awareness		
1	I purchase a functional food recommended by a doctor, dietitian or health professional.	3.5668
2	Functional foods can repair the damage caused by unhealthy eating habits.	3.5545
3	I think I can consume more of these products because I take in fewer calories when I eat diet products.	3.5693
Nutrition Information		
4	I am making a serious effort to learn about functional food products.	3.7277
5	I always eat a healthy and balanced diet.	3.7327
6	**I avoid highly processed foods because I don't know what's in them**	3.7475
Doubts about Nutrition		
7	I am sceptical about foods I have never eaten before	3.6411
8	I view the fact that modern technology enables the development of functional foods as a positive thing.	3.6510
9	I believe that diet products support my health.	3.6485
Benefit Factor		
10	Functional foods make it easier to lead a healthy life.	3.6238

11	I enjoy trying new and different foods.	3.6337
12	I believe that diet products help keep my cholesterol levels low.	3.6436
Intention to Eat Healthily		
13	I am very particular about ensuring the food I eat is healthy.	3.6881
14	Functional foods should mostly be consumed by people who really need them.	3.7079
15	I try to consume products without additives.	3.7079
Perception of Health in Functional Foods		
16	**Excessive consumption of functional foods can be harmful to health.**	3.3787
17	Functional foods are completely unnecessary.	3.3936
18	I believe that functional foods improve my overall health.	3.4406
Risk Perception		
19	It is important to me that the food I eat every day contains plenty of vitamins and minerals.	3.7153
20	The new properties of functional foods imply unforeseeable risks.	3.7401
21	I eat whatever I want and rarely concern myself with whether the food I eat is healthy.	3.6658

Analysis of the data reveals that the highest score, 3.7475, corresponds to the statement: "I avoid highly processed products because I don't know what's in them." Conversely, the lowest score, 3.3787, corresponds to the statement: "Excessive consumption of functional foods can be harmful to health."

8.5.5. Findings Regarding Restaurant Customers' Perceptions of Functional Foods

This study aimed to determine restaurant consumers' perceptions of functional foods. The highest possible score on the scale used in this context is 5.00, whilst the lowest is 1.00. Furthermore, the average score is 3.00. Normality analyses indicate that the data is normally distributed. The relevant data is also presented in **Table** 4.

The data collected to determine perceptions regarding functional food perception, functional food awareness, nutritional knowledge, dietary uncertainty, benefit factor, intention to eat healthily, health perception of functional foods and risk perception among restaurant consumers were subjected to a one-sample t-test. These results are shown in **Table 8**.

Table 8. Results of the One-Sample t-Test

	N	Arithmetic Mean	Standard Deviation	p	df	t
Perception of Functional Foods Among Restaurant Patrons	404	3.6275	,83887	,000	404	86.917
Functional Food Awareness	404	3.5635	1.19071	,000	404	60.154
Nutritional Information	404	3,7360	1,087.38	,000	404	69.058
Doubts About Nutrition	404	3,6469	1,209.12	,000	404	60.623
Benefit Factor	404	3.6337	1.12911	,000	404	64,684
Intention to Eat Healthily	404	3,7013	1.11308	,000	404	66,838
Perception of Health in Functional Foods	404	3,4043	1.03051	,000	404	66,400
Risk Perception	404	3.7071	1.00879	,000	404	73.862

****Standard value = 3.00***

404 data points were analysed as part of the t-test. Within this scope, the mean scores of the factors were determined. Accordingly, when considering the arithmetic means, the scores were as follows: Perception of Functional Foods among Restaurant Consumers 3.62, Awareness of Functional Foods 3.56, Nutritional Knowledge 3.73, Doubt in Nutrition

3.64, Benefit Factor 3.63, Intention to Eat Healthily 3.70, Perception of Health in Functional Foods 3.40 and Perception of Risk 3.70. The t-statistic values identified in the test are also presented in **Table 7**. Furthermore, the significance value for the Perception of Functional Foods and all its sub-dimensions among Restaurant Consumers was found to be 0.000 ($p<0.05$). The results obtained indicate that all factors are above the reference value. In this context, hypotheses $H_1, H_2, H_{(3)}, H_4, H_5, H_6, H_{7 \text{and}} H_8$ have been accepted.

Pearson correlation coefficients were calculated to determine construct validity. The relevant data are presented in **Table** 9.

Table 9. Factor Correlation Values

	Perception of Functional Foods Among Restaurant Consumers	Functional Food Awareness	Nutritional Knowledge	Doubts about Nutrition	Benefit Factor	Intention to Eat Healthily	Perception of Health in Functional Foods	Perception of Risk
Awareness of Functional Foods	1	,452	,480	,543	,442	,356	,480	,719
p		,000	,000	,000	,000	,000	,000	,000
Nutritional Information	,452	1	,505	,490	,602	,445	,530	,758
p	,000		,000	,000	,000	,000	,000	,000
Doubts About Nutrition	,480	,505	1	,562	,578	,432	,584	,791
p	,000	,000		,000	,000	,000	,000	,000
Benefit Factor	,543	,490	,562	1	,545	,425	,562	,783
p	,000	,000	,000		,000	,000	,000	,000

Intention to Eat Healthily	,442	,602	,578	,545	1	,470	,561	,793
p	,000	,000	,000	,000		,000	,000	,000
Perception of Health in Functional Foods	,356	,445	,432	,425	,470	1	,432	,664
p	,000	,000	,000	,000	,000		,000	,000
Risk Perception	,480	,530	,584	,562	,561	,432	1	,778
p	,000	,000	,000	,000	,000	,000		,000
Perception of Functional Foods Among Restaurant Diners	,719	,758	,791	,783	,793	,664	,778	1
p	,000	,000	,000	,000	,000	,000	,000	

According to the correlation analysis conducted, there are statistically significant positive relationships at the 0.01 level between all factors. In this regard, it is observed that the strongest relationship is between the Perception of Functional Foods among Restaurant Consumers and the Intention to Eat Healthily, with a correlation coefficient of 0.793. The lowest correlation, at 0.356, is observed between Awareness of Functional Foods and Perception of Health in Functional Foods. Subsequently, a simple regression test was conducted to determine the effects of the factors on one another. The test results are presented in Figure 9.

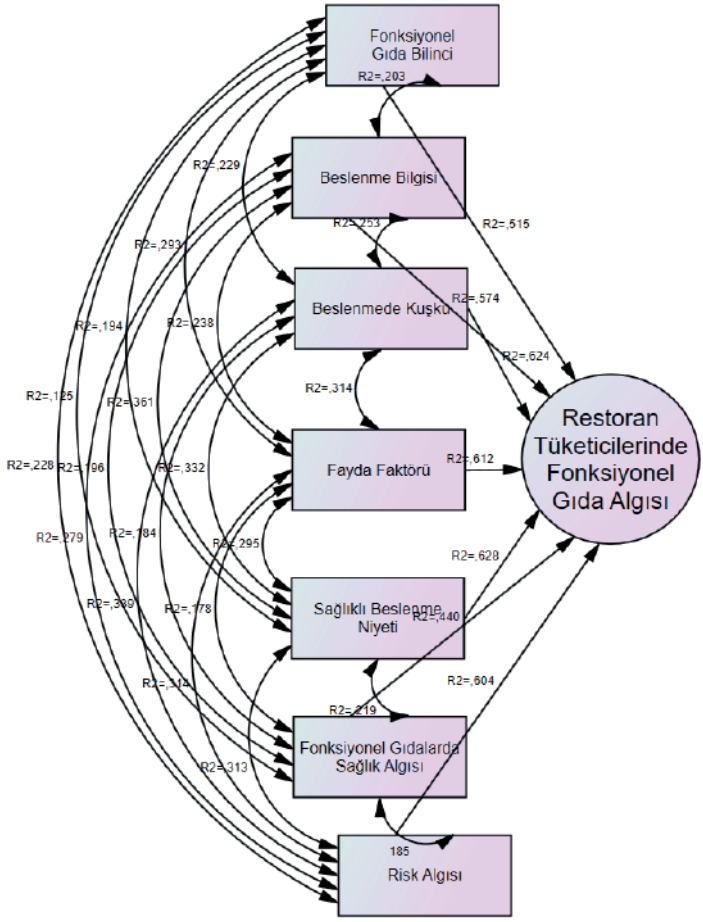

Figure 9. *R^2 Values Based on Regression Analysis Results*

A simple regression analysis was conducted to determine the effect of the sub-dimensions on the Perception of Functional Foods among Restaurant Consumers and their effects on one another. The R^2 values for these tests are indicated in **Figure** 9.

In this context, it is observed that the Functional Food Awareness Factor explains 51% (adjusted $R^2 = 0.515$) of the

Functional Food Perception among Restaurant Consumers. When the standardised regression coefficient (β) was calculated, a significant positive relationship was found between Functional Food Awareness and the Perception of Functional Food among Restaurant Consumers (β = 0.719, p = 0.000).

The effect of Nutritional Knowledge on the Perception of Functional Food among Restaurant Consumers was analysed using a simple regression test. In this context, it was found that Nutritional Knowledge explains 57% (adjusted R^2= 0.574) of the Perception of Functional Food among Restaurant Consumers. When the standardised regression coefficient (β) was calculated, a significant positive relationship was found between Nutritional Knowledge and the Perception of Functional Foods among Restaurant Consumers (β = 0.758, p = 0.000).

The effect of Nutritional Doubt on the Perception of Functional Foods among Restaurant Consumers was analysed using a simple regression test. In this context, it was found that Nutritional Doubt explains 62% (adjusted R^2= 0.624) of the Perception of Functional Foods among Restaurant Consumers. When the standardised regression coefficient (β) was calculated, a significant positive relationship was found between Nutritional Knowledge and the Perception of Functional Foods among Restaurant Consumers (β = 0.791, p = 0.000).

The effect of the Benefit Factor on the perception of functional food among restaurant consumers was analysed using a simple regression test. In this context, it was found that the Benefit Factor explains 61% (adjusted R^2= 0.612) of the variation in the perception of functional food among restaurant consumers. When the standardised regression coefficient (β) was calculated, a positive and significant relationship was

found between Nutritional Knowledge and the Perception of Functional Foods among Restaurant Consumers (β = 0.783, p = 0.000).

The effect of Healthy Eating Intention on functional food perception among restaurant consumers was analysed using a simple regression test. In this context, it was found that Healthy Eating Intention explains 62% (adjusted R^2= 0.628) of the variance in functional food perception among restaurant consumers. When the standardised regression coefficient (β) was calculated, a significant positive relationship was found between Nutritional Knowledge and Perception of Functional Foods among Restaurant Consumers (β = 0.793, p = 0.000).

The effect of the Perception of Health in Functional Foods on the Perception of Functional Foods among Restaurant Consumers was analysed using a simple regression test. In this context, it was found that the Perception of Health in Functional Foods explains 44% (adjusted R^2= 0.440) of the Perception of Functional Foods among Restaurant Consumers. When the standardised regression coefficient (β) was calculated, a significant positive relationship was found between Nutritional Knowledge and Perception of Functional Foods among restaurant consumers (β = 0.664, p = 0.000).

The effect of Risk Perception on Perception of Functional Food among Restaurant Consumers was analysed using a simple regression test. In this context , it was found that Risk Perception explains 60% (adjusted R^2= 0.604) of the variance in Perception of Functional Food among Restaurant Consumers. When the standardised regression coefficient (β) was calculated, a significant positive relationship was found between Nutritional Knowledge and Perception of Functional Foods among Restaurant Consumers (β = 0.778, p = 0.000).

Following these analyses of restaurant consumers' perceptions of functional foods, simple linear regression analyses

were conducted between the sub-dimensions to identify the interactions between them. In this context, it was observed that Functional Food Awareness and Nutritional Knowledge mutually explained 20% of each other's variance (adjusted $R^2 = 0.203$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Functional Food Awareness and Nutritional Knowledge ($\beta = 0.452$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Functional Food Awareness and Doubt in Nutrition. In this context, it was observed that Functional Food Awareness and Doubt in Nutrition mutually explain each other by 23% (adjusted $R^2 = 0.229$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Functional Food Awareness and Intention to Eat Healthily ($\beta = 0.480$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Functional Food Awareness and the Benefit Factor. In this context, it is observed that Functional Food Awareness and the Benefit Factor mutually explain 29% of each other's variation (adjusted $R^2 = 0.293$) . Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Functional Food Awareness and the Benefit Factor ($\beta = 0.543$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Functional Food Awareness and Healthy Eating Intention. In this context, it is observed that Functional Food Awareness and Healthy Eating Intention mutually explain 19% of each other (adjusted $R^2 = 0.194$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between

Functional Food Awareness and Healthy Eating Intention ($\beta = 0.442$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Functional Food Awareness and Perception of Health in Functional Foods. In this context, it was found that Functional Food Awareness and Perception of Health in Functional Foods mutually explain each other by 12% (adjusted $R^2 = 0.125$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Functional Food Awareness and Perceived Health Benefits of Functional Foods ($\beta = 0.356$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Functional Food Awareness and Risk Perception. In this context, it was observed that Functional Food Awareness and Risk Perception mutually explain each other by 23% (adjusted $R^2 = 0.228$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Functional Food Awareness and Risk Perception ($\beta = 0.480$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Nutritional Knowledge and Doubt about Nutrition. In this context, it was found that Nutritional Knowledge and Doubt about Nutrition mutually explain each other by 25% (adjusted $R^2 = 0.253$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Nutritional Knowledge and Doubt about Nutrition ($\beta = 0.505$, $p = 0.000$).

A simple regression test was conducted to determine the mutual influence between Nutritional Knowledge and the Benefit Factor. In this context, it was observed that Nutritional Knowledge and the Benefit Factor mutually explain 24% of each other (adjusted $R^2 = 0.238$). Upon examining the

standardised regression coefficient (β), a positive and significant relationship was found between Nutritional Knowledge and the Benefit Factor (β = 0.490, p = 0.000).

A simple regression test was conducted to determine the mutual influence between Nutritional Knowledge and Intention to Eat Healthily. In this context, it was observed that Nutritional Knowledge and Intention to Eat Healthily mutually explain each other by 36% (adjusted R^2= 0.361). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Nutritional Knowledge and Intention to Eat Healthily (β = 0.602, p = 0.000).

A simple regression test was conducted to determine the mutual influence between Nutritional Knowledge and Perception of Health in Functional Foods. In this context, it was found that Nutritional Knowledge and Perception of Health in Functional Foods mutually explained 19% of each other's variation (; adjusted R^2=0.196). Upon examining the standardised regression coefficient (β), a positive and statistically significant relationship was found between Nutritional Knowledge and Perception of Health in Functional Foods (β = 0.445, p = 0.000).

A simple regression test was conducted to determine the reciprocal relationship between Nutritional Knowledge and Risk Perception. In this context, it was found that Nutritional Knowledge and Risk Perception jointly explain 28% of the variation in each other (adjusted R^2= 0.279). Upon examining the standardised regression coefficient (β), a positive and statistically significant relationship was found between Nutritional Knowledge and Risk Perception (β = 0.530, p = 0.000).

A simple regression test was conducted to determine the mutual influence between Doubt in Nutrition and the

Benefit Factor. In this context, it was observed that Doubt in Nutrition and the Benefit Factor mutually explain each other by 31% (adjusted R^2= 0.314). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between the Doubt and Benefit Factors in Nutrition (β = 0.562, p = 0.000).

A simple regression test was conducted to determine the mutual influence between Doubt about Diet and Intention to Eat Healthily. In this context, it was observed that Doubt about Diet and Intention to Eat Healthily mutually explain each other by 33% (adjusted R^2= 0.332). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Dietary Doubt and Intention to Eat Healthily (β = 0.578, p = 0.000).

A simple regression test was conducted to determine the mutual influence between Dietary Doubt and Perceived Health Benefits of Functional Foods. In this context, it was found that Dietary Doubt and Perceived Health Benefits of Functional Foods mutually explain each other by 18% (adjusted R^2= 0.184). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Doubt in Nutrition and Perceived Health Benefits of Functional Foods (β = 0.432, p = 0.000).

A simple regression test was conducted to determine the mutual influence between Doubt about Nutrition and Perceived Risk. In this context, it was found that Doubt about Nutrition and Perceived Risk mutually explain each other by 34% (adjusted R^2= 0.339). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between Dietary Doubt and Risk Perception (β = 0.584, p = 0.000).

A simple regression test was conducted to determine the mutual influence between the Benefit Factor and the Intention

to Eat Healthily. In this context, it was found that the Benefit Factor and the Intention to Eat Healthily mutually explain each other by 29% (adjusted R^2= 0.295). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between the Benefit Factor and the Intention to Eat Healthily (β = 0.545, p = 0.000).

A simple regression test was conducted to determine the mutual influence between the Benefit Factor and the Perception of Health in Functional Foods. In this context, it was observed that the Benefit Factor and the Perception of Health in Functional Foods mutually explain each other by 18% (adjusted R^2= 0.178). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between the Benefit Factor and the Perception of Health in Functional Foods (β = 0.425, p = 0.000).

A simple regression test was conducted to determine the mutual influence between the Benefit Factor and Perceived Risk. In this context, it was observed that the Benefit Factor and Perceived Risk mutually explain 31% of the variance (adjusted R^2= 0.314). Upon examining the standardised regression coefficient (β), a positive and statistically significant relationship was found between the Benefit Factor and Risk Perception (β = 0.562, p = 0.000).

A simple regression test was conducted to determine the mutual influence between the Intention to Eat Healthily and the Perception of Health in Functional Foods. In this context, it was observed that the Intention to Eat Healthily and the Perception of Health in Functional Foods mutually explain each other by 22% (adjusted R^2= 0.219). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between the Intention to Eat Healthily and the Perception of Health in Functional Foods (β = 0.470, p = 0.000).

A simple regression test was conducted to determine the mutual influence between the Intention to Eat Healthily and Perceived Risk. In this context, it was found that the Intention to Eat Healthily and Perceived Risk mutually explain each other by 31% (adjusted $R^2 = 0.313$). Upon examining the standardised regression coefficient (β), a positive and significant relationship was found between the Intention to Eat Healthily and Risk Perception ($\beta = 0.432$, $p = 0.000$).

A simple regression test was conducted to determine the reciprocal relationship between Perceived Health Benefits and Perceived Risks in Functional Foods. In this context, it was found that Perceived Health Benefits and Perceived Risks in Functional Foods jointly explain 18% of the variation (adjusted $R^2 = 0.185$). Upon examining the standardised regression coefficient (β), a positive and statistically significant relationship was found between Perceived Health Benefits and Perceived Risks of Functional Foods ($\beta = 0.561$, $p = 0.000$). These results support the acceptance of Hypothesis H_{11}.

9. Conclusions and Recommendations

Nowadays, people's health concerns have increased, and they have begun to pay greater attention to what they consume (Kıyak et al., 2014). With intensive research conducted by relevant parties in this context (Roberfroid, 1999), functional foods have emerged (Boyayıcıoğlu, 2012). This study also sought to determine restaurant consumers' perceptions of functional foods.

In line with the study's objective, the literature was first reviewed and hypotheses were formulated. Furthermore, the scale developed by Landström et al. (2007) to assess consumers' attitudes towards functional foods was utilised to obtain the necessary data. This scale was administered to 404 restaurant consumers in Istanbul, selected via convenience sampling from the population of restaurant consumers. Based on the data obtained, a seven-factor structure emerged, each comprising three items. These are listed as Functional Food Awareness, Nutritional Knowledge, Doubt about Nutrition, Benefit Factor, Intention to Eat Healthily, Perception of Health in Functional Foods, and Perception of Risk. Validity and reliability analyses were conducted on this structure, yielding positive results. Following this, t-tests and ANOVA analyses were performed on the data. These tests revealed some significant findings. The analyses demonstrate that

there are significant relationships between the scale and its sub-dimensions. Furthermore:

* Restaurant consumers have a positive perception of functional foods,

* Restaurant consumers have a positive awareness of functional foods,

* Restaurant consumers' knowledge of functional nutrition is positive,

* Restaurant consumers' doubts regarding nutrition are above average,

* Restaurant consumers have a positive perception of the benefits of functional foods,

* Restaurant consumers' intention to eat healthily is above average,

*Restaurant consumers have a positive perception of the health benefits of functional foods,

*Restaurant consumers have a positive perception of the risks associated with nutrition,

*It was found that the majority of restaurant consumers consume functional foods at least a few times a week.

It was analysed whether these findings varied according to demographic characteristics. However, it was found that there was no significant change in the results obtained based on the participants' demographic status. Furthermore, it was concluded that the results did not vary according to the participants' frequency of functional food consumption.

This study has identified perceptions regarding functional foods among restaurant consumers. Consequently, it has enabled food and beverage service establishments to gain insight into consumers' perceptions of functional foods. These

findings are significant not only for restaurants but for all establishments where food and drink are served. Furthermore, as this is the first study to evaluate functional foods from the perspective of restaurant consumers' perceptions, it has made significant scientific contributions to the literature and relevant stakeholders.

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Prof. Dr. Mehmet Sarıoğlan
Recep Tayyip Ünüvar

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